ORIGINAL ARTICLE

Orthopedic Residents' Perception of a Hybrid Hand Surgery Rotation during the COVID-19 Pandemic at the Philippine General Hospital: A Qualitative and Quantitative Study

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ABSTRACT

Objectives. The objectives of the study were to determine the resident-physicians' perspectives with regards the changes implemented in their Hand Surgery rotation at the Philippine General Hospital in response to the COVID-19 pandemic, and establish correlation, if any, of these perspectives to their performance in the said rotation based on their final grades.

Methods. Thirteen (13) residents were chosen for the study, all of which had rotated with the division at least once after the implementation of the changes were made, to answer an online survey and participate in an online group discussion, focusing on their feedback on the effects of these changes in terms of their skills and overall patient care.

Results. In general, the participants agreed strongly to the usefulness of the hybrid set-up with Likert survey answers ranging from 3.5 to 4 points in favor of the changes implemented. Eleven of the 13 participants had their mean survey answer scores matched with their respective grades obtained during his/her rotation with the division, showing no correlation.

Conclusion. The study showed a generally positive perception by the orthopedic residents to the hybrid set-up in the Hand Surgery rotation in response to the COVID-19 pandemic. No clear correlations or trends were seen between the trainees' perceptions of the changes implemented and his/her objective performance based on the final grade for his/her rotation. Potential topics for investigation related to this may focus on using larger sample size or clinical outcomes of cases done by trainees who have undergone the hybrid training set-up.

Keywords: COVID, orthopedics, resident, training

INTRODUCTION

When Manila, the Philippines' capital was placed under lockdown, locally termed as an Extended Community Quarantine (ECQ), all teaching activities at the University of the Philippines-Philippine General Hospital (UP-PGH) were put on hold. The moratorium took effect for both medical school students and post-graduate residents. As a result, all departmental conferences, division rounds, out-patient clinics, and most non-essential surgeries at the Orthopedic department had to stop. Realizing the need to continue with the Orthopedic residents' education, self-study was encouraged using the "Orthobullets" platform with the results of the online quizzes being monitored. Online special topic discussions were conducted with the different members of the consultant staff. When the city was shifted

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to a less restrictive General Community Quarantine (GCQ) and surgical services were partially resumed to include the less severe injuries and some elective procedures, the department resumed its weekly conference, but done purely via online platforms. It was also at this point that residents' training was slowly resumed.

To prepare for residents rotating once again, the Division of Hand Surgery had to revise its learning objectives. Although what was expected of a graduate of the program (the terminal competencies) would remain, the intermediate competencies had to be adjusted to reflect the decreased patient census. Rather than relying on in-person didactic activities to teach our residents, self-study, and the use of online materials for cognitive learning were encouraged. Models and cadavers for the development of component skills were utilized to compensate for the scarcity of actual patients for our residents to be taught and to hone their skills.

As the rotations resumed, limited patient care consisted of a few patients at the clinic, telemedicine consults, and a relatively limited number of emergency room consults and surgical procedures. The departmental conferences and weekly division rounds continued. The remaining time was devoted to self-study and surgical skills development.

An end-rotation grade was then assigned based on his/her performance during conferences and rounds, oral and written examinations, and clinical skills and attitude. For purposes of the study, the term "hybrid" was used to refer to the modified curriculum for trainees, particularly the set-up in which cadavers and skills training workshops were used as parameters for academic assessment.

Review of Literature

At the start of most programs, Orthopedic residents gained new knowledge by studying assigned texts and journals on their own and attending live lectures and conferences (whether departmental or that of the specialty society). Skills were learned and developed using the traditional (apprenticeship) model of "see one, do one, teach one." Recently, with the ease in accessing the internet and the increasing content available, web-based learning has been more frequently utilized. The "hybrid" setting – a combination of face-to-face and online activities, has been utilized by several training institutions across the world. Since the start of this millennium until the present, an increasing part of those undergoing post-graduate medical education (which includes orthopedic residencies) are of the Millennial Generation. Being more computer-literate than previous generation, these individuals utilize multi-media and web-based tools to learn and communicate.[1] The acquisition of knowledge from live online and recorded lectures has been increasing and has been shown to be as effective as live lectures while being more convenient.[2] Recorded lectures were preferred over live Zoom lectures[3] but, apparently, students who were performing poorly preferred live courses[4]. Given the broad array of clinical skills that an Orthopedic resident needs to develop, and the increasing emphasis on patient safety, simply practicing on a live patient is becoming unacceptable. The American Board of Orthopedic Surgery now requires surgical simulation training. Although most programs would have the simulation training spread out, some programs would do these during a "boot camp" at the start of the residency. When comparing the skills of new PGY-1 residents in Michigan who did an "intern boot camp" to those of regular PGY-2 residents who had just completed their internship, the differences were not statistically significant.[5] The simulators used may be very technology-dependent and cost a significant amount. The Fundamentals of Orthopedic Surgery (FORS) utilized an orthopedic skills board made from supplies purchased at a local hardware store was found to be an effective simulator for the trainees to practice skills on, despite its low cost.[6] These asynchronous and online activities were considered to be complementary to live and in-person activities. It has been suggested that the traditional method of "see one, do one, teach one," though simple, is still applicable, albeit with some modifications.[7]

During the ongoing COVID-19 pandemic, with the decreased patient volume, need for additional manpower to care for COVID-19 patients, increased concerns for the residents' safety and well-being, many programs had to adjust their priorities and activities. Often, orthopedic residents had to relearn previous competencies as they were assigned to care for COVID-19 patients.[8,9] The trainees' well-being and education were prioritized by almost all programs.[10,11] Due to financial and logistical concerns, some programs had difficulty providing their residents with ideal protection, and their clinical work became more difficult.[12] Adjustments made to the residents' training included the emphasis on self-study and shifting to web-based learning.[9-12] A common concern amongst trainees in various surgical specialties was having a sufficient caseload to both assure the development of skills as well as to meet the minimum case requirements.[13,14] To allow the trainees to continue acquiring necessary skills, a "virtual" boot camp that was developed based on validated training modules and which followed guidelines set by the American Board of Orthopedic Surgeons was developed and implemented.[15] In a survey conducted among residents in a single general surgery program in Mexico, majority of the respondents found similar learning outcomes between the implemented virtual sessions as compared to the traditional face-to-face activities, with the virtual sessions being more convenient.[16]

To date, no studies were found to determine the trainees' perceptions of the changes implemented in surgical training programs as a response to the COVID-19 pandemic. Such a study would guide those planning similar programs as we enter the "new normal." The objectives of the study are to determine the residents' perspectives with regards the hybrid set-up in the Hand Surgery rotation at the Philippine General Hospital implemented in response to the COVID-19 pandemic, and determine the correlation, if any,

between the residents' perspectives with regards the stated changes and their performance, as well as quantitative and qualitative data, during their Hand Surgery rotation.

METHODS

The study was a descriptive, quantitative, and qualitative analysis involving all UP-PGH orthopedic residents who had at least 1 rotation in the Hand Surgery Division since the implementation of the described changes in response to the COVID-19 pandemic. It consists of 2 parts – a survey form and a focus group discussion (FGD). A survey form, shown in Appendix A, which included the consent form approved by the PGH ERB was distributed online to all the participants. A pilot survey, however, was not done because of the lack of availability of the respondents. The survey was formulated with emphasis on the adjustments made in response to the lack of face-to-face activities, minimizing physical contact between and among trainees. Questions about each hybrid activity (eg. Online conferences, skills manual) were simplified, but stressed the importance of convenience, practicality, and sustainability for long term use. Prior to a candidate's participation in the study, an Informed Consent Form was given to each and signed accordingly. Included in the survey was a list of all the changes done and corresponding statements with regards the respondents' perception of these changes. Excluded from the study were resident-trainees who have not yet gone through a full rotation in the Hand Surgery Division. The respondents chose among options in a Likert scale (1: Strongly disagree, 2: Disagree, 3: Agree, 4: Strongly agree) indicating their level of agreement to the statements. The FGD using open-ended questions as was described by Stewart et al. was then done online to allow the respondents to discuss and expound on their answers to the survey (Appendix B).[17] The grades given to the residents during their rotations, which were based on how well they achieved the learning objectives for the rotation, were secured from the division's records and correlated to the participants' survey results. The study covered the period of Hand Surgery Rotations from January – November 2021.

Data Analysis

Descriptive statistics (of central tendency and variability) were used to analyze the survey results. The correlation between the residents' perception of the changes to their performance during the rotation were assessed using the Pearson correlation coefficient. After reviewing the recording/transcription of the responses during the FGD, the investigators determined that, due to the constancy of the responses, as recommended by Stewart, further detailed analysis was not worthwhile.[17]

RESULTS

A total of 13 residents participated in the study. On the learning objectives, 100% strongly agreed that the objectives were easy to understand, while 9 participants noted that these objectives were achievable within the duration of the rotation. The online conferences and division rounds were deemed useful and convenient by all, while only 2 (15.4%) considered its discontinuation in the "new normal". Overall, the skills manual was easy to understand and achievable within the duration of the rotation, and all participants agreed to continuing its practice, with all participants feeling confident in performing the simulated procedures on actual patients. The tendon repair, wound repair, FTF cast/splint, and FTF cadaveric dissection sessions were found to be useful in achieving learning and should be continued. The fracture fixation as well as the microsurgery and nerve repair modules, however, did have two participants disagreeing on being prepared to do the procedure on actual patients. For the telemedicine consultations, eight of the respondents found telemedicine consults to be inadequate for evaluating and treating patients, while seven of the respondents thought that the telemedicine program should still be continued. With regards online exams, quizzes conducted online were deemed to be effective and convenient, and should be continued. Online oral exams, however, were not convenient and should not be continued, according to one respondent, but the majority still were in agreement of its effectiveness, convenience, and its continuation into the "new normal". The scores of the surveys are detailed in Table 1.

Of the 13 respondents, 11 had final grades available and were used to match with the corresponding mean score of their survey answers (Table 2). To determine the relationship between the survey answers of the participants and their corresponding grades, the Spearman correlation analysis was used. No significant correlation was found between the mean score of the survey answers and the grades of the participant. Though there was tendency for participants with high grades having lesser survey answer scores, the sample size may not have been large enough to fully confirm this relationship. Other survey options which would produce a wider range for the response data (e.g., rating from 1-10) can be explored in future studies to better parse out potential correlations. Table 3 shows the statistical analysis done.

On the FGD, all 13 residents were able to participate and give their opinions. Their responses and feedback were consistent with their answers in the survey. Overall, there was a positive view of the hybrid set-up. As reflected by the mean survey scores ranging from 3.5 to 4 on the Likert scale, the curriculum changes were well-received, showing that its inclusion in the training program may be a good the long-term plan. On the learning objectives, the participants expressed their positive feedback, having learning objectives stratified and segregated based on the rotator's year and competence level. This way of clearly stating the learning objectives gives a good standard on which one may base the adequacy of his/her learning and understanding. In general, the adjusted curriculum, which included the addition of the skills manual, and the use of online methods, were deemed effective ways

Table 1. Survey Scores

Survey Question		Participant													Mean Score
		1	2	3	4	5	6	7	8	9	10	11	12	13	
Updated Learning Objectives	The objectives were easy to understand	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	The objectives were achievable within the duration of the rotation	4	4	4	2	4	4	3	4	4	4	4	3	3	3.6
Online Conferences	The online conferences were useful in achieving the learning objectives	4	4	4	4	4	4	4	3	4	3	4	4	3	3.76
	The online conferences were convenient	4	4	4	4	4	4	4	4	4	3	4	4	4	3.92
	This activity should continue in the "new normal"	4	4	4	3	4	4	4	4	4	2	4	3	2	3.53
Online Division Rounds	The online division rounds were useful in achieving the learning objectives	4	3	4	4	4	4	4	4	4	4	4	4	3	3.8
	The online division rounds were convenient	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	This activity should continue in the "new normal"	4	4	4	3	4	4	4	4	4	4	4	3	2	3.69
Skills Manual	The skills manual was easy to understand	4	3	4	4	4	4	4	4	4	4	4	4	4	3.92
	The tasks listed in the skills manual were achievable within the duration of the rotation	4	3	4	4	4	4	4	4	4	4	4	3	4	3.84
	This activity should continue in the "new normal"	4	3	4	4	4	4	4	4	4	4	4	4	4	3.92
	I felt confident/ competent to perform the simulated skills on actual patients	4	3	4	4	4	4	4	4	4	4	4	4	4	3.92
Tendon Repair Module	Performing the tasks listed in the tendon repair module has prepared me to do these techniques in actual patients	4	4	4	4	4	4	4	4	4	3	4	4	3	3.84
	This activity should continue in the "new normal"	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Microsurgery and Nerve Repair Module	Performing the tasks listed in the microsurgery/ nerve repair module has prepared me to do these techniques in actual patients	4	4	4	4	4	4	4	1	3	4	3	3	4	3.53
	This activity should continue in the "new normal"	4	4	4	4	4	4	4	4	4	4	3	4	4	3.92
Fracture Fixation Module	Performing the tasks listed in the fracture fixation module has prepared me to do these techniques in actual patients	4	4	4	4	3	4	2	3	4	4	4	4	4	3.69
	This activity should continue in the "new normal"	4	4	4	4	4	4	3	4	4	4	4	4	4	3.92
Wound Repair Module	Performing the tasks listed in the wound repair module has prepared me to do these techniques in actual patients	4	4	4	4	4	4	3	4	4	4	4	4	4	3.92
	This activity should continue in the "new normal"	4	4	4	4	4	4	4	4	4	4	4	4	4	4
FTF Cast/ Splint Session	The FTF cast/splint session was useful in achieving the learning objectives	4	4	4	4	4	4	3	4	4	4	4	4	4	3.92
	This activity should continue in the "new normal"	4	4	4	4	4	4	4	4	4	4	4	4	4	4
FTF Cadaver Dissection Session	The FTF cadaver dissection session was useful in achieving the learning objectives	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	This activity should continue in the "new normal"	4	4	4	4	4	3	4	4	4	4	4	4	4	3.92
Telemedicine Consults	We were able to adequately evaluate and treat patients through telemedicine consults	3	3	4	2	2	2	3	2	2	2	3	2	1	2.38
	This activity should continue in the "new normal"	3	2	4	2	4	4	3	3	2	1	3	1	2	2.61
Online Quizzes	The online quizzes were effective in determining my level of knowledge	4	4	4	4	4	4	4	4	4	3	3	3	3	3.69
	Taking quizzes online was convenient	4	4	4	4	4	4	4	4	4	3	3	3	4	3.76
	This activity should continue in the "new normal"	4	4	4	4	4	4	4	4	4	2	3	4	3	3.69
Online Structured Oral Examinations	The online structured oral examinations were effective in determining my level of knowledge	4	4	4	4	4	4	4	4	4	2	4	4	4	3.84
	Taking a structured oral examination online was convenient	4	4	4	3	4	4	4	4	4	4	4	4	3	3.84
Mean Score		3.93	3.74	4	3.7	3.90	3.90	3.74	3.74	3.83	3.48	3.77	3.61	3.48	

Table 2. Summary of the Mean Survey Answer and Corresponding Grade Given during the Rotation

Participant	Mean Survey Score	Rotation Grade
1	3.9375	70.59
2	3.71875	71.38
3	4	63.34
4	3.71875	77.61
5	3.875	74.72
6	3.90625	74.25
7	3.78125	67.88
8	3.71875	74.17
9	3.84375	72.8
10	3.5	76.25
11	3.78125	70

Table 3. Correlation Analysis

Spearman r	
r	-0.4506
95% confidence interval	-0.8333 to 0.2241
P value	
P (two-tailed)	0.1652
P value summary	ns
Exact or approximate P value?	Exact
Significant? (alpha = 0.05)	No
Number of XY Pairs	11

of learning based on the perspectives of the residents. The FGD also highlighted and put into detail the positive effects of training on models prior to doing surgical procedures on actual patients. More specifically, it was noted that the skills manual provides a chance for residents to improve their instrument and soft tissue handling, and surgical proficiency, allows for actual tactile feedback crucial for surgery, and provides a leeway to correct errors in techniques without compromising patient care. No negative feedback was noted on the skills manual, with all participants agreeing to have it continued even with an increase in patient census back to pre-pandemic level.

Feedback on conducting conferences, rounds, quizzes, and oral examinations online were also generally positive. In the FGD, participants noted that even the use of online platforms, the face-to-face setting of conferences and rounds were sill the norm when it comes to learning as it provided more spontaneity. The online option however may be comparable, citing its current and potential usefulness for those who will not be able to be physically present in the rounds.

During the FGD, consistent with the survey results, it was shown that the teleconsultations were not an effective tool for patient evaluation, especially with difficulties in contacting patients and problems with physical examination maneuvers and tests (sensory and range of motion examinations). Some participants also deemed the telemedicine consult as redundant since the physical examination must still be repeated on patients' initial and subsequent face-to-face consults. However, it may still be of use as a way of triaging patients to their respective specialty clinics and allow them to be more prepared with diagnostic imaging studies and laboratory tests once they go to the clinics for the face-to-face consultation. Another suggestion for its improvement is to have formal seminars and training sessions on how to maximize its use.

DISCUSSION

The COVID-19 pandemic has greatly affected the different sectors of society. In the context of the Philippine General Hospital, particularly the surgical subspecialties, one of its more obvious effects is the decrease in the patient census and number of surgical cases. Consistent with what was seen in the studies previously cited, our rotators found online or e-learning to be useful.[2-4] Given that our population consisted of post-graduate trainees who are all adult learners and are supposed to be self-guided already, this is expected. The positive feedback and willingness to have it continued was also true for our rounds, conferences, and online examinations. Not surprisingly, our respondents still do prefer in-person activities when these will be feasible. As was seen in the Harvard Boot Camp and in Michigan, our use of even low-fidelity simulators (such as shoestrings for tendon repair) still translated to increased confidence when our trainees had to do an actual procedure.[5,6] This was not true for all our modules however (microsurgery and fracture fixation), and we will need to review these. There was a generally negative impression of the teleconsultation program which was not consistent with what others experienced. These results contrasted with those seen in a meta-analysis and systematic review of teleconsultation used in the field of orthopedics. No significant differences were seen in terms of patient satisfaction, length of visit, or time spent with the physician between the telemedicine and in-office control group. The mean difference of patient preference for telemedicine was significantly higher in the telemedicine group compared to the in-office visit group.[18] This discrepancy could be explained by how the teleconsultation program was implemented in the Philippine General Hospital, as well as our patients' capacity to undergo such activity (internet connection). There being no apparent correlation between how a trainee performed during their rotation and their impression of the changes implemented was different by

what Horn discovered.[4] The difference in our population (university students who may think that getting good grades is important vs post-graduate trainees whose main aim is to obtain the knowledge and skills to be a professional) might be the reason for the discrepancy. From the data obtained in this study, the divisions of the Department of Orthopedics may benefit from having resident rotators undergo routine skills workshops and programs to strengthen surgical acumen and instrument handling in the "new normal". Additionally, a well-placed telemedicine program with proper training may be implemented to maximize its utility, especially with the possible threat of the emergence of different strains and variants of the COVID-19 virus. Furthermore, there are still no standard methods for evaluating training programs and their effectivity. Published studies use patient outcomes and satisfaction scores, but this may be more important with the clinical rather than the academic aspect of orthopedic training. With its establishment, training institutions in the country, and across the globe, may be guided on how best to standardize adequate training for future resident physicians.

CONCLUSION

The study showed a generally positive perception by the orthopedic residents to the changes implemented in response to the COVID-19 pandemic in the Hand Surgery rotation at the Philippine General Hospital. No correlation was found between the respondents' perceptions of the implemented changes with his/her objective performance based on the final grade for his/her rotation with the division. The absence of any significant trends may be suggestive of the ability of the trainees to continue learning, and acquiring the necessary acumen needed for hand surgery. On the other hand, it may also be indicative of the need for more adequate methods of evaluation. For future reference, a study utilizing a larger sample size with inclusion of other Orthopedic subspecialty rotations, may be done to better probe on the specifics. Another would be to conduct a study investigating the comparative clinical outcomes of surgical cases assigned to trainees who have gone through the hybrid curriculum and those who have not.

Statement of Authorship

VETG contributed in the conceptualization of work; JMB and TDM contributed in the conceptualization of work, analysis of data, and drafting and revising of manuscript.

Author Disclosure

All authors declared no conflicts of interest.

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APPENDICES

Appendix A. Survey Form

Survey: Hand Surgery Rotation during the COVID-19 Pandemic
Key: 1 – Strongly Disagree; 2 – Disagree; 3 – Agree; 4 – Strongly Agree

Updated Learning Objectives	**1**	**2**	**3**	**4**
The objectives were easy to understand.				
The objectives were achievable within the duration of the rotation.				
Online Conferences	**1**	**2**	**3**	**4**
The online conferences were useful in achieving the learning objectives.				
The online conferences were convenient.				
This activity should continue in the "new normal."				
Online Division Rounds	**1**	**2**	**3**	**4**
The online division rounds were useful in achieving the learning objectives.				
The online division rounds were convenient.				
This activity should continue in the "new normal."				
Skills Manual	**1**	**2**	**3**	**4**
The skills manual was easy to understand.				
The tasks listed in the skills manual were achievable within the duration of the rotation.				
This activity should continue in the "new normal."				
I felt confident/competent to perform the simulated skills on actual patients.				
Tendon Repair Module	**1**	**2**	**3**	**4**
Performing the tasks listed in the tendon repair module has prepared me to do these techniques in actual patients.				
This activity should continue in the "new normal."				
Microsurgery & Nerve Repair Module	**1**	**2**	**3**	**4**
Performing the tasks listed in the microsurgery/nerve repair module has prepared me to do these techniques in actual patients.				
This activity should continue in the "new normal."				
Fracture Fixation Module	**1**	**2**	**3**	**4**
Performing the tasks listed in the fracture fixation module has prepared me to do these techniques in actual patients				
This activity should continue in the "new normal."				
Wound Repair Module	**1**	**2**	**3**	**4**
Performing the tasks listed in the wound repair module has prepared me to do these techniques in actual patients.				
This activity should continue in the "new normal."				
FTF Cast/Splint Session	**1**	**2**	**3**	**4**
The FTF cast/splint session was useful in achieving the learning objectives.				
This activity should continue in the "new normal."				
FTF Cadaver Dissection session	**1**	**2**	**3**	**4**
The FTF cadaver dissection session was useful in achieving the learning objectives.				
This activity should continue in the "new normal."				
Telemedicine consults	**1**	**2**	**3**	**4**
We were able to adequately evaluate and treat patients through telemedicine consults				
This activity should continue in the "new normal."				
Online Quizzes	**1**	**2**	**3**	**4**
The online quizzes were effective in determining my level of knowledge.				
Taking quizzes online was convenient.				
This activity should continue in the "new normal."				
Online Structured Oral Examinations	**1**	**2**	**3**	**4**
The online structured oral examinations were effective in determining my level of knowledge.				
Taking a structured oral examination online was convenient.				
This activity should continue in the "new normal."				

Appendix B. Focus Group Discussion Questions

Updated Learning Objectives
What made the objectives easy/difficult to understand?
Do you understand why these objectives were set the way they were?
Do you have any ideas on how to improve the learning objectives?
Any additional comments on the learning objectives?
Online Conferences & Division Rounds
What are your views on conducting conferences and rounds via online platforms?
Do you feel that you are at an advantage or disadvantage having the conferences done online as opposed to a face-to-face conference? Explain.
What are your thoughts on continuing these online conferences in the "new normal"?
Skills Manual
What is your understanding of the need to use a skills manual for the training program?
How has the skills manual affected you in terms of being confident in performing surgical procedures?
What are your thoughts on continuing the skills manual in the "new normal"?
Do you have any ideas on how to improve the skills manual?
Any additional comments and suggestions on the skills manual?
Modules & Sessions – tendon repair, microsurgery & nerve repair, fracture fixation, wound repair, FTF casting & splinting, FTF cadaver dissection
How has each specific module or session affected your learning and understanding of the topic?
What are your thoughts on each specific module/session in the "new normal"?
Do you have any ideas on how to improve each specific module/session?
Any additional comments on each specific module/session?
Telemedicine consults
Describe how the telemedicine consultation program has affected patient evaluation and care?
What are your thoughts on continuing the telemedicine consultation program in the "new normal"?
Do you have any ideas on how to improve the telemedicine consultations?
Any additional comments and suggestions on the FTF Cadaver Dissection session?
Online Quizzes & Oral Examinations
What are your thoughts and opinions on conducting quizzes and oral exams online in the "new normal"?
Do you have any ideas on how to improve the online quizzes and oral exams?
Any additional comments regarding online quizzes and oral exams?