

Fostering Intra-professional Teamwork and Communication through a Collaborative Virtual Simulation Experience for DPT and PTA Students.



**Jillian Duff PT, Ph.D.
Marcia Downer PT, DPT, NCS
Department of Physical Therapy**

OBJECTIVES



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Marcia Downer PT, DPT, NCS
Department of Physical Therapy

- Background/Problem
 - PT/PTA roles & responsibilities
 - CAPTE
- Purpose
- Methods
- Results
- Discussion
- Conclusion
- References

BACKGROUND



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Marcia Downer PT, DPT, NCS
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Physical Therapist - Physical Therapist Assistant Roles & Responsibilities

- **PTs:**
 - maintain control of and responsibility for patient/client management.
 - legally and ethically responsible for the PTAs under their direction and supervision.
 - have sole responsibility for patient examination*, evaluation, diagnosis, prognosis, and outcomes
- **PTAs:**
 - assist with the intervention component only.
 - Follow the plan of care established by the PT during the intervention and related data collection*.

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CAPTE Standards – DPT programs

6F. Curriculum includes **interprofessional education** activities directed toward development of interprofessional competencies including, **values/ethics, communication, professional roles & responsibilities, & teamwork.**

6L4. Provide evidence the students have an opportunity for **direction and supervision of PTAs** or other physical therapy personnel.

7D29. **Delineate, communicate and supervise** those areas of the **plan of care** that will be directed to the PTA.

7D30. **Monitor and adjust the plan of care** in response to patient/client status.

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CAPTE Standards – PTA programs

- 7D17. Communicate an understanding of plan of care developed by physical therapist to achieve short- and long-term goals and intended outcomes.
- 7D20. Report any changes in patient/client status or progress to supervising physical therapist.

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- **THE CHALLENGES:**
- PTs and PTAs must work collaboratively in team in health care settings to provide cost-effective and patient-centered care.
- PT graduates are expected to demonstrate entry level competence with supervision and direction of PTAs.
- PT & PTA students traditionally have no interaction during the didactic phase of education.
- PT students have misconceptions of role and preparation of PTAs.
- Students have inadequate exposure to the preferred PT-PTA relationship.
- COVID-19 pandemic

THE IN - PERSON SIMULATION



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Historical Perspective of the Sim Experience: 2019



THE DPT - PTA EXPERIENCE



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- **2019 Simulation Experience**
- Simulation: ideal medium to practice successful PT - PTA collaboration, optimal division of labor, supervision, communication, and mutual respect.
- 2019 PILOT: 88% of students reported that the in-person case-based simulation experience contributed to their ability to communicate and practice collaboratively.
- 2019 PILOT: DPT student scores on knowledge of the Role of the PTA was significantly increased after the experience ($p < .02$).
- COVID 19: shift from in person event to remote experience with virtual simulation and emphasis more on communication

PURPOSE



Jillian Duff PT, Ph.D.
Marcia Downer PT, DPT, NCS
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**To evaluate effects of a virtual
intra-professional simulation experience
on perceptions of PTA roles
and collaborative competency
in DPT and PTA students.**

PARTICIPANTS



Jillian Duff PT, Ph.D.
Marcia Downer PT, DPT, NCS
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PTA Program

Essex County College
Newark NJ

2nd year PTA students (25)

3 Core Faculty



DPT Program

Seton Hall University
Interprofessional Health Sciences Campus
Nutley, NJ

1st year DPT students (39)

8 Faculty (4 core and 4 adjunct faculty)



LEARNING OBJECTIVES



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Marcia Downer PT, DPT, NCS
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Virtual simulation learning objectives

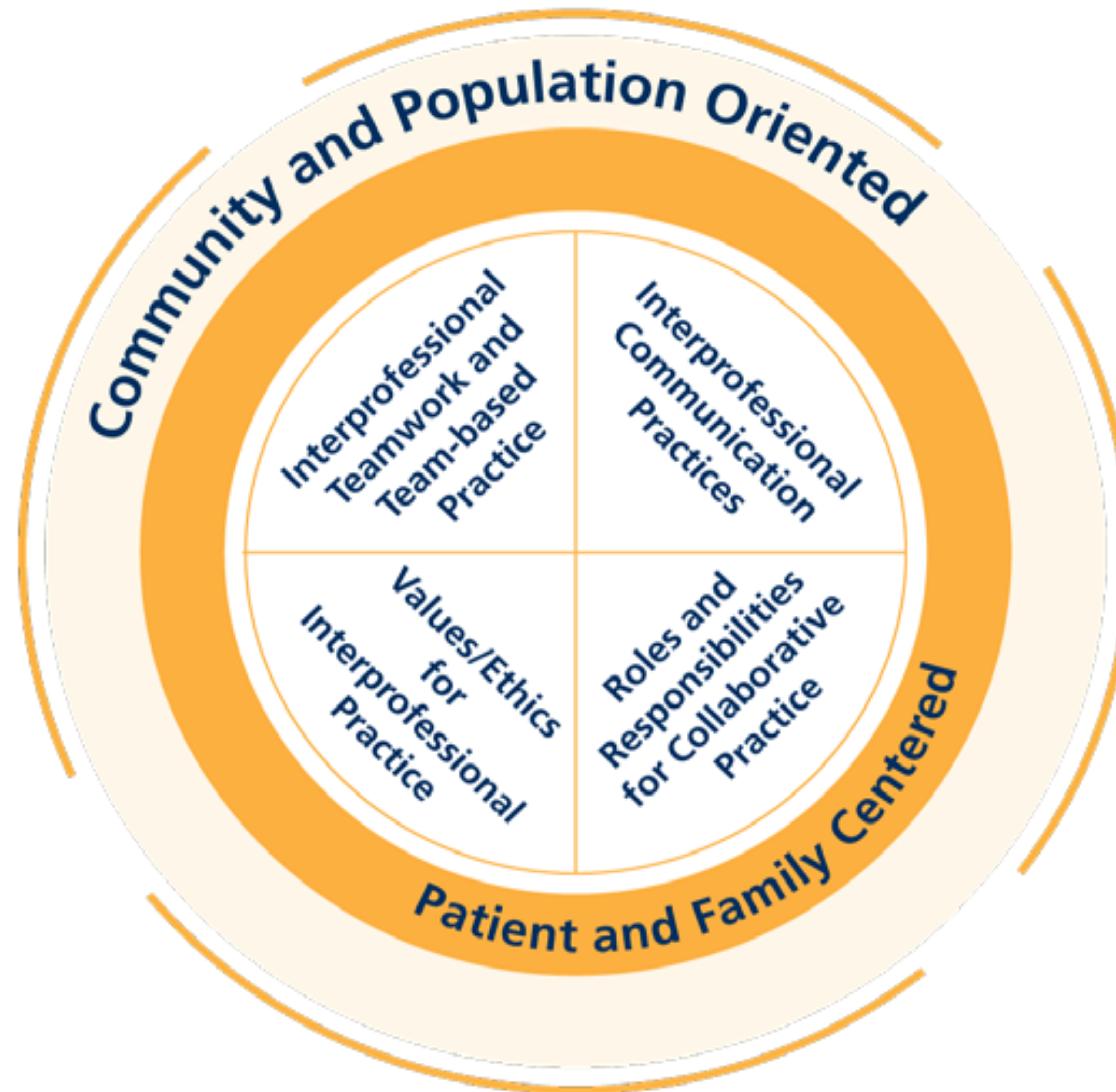
At the end of this activity students will:

1. Select pertinent patient information to communicate to intra/interprofessional team member(s) using SBAR format.
2. Demonstrate effective PT/PTA intra-professional teamwork by collaborating during 2 concurrent patient cases.
3. Demonstrate awareness of scope of practice of PT vs PTA during patient examination, evaluation, delegation of interventions and discharge planning.
4. Demonstrate self-efficacy in the selection of examination and treatment options for gait and functional mobility.

IPEC CORE COMPETENCIES



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The Learning Continuum pre-licensure through practice trajectory

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RESOURCES



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Electronic Medical Record – EHRgo (4 cases)

The screenshot displays the EHRgo interface for a patient named Barry Moore. The patient's information includes DOB: 09/23/1953, 67 yo M, MR#: MR64895, and Admit Date: 08/19/2016 07:59. A warning icon indicates "Aspiration Risk, Full Code, Fall Risk". The main content area shows the "Meds & Administration History" section with a table of scheduled medications.

CATEGORY	DRUG DESCRIPTION	ORDER STATUS	FREQUENCY	ADMIN HISTORY
Scheduled Meds	Alprazolam 0.25 MG Oral Tablet - Dose: 0.25 mg	Active	PRN Q6H	No administrations.
Scheduled Meds	Trazodone Hydrochloride 50 MG Oral Tablet - Dose: 50 mg	Active	QHS	No administrations.
Scheduled Meds	Ranitidine 150 MG Oral Tablet - Dose: 150 mg	Active	PRN Q24H	No administrations.
Scheduled Meds	Docusate Sodium 100 MG Oral Capsule [Colace] - Dose: 100 mg	Active	PRN Q24H	No administrations.

EHRgo
<https://web21.ehrgo.com/>

RESOURCES



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SBAR Communication Tool

S	Situation: identify yourself and the problem, describe your concern concisely
B	Background: state the patient's relevant medical history & clinical problems
A	Assessment: state your clinical impression of the patient's current status
R	Recommendations: explain what you need, make suggestions, clarify expectations, confirm actions to be taken



Microsoft Teams



qualtrics.^{XM}

METHODOLOGY



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**PTA Roles Survey:
 modified with
 permission from
 original author
 to reflect
 New Jersey
 Practice Act
 (pg 1 of 3)**

PTA Role Survey (modified 2019)

INFORMATION GATHERING & SYNTHESIS (during EVALUATION): Activity	Yes	No	Do Not Know
Detect sudden changes in the physiological state			
Monitor vital signs			
Identify potential environmental barriers			
Perform anthropometric measures			
Perform joint ROM tests			
Perform electroneuromyography and nerve conduction tests			
Interpret electrophysiologic examinations			
Perform developmental reflexes and reactions tests			
Prescribe prosthetic/orthotic device			
Perform tests of deep and superficial sensation			
Determine postural alignment and position			
Perform maximal and submaximal aerobic capacity tests			
Measure changes in pain before and after intervention			
Perform tests of peripheral joint mobility (e.g. glide)			
Interpret range of motion measurements for PT diagnosis			
Measure muscle function			
Evaluate balance/aerobic capacity/body mechanics during activities of daily living for prognosis			
Evaluate the initial need for support devices			
Determine the need for referral to other health care provider as part of evaluation process			



TREATMENT PLANNING Activity	Yes	No	Do Not Know
Develop patient plan of care			
Independently modify elements of the plan of care and goals			
Write measurable functional goals (short-term and long-term)			
Prescribe therapeutic exercises			
Plan manual therapy methods			
Adjust ultrasound or electrotherapeutic modalities consistent with the plan of care			
Design self-care and home management			
Select massage techniques within the plan of care			
Modify interventions consistent with the established plan of care			
Prescribe environmental barrier modifications			
Schedule patients, equipment, and space			
Progress the patient interventions through the plan of care			
Select outcome measures to assess collective outcomes of patients			
Reexamination of systems (i.e. metabolic, genitourinary, gastrointestinal)			
Establish discharge plan			

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The ICCAS:
To capture
perceived
ability to
communicate
and collaborate
with others.

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The Interprofessional Collaborative Competency Attainment Scale (Revised)

Using the following scale, please rate your ability for each of the following statements:

1 = "Poor"; 2 = "Fair"; 3 = "Good"; 4 = "Very good"; 5 = "Excellent"

	Before participating in the learning activities, I was able to:					After participating in the learning activities, I was able to:				
	P	F	G	VG	E	P	F	G	VG	E
1. Promote effective communication among members of an interprofessional (IP) team	1	2	3	4	5	1	2	3	4	5
2. Actively listen to IP team members' ideas and concerns	1	2	3	4	5	1	2	3	4	5
3. Express my ideas and concerns without being judgmental	1	2	3	4	5	1	2	3	4	5
4. Provide constructive feedback to IP team members	1	2	3	4	5	1	2	3	4	5
5. Express my ideas and concerns in a clear, concise manner	1	2	3	4	5	1	2	3	4	5
6. Seek out IP team members to address issues	1	2	3	4	5	1	2	3	4	5
7. Work effectively with IP team members to enhance care	1	2	3	4	5	1	2	3	4	5
8. Learn with, from and about IP team members to enhance care	1	2	3	4	5	1	2	3	4	5
9. Identify and describe my abilities and contributions to the IP team	1	2	3	4	5	1	2	3	4	5
10. Be accountable for my contributions to the IP team	1	2	3	4	5	1	2	3	4	5
11. Understand the abilities and contributions of IP team members	1	2	3	4	5	1	2	3	4	5
12. Recognize how others' skills and knowledge complement and overlap with my own	1	2	3	4	5	1	2	3	4	5
13. Use an IP team approach with the patient to assess the health situation	1	2	3	4	5	1	2	3	4	5
14. Use an IP team approach with the patient to provide whole person care	1	2	3	4	5	1	2	3	4	5
15. Include the patient/family in decision-making	1	2	3	4	5	1	2	3	4	5
16. Actively listen to the perspectives of IP team members	1	2	3	4	5	1	2	3	4	5
17. Take into account the ideas of IP team members	1	2	3	4	5	1	2	3	4	5
18. Address team conflict in a respectful manner	1	2	3	4	5	1	2	3	4	5
19. Develop an effective care plan with IP team members	1	2	3	4	5	1	2	3	4	5
20. Negotiate responsibilities within overlapping scopes of practice	1	2	3	4	5	1	2	3	4	5

21. Compared to the time before the learning activities, would you say your ability to collaborate interprofessionally is... (circle one)

1 = Much better now; 2 = Somewhat better now; 3 = About the same; 4 = Somewhat worse now; 5 = Much worse now

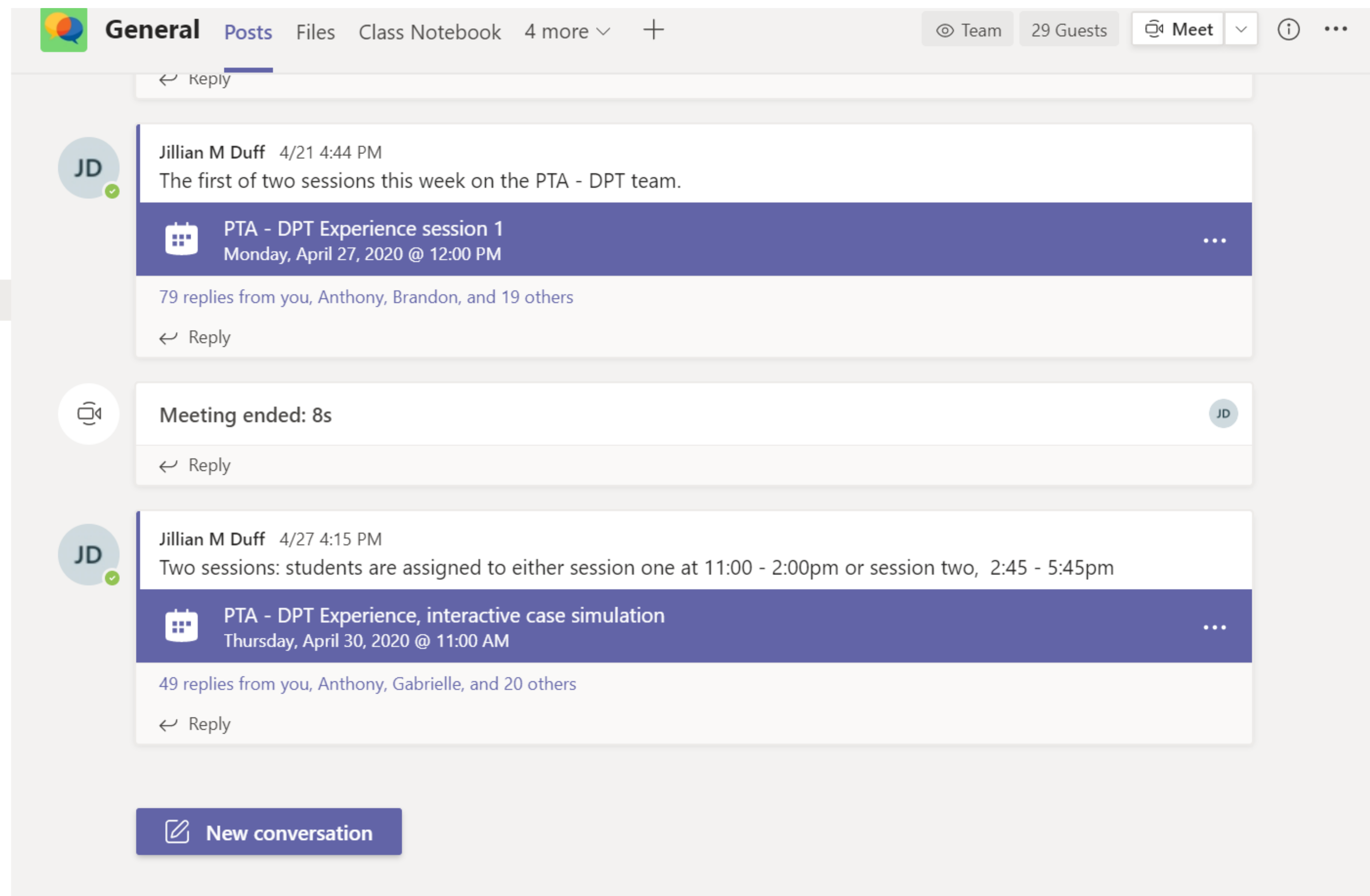
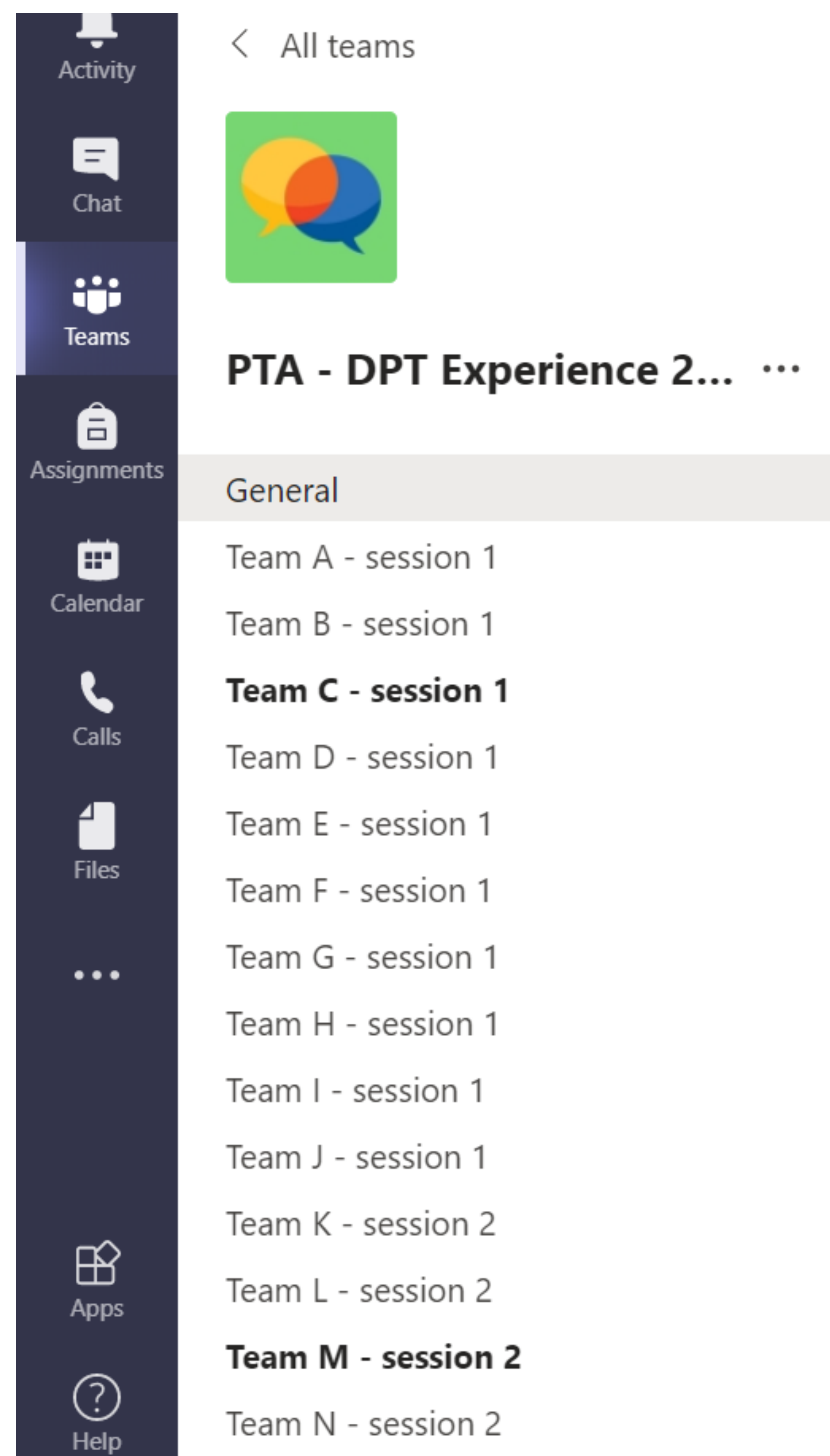
The ICCAS was developed by: MacDonald, C., Archibald, D., Trumpower, D., Casimiro, L., Cragg, B., & Jelly, W. (2010). Designing and operationalizing a toolkit of bilingual interprofessional education assessment instruments. *Journal of Research in Interprofessional Practice and Education*, 1(3). Revised item scales and the addition of item #21 were made during a replication validation study by Schmitz, C.C., Radosevich, D.M., Jardine, P.J., MacDonald, C.J., Trumpower, D. & Archibald, D. (2017, *Journal of Interprofessional Care*).

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- **Microsoft Teams**



- 1 Team composed of all faculty & students
- General Channel for large group lecture, instruction, orientation and debriefing
- 20 Sub channels/teams for small working groups of 3 or 4 students (DPT : PTA ratio = 2:1 or 2:2) plus 1 faculty

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- **PTA - DPT Experience: 10 day time frame**
- Students received link to complete PT Roles Survey (Baseline)
- Students completed the PT Roles Survey prior to Day 1 of instruction.
- **Day 1:** Remote synchronous instruction session for all students. (4 hrs)
- **Day 4:** Remote virtual interactive simulation experience day. (3 hrs)
 - Students pre-assigned to a small working group with DPT:PTA ratio 2:1 or 2:2.
 - Groups assigned to attend one of two 3 hour sessions (morning or afternoon).
 - 10 faculty each assigned to facilitate 1 morning and 1 afternoon student group.
 - Organizing faculty assigned as “float” for the day

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- **DAY 1: Monday**
- All students received 4 hours of synchronous online instruction composed of 2 distinct sessions.
 - **Session 1:** PTA faculty lead
Instruction on the role of the PTA and the New Jersey PT Practice Act
 - **Session 2:** DPT faculty lead
Instruction, training and practice on the use of the SBAR Tool (Situation – Background-Assessment-Recommendation Tool)
AND
Orientation to the EHRGo, electronic health records platform

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- **DAY 2 - 3: Tuesday - Wednesday**
- All students received notification of their small working groups (groups A – T), PTA – DPT team partner and EHRgo patient case assignment
- DPT students received links to access their assigned EHRGo patient case and instructions to prepare a treatment / intervention plan for their “patient”.

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- **DAY 4: Thursday** (3 hour virtual simulation event)
- **Students were required to:**
 - Plan their PT examination strategy and/or PT intervention.
 - Appropriately delegate a patient (DPT).
 - Collaborate to manage an unexpected patient problem.
 - Effectively communicate as an interprofessional team member with patients and other health care professionals.
 - Use the SBAR tool to organize and streamline their communication.

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- **DAYS 5 - 8:**
- **Students were required to complete and submit:**
 - A summative reflection assignment
 - The post-experience PTA roles survey
 - The ICCAS

RESULTS



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- **PTA Roles Survey:**
- Pre - Post Experience scores were analyzed using 2 tailed paired and independent t – tests to detect significant differences in correct response rates within and between the different cohorts ($p < .05$).
- Survey Response Rates:
 - Pre – experience survey = 100% of all students ($n = 64$)
 - Post – experience survey = 80% of all students ($n = 51$)
 - 39 of 39 DPT students (100%)
 - 12 of 25 PTA students (48%)

RESULTS



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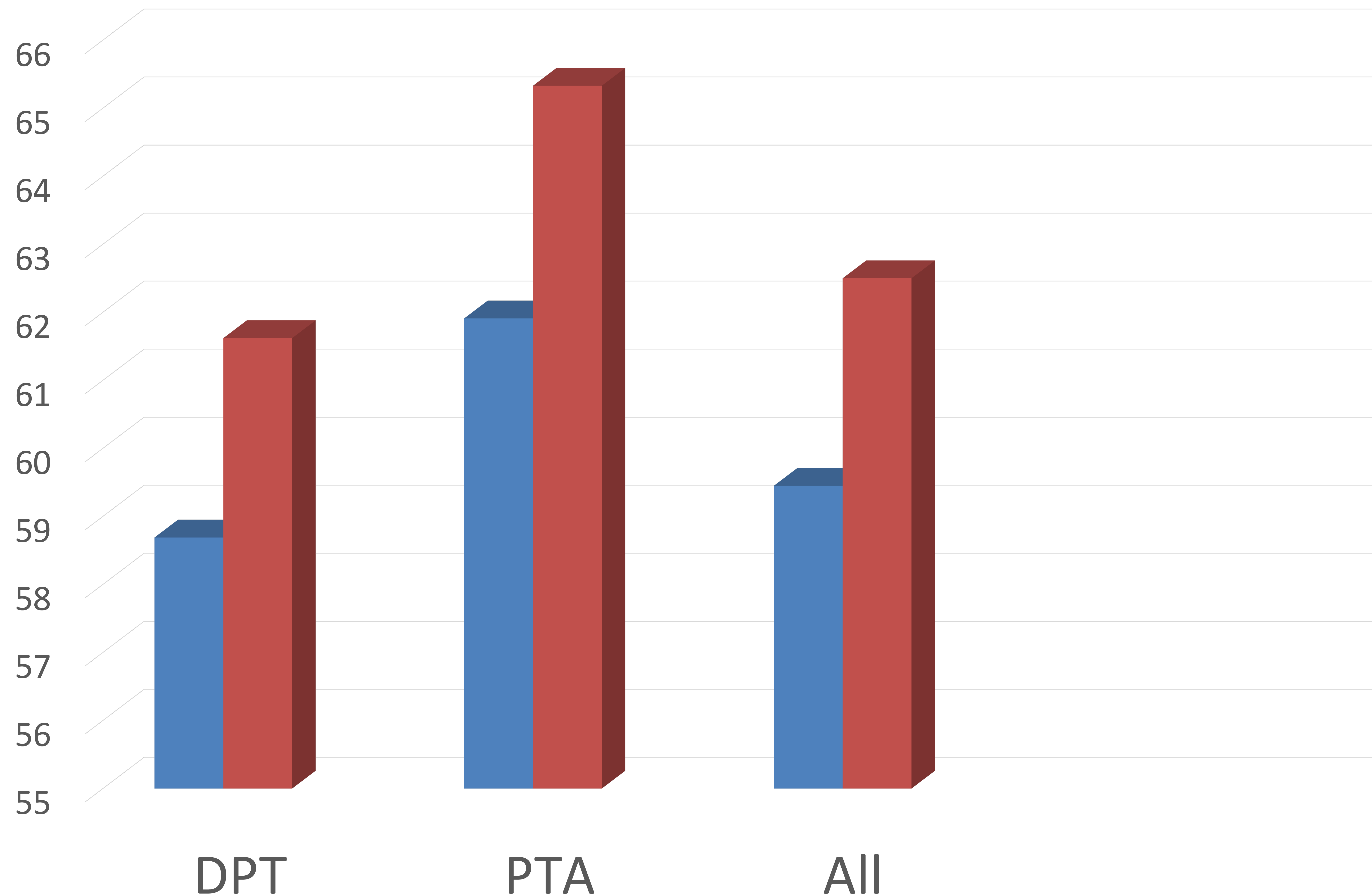
- PTA Roles Survey: Pre – Post Score
- Mean number of correct responses (max = 81)

	DPT Students	PTA Students	All Students
Pre – test mean	58.69	61.91	59.45
Post – test mean	61.62	65.33	62.5
Level of Significance	t = 3.18, p = .003	t = 3.46, p = .005	t = 4.13, p = .001

	DPT Students	PTA Students	Significance
Pre – test mean	58.69	61.91	No
Post – test mean	61.62	65.33	t = 2.57, p = .013

RESULTS

- Pre – Post PTA Roles Scores (mean)



RESULTS



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- **ICCAS:**
- Likert type ordinal data was analyzed using non- parametric tests
- 1 directional Wilcoxon Signed Rank Test for significance

- **Response Rates:**
- 51 students (80% of all students)
- 39 of 39 DPT students (100%)
- 12 of 25 PTA students (48%)

RESULTS



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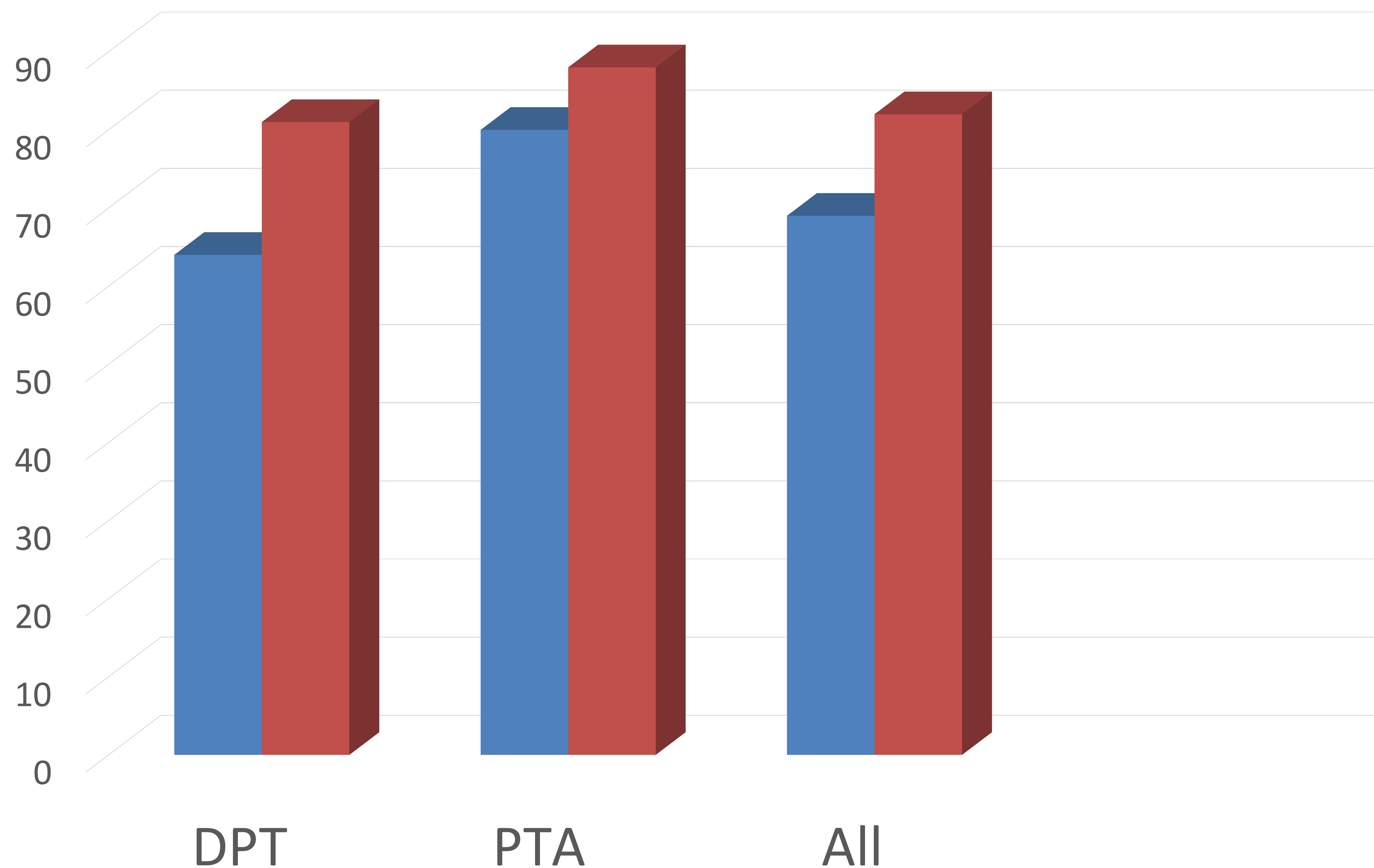
- ICCAS Data: Pre – Post Score
- Self Rated Ability, Median (max 100)

	DPT Students	PTA Students	All Students
Pre – experience	64	80	69
Post – experience	81	88	82
Level of significance			Z = 5.78, alpha = .05

	DPT Students	PTA Students	All Students
% with increased rating	92%	67%	86%
% with unchanged rating	8%	33%	14%

RESULTS

- Pre – post experience ability ratings (median)



DISCUSSION & CONCLUSION



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- Knowledge of the Role of the PTA:
- Statistically significant improvement in scores reflecting an increased student knowledge of the PT – PTA team.
- Average post experience scores indicate greater gains in PTA student knowledge compared to DPT students.

DISCUSSION & CONCLUSION



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- Self reported ability to collaborate in IP Team:
- Ability ratings were significantly increased across all students.
- DPT students showed greatest pre – post experience gains
- PTA students scored higher on the attainment scale for both pre and post experience ratings.

DISCUSSION & CONCLUSION



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- Positive impact on knowledge of the role of the PTA in the Team
AND
- gains in self rated ability to communicate and collaborate as a member of an IP Team.

- Differences between DPT and PTA results may be due to:
 - educational & clinical experience levels of 1st year DPT versus the 2nd year PTA cohort
 - 48% of PTA students who completed the post experience PT Roles Survey and the ICCAS may be inherently different to 52% who did not.

DISCUSSION & CONCLUSION



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- The study contributes evidence towards best practices for PT - PTA intra-professional education.
- Innovative instructional design features including a synchronous online videoconferencing platform and case-based simulations using EMRs that mirror contemporary practice.
- Results indicate that DPT and PTA programs can effectively and efficiently integrate positive learning experiences using interactive remote telecommunication to facilitate student competency in interprofessional collaboration (IPC)
- The use of interactive videoconferencing and electronic case-based learning platforms provide a more economic alternative to in person simulation events that require specialized staff and facilities.

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