



GEM 2024 Report





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Executive Summary

David Rusaw, Chair of the ISPO GEM2024 Subcommittee.



ISPO initiates Global Educators Meetings (GEMs) to foster discussion on the needs and strategies for the future of P&O education, and to encourage and facilitate collaboration between P&O education programmes and pathways. The meetings take place every two years and provide P&O education programmes and pathways with the opportunity to showcase their activities; and create an environment to build on existing professional relationships and develop new ones.

The fourth ISPO Global Educators Meeting (GEM 2024) took place in October 2024, hosted by Baylor College of Medicine in Houston, Texas (USA).

GEM 2024: Innovate. Collaborate. Educate.

This theme and the programme were developed collaboratively using the many responses of the GEM Educators' Survey that was circulated via ISPO.

The theme provided a fantastic platform for global educators to explore and contribute to developing prosthetics and orthotics education.

Approximately 120 individuals from over 20 countries registered for GEM 2024.

Participants included programme management, educators, administrators, accrediting bodies plus representatives from international and non-governmental organisations.

The programme covered a wide range of topics and included keynote addresses, on each of the 3 days, from influential persons involved in P&O education.

A new innovation in GEM 2024 was the introduction of ISPO Education Accreditation Auditor Training as a 4th day in the schedule for a limited number of participants.

GEM 2024 was deemed successful based on the positive feedback from participants. However, the outcome of on-going activities will define the full impact of the meeting. What is certain is that those involved in P&O education globally came together in another historic meeting to discuss matters that are important to them, their students and the profession at large.

I would like to take this opportunity to thank the ISPO Executive Board and sponsors for their support for GEM 2024. In addition, all members of the GEM Subcommittee and LOC for their unwavering support for this event.



Introduction, Background, ISPO Vision/Mission and GEM Mission Statements

Background

Previously, three GEMs had taken place successfully – GEM 2014 in Japan; GEM 2018 in Germany and GEM 2022 (a virtual event) - developing a new ISPO activity and bringing kudos to the organization. There was increased interest to host GEM 2022, with 7 bids received from across the globe. A clear and transparent process was undertaken to select the winning bid, and SSPO, Bangkok, Thailand was confirmed as host for the event. However, the global pandemic created travel restrictions which led to the decision to hold GEM 2022 virtually.

The International Society for Prosthetics and Orthotics (ISPO)'s Vision Statement

A world where all people have equal opportunity for full participation in society.

ISPO's Mission Statement

To improve the quality of life for persons who may benefit from the rehabilitation practice of prosthetic, orthotic, mobility and assistive technology by:

- Promoting multidisciplinary practice
- Facilitating professional education to improve quality care
- Promoting research and evidence-based practice
- Facilitating innovative and appropriate technology
- Fostering international collaboration and consensus
- Facilitating knowledge exchange.

For more than 50 years, ISPO has, primarily through its Member Societies, provided an effective platform for exchanging knowledge and communicating on all aspects of the science, practice and education associated with the provision of prosthetics and orthotics care, rehabilitation engineering and related areas.

The Society has more than 70 national member societies around the globe.

GEM Mission Statement

The Global Educators Meeting (GEM) is an international collaboration of those involved in Prosthetics and Orthotics (P&O) Education for the purpose of on-going exchange, professional development and supportive learning.

GEM 2024 – Baylor College of Medicine, Houston, Texas



Baylor College of Medicine is a health sciences university located in Houston, Texas. It was founded as Baylor University College of Medicine in 1903 in Dallas, Texas and became one of the founding institutions in the world-renowned Texas Medical Center in 1943.

The college consists of four schools: the School of Medicine, the Graduate School of Biomedical Sciences, the School of Health Professions, and the National School of Tropical Medicine.

The Orthotics and Prosthetics Programme in the School of Health Professions matriculated its first cohort of students in 2013. The programme can now enrol up to 26 students a year in their master's degree program. Students completing the programme complete local, national and international clinical rotations.

Participants

116 participants registered for GEM 2024 from more than 20 countries around the world, including:

The Americas

Canada

Mexico

USA

Europe

Germany

The Netherlands

Poland

Sweden

Ukraine

United Kingdom

United Kingdom

Australia

Asia

Bangladesh

India

Indonesia

Japan

Sri Lanka

Thailand

Middle East

Egypt

Israel

Africa

Kenya

Tanzania

Togo

Acknowledgment of Sponsors

The ISPO Education Committee, GEM 2024 Subcommittee and Local Organising Committee wish to acknowledge the support of sponsors to the prosthetics and orthotics industry globally, and especially prosthetics and orthotics education. Their input to GEM 2024 was invaluable and key to the success of the event.

The Gold Sponsors: Ottobock USA; Ossur USA; Hanger USA; Alps South USA.

The Silver Sponsors: American Board for Certification (ABC) USA; National Board on Orthotic and Prosthetic Education (NCOPE) USA; Becker Orthopedic USA; Human Study e.v. Germany OPIE Software USA; Leonard Industries USA.

The Bronze Sponsors - Boundless Biomechanical Bracing Inc. CANADA; ProsthetiKa USA; Spinal Technology, USA.



Sponsor Benefits	Diamond € 10,000	Gold € 5,000	Silver €2,500	Bronze € 1,000
Logo and Name on GEM Website and Slide Template	✓	✓	✓	✓
Logo and Name on Promotional Materials	✓	✓	✓	✓
Social Media Recognition	✓	✓	✓	
Complimentary Registration	6	4	2	1
Complimentary Exhibition Tables	✓	✓		
Your Material in Attendee Bags	✓			

GEM 2024 Keynote Speakers



Teri Turner, MD, MPH, MEd is a tenured Professor of Pediatrics at Baylor College of Medicine, where she is the Assistant Dean of Graduate Medical Education. She serves as the Vice Chair of Educational Affairs and the Martin I Lorin Endowed Chair in Medical Education.

Dr. Turner founded and previously directed the Center for Research, Innovation, and Scholarship in Medical Education for the Department of Pediatrics and completed a Master's Degree in Education in 2004. She is recognized as a national and international leader in medical education. She is the first author of the Clinician-Educator's Handbook, designed to aid clinicians in their day-to-day teaching duties and has published more than 60 articles over the past 10 years related to medical education and has conducted numerous seminars, workshops and peer mentoring sessions on a breadth of educational topics in the United States and abroad.

Dr. Turner is a teacher who is "in the trenches" and has won numerous awards for her teaching skills, curricula and program leadership including the American Academy of Pediatrics Education Award. At her core, she is fervent about growth mindset and setting learners up to succeed and has been on the leading edge of leveraging these principles in the clinical learning environment and studying their impact.



Bryan Malas, MHPE, CO Bryan Malas is the current director of the Department of Orthotics/Prosthetics Department and Moria Tobin Wickes Orthotics Program at Ann and Robert H. Lurie Children's Hospital of Chicago. He is also an Associate Professor at Northwestern University's Feinberg School of Medicine.

He received his orthotics training at Northwestern University and obtained his Master's in Health Profession Education from the University of Illinois Chicago. Before his current position, he was the Director of Orthotic Education at Northwestern University's Feinberg School of Medicine.

Bryan has held various leadership positions including past president of the American Academy of Orthotists and Prosthetists (AAOP) Midwest Chapter. He has also served as the chair of the National Commission on Orthotic and Prosthetic Education (NCOPE), the ISPO Education Committee, and the CPD Committee. He has previously served on the Executive Board of ISPO and currently holds the role of task officer for ISPO.

Additional Activities

ISPO Education Accreditation Auditor Training

As part of GEM 2024, Baylor College of Medicine hosted ISPO Education Auditor Training.

The Auditor Training demonstrated ISPO education's commitment to inclusion and diversity. Twelve (12) individuals (6 men and 6 women) successfully completed the Auditor Training:

- Ian Adam (United Kingdom)
- Helen Cochrane (Canada)
- Amr Gharib (Egypt)
- Sirintip Kaewtip (Thailand)
- Anarème Kpandressi (Togo)
- Tereza Lilingova (Poland)
- Manunchaya Samala Thailand)
- Nicolas Muñoz (Spain)
- Christian Schlierf (Germany)
- Mary Scott (United Kingdom)
- Joshua Utay (USA)
- Stephney Weerasinghe (Sri Lanka)

This training used a Flipped Classroom methodology. With learning provided to participants in advance; plus one day on-site training, including an examination.

ISPO GEM2024 Accreditation Auditor Training			
		Presentation	Presenter/s
8.30	9.00	Introduction	Mary Scott (Helen Cochrane)
9.00	10.00	ISPO Standards for P&O Education	Anareme Kpandressi
10.00	10.15	Break	
10.15	11.15	Self-Study	Stephney Weerasinghe
11.15	12.00	Lunch	
12.00	13.00	Preparation and Audit Visit	Mary Scott (Helen Cochrane)
13.00	14.00	Audit Report	Mary Scott (Helen Cochrane)
14.00	14.15	Break	
14.15	15.15	Quality System	Josh Utay
15.30	16.00	Course Examination	Josh Utay (Nicolas Munoz)
16.00	16.30	Closing Session	Mary Scott (Helen Cochrane)

Auditor Training

Friday 25.10





Educational Research Grant

Sponsors of the first grant of the Educational Research Grant included NCOPE, ABC, and Baylor College of Medicine. We wish to thank the donors, to which without their support, this grant and the effect of it on P&O education would not be possible. We look forward to receiving updates.



International Society for Prosthetics and Orthotics

9,185 followers

1mo •

GEM 2024 Education Research Fund!

Louise Puli, PhD candidate at Monash University and faculty at Human Study, has been awarded the 2024 Education Research Fund \$10,000 grant from the International Society of Prosthetics and Orthotics Global Educators Meeting! Congratulations!

[#GEM2024](#) [#Educators](#) [#PandO](#) [#Education](#) [#Baylor](#) [#Award](#) [#ISPO](#)

GEM 2024

Innovate. Collaborate. Educate.



2024 Education Research Fund Award Winner

Louise Puli



**“Explore the opinions of stakeholders
regarding competency standards for
mobility assistive products”**



**AMERICAN BOARD
OF CERTIFICATION**
ORTHOTICS • PROSTHETICS • PEDORTHICS

Thank You to our Fund Donors

GEM 2024 - Houston, Texas



Annex 1 – Pre-meeting Survey Results



Global Educators Meeting 2024 Program Planning

Position

Please indicate the position you hold within your institution

[More Details](#)

● P&O educator (junior faculty)	13
● P&O educator (senior faculty)	32
● P&O faculty (research)	7
● P&O faculty (manager/leadershi...	28
● Other	8



Country

10 respondents (14%) answered USA for this question.



ISPO Accreditation

Does your school have ISPO accreditation?

[More Details](#)

Insights

● No ISPO accreditation	19
● Prosthetist/Orthotist accreditati...	47
● Associate Prosthetist/Orthotist a...	4
● Prosthetic/Orthotic Technician a...	0



Global Educators Meeting 2024

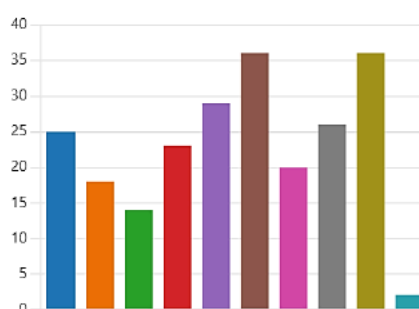
Program Planning

Teaching Methods

Below is a list of teaching methods and models commonly used in higher education. Please indicate up to 3 topics that you would like to see included in the program content for GEM 2024.

[More Details](#)

Distance learning/blended learn...	25
E-learning/online learning	18
Flexible learning	14
Collaborative learning	23
Design thinking in health profes...	29
Enquiry based learning, proble...	36
Flipped classrooms (eg. instructi...	20
Interprofessional education	26
Patient simulation in health prof...	36
Other	2

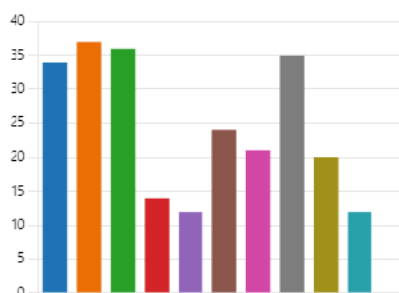


Teaching Tasks

Below is a list of tasks that are common in higher education settings. Please indicate up to 3 topics that you would like to see included in the program content for GEM 2024.

[More Details](#)

Developing curriculum	34
Developing assessment instrum...	37
Developing Objective Structure...	36
Developing written examination...	14
Evaluating exam questions	12
Formative assessment, feedback...	24
Clinical experience opportunitie...	21
Collaboration with other P&O s...	35
Facilitating student and staff exc...	20
Teaching research skills in under...	12
Other	0





Global Educators Meeting 2024

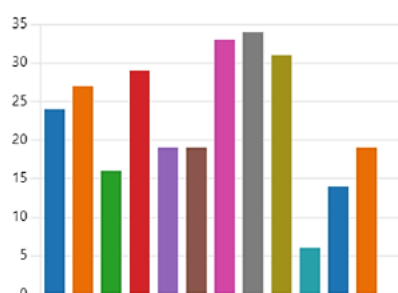
Program Planning

Management and Leadership

Below is a list of management and leadership issues relevant to P&O. Please indicate up to 4 topics that you would like to see included in the program content for GEM 2024.

[More Details](#)

ISPO accreditation, preparation, ...	24
Empowering staff/mentoring	27
Performance management	16
Management and leadership	29
Student admission and applicati...	19
Financial management issues/Fu...	19
Course and program evaluations	33
Benchmarking (measuring and c...	34
Sustainability	31
Equal opportunities	6
Accessibility	14
Student well-being	19
Other	0

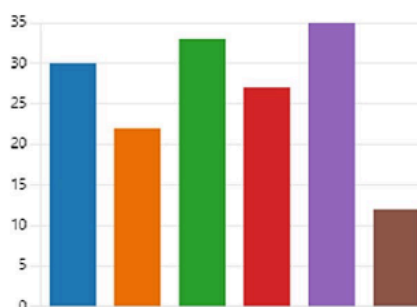


ISPO Accreditation Process

Would you be interested in attending any of the following sessions about the ISPO education accreditation process? Select all that apply.

[More Details](#)

A general overview of the ISPO ...	30
How to complete the self-study	22
Acceptable formats for terminal ...	33
The procedure of an ISPO audit ...	27
Requirements and training to be...	35
None of the above	12





Global Educators Meeting 2024

Program Planning

Wheelchair Training

Are you interested in participating in a Wheelchair Service Hybrid Training Series as part of the GEM 2024? The training will be jointly organized by ISPO-International and The International Society for Wheelchair Professionals (ISWP). It consists of both virtual and hands-on training. The virtual training will occur prior to GEM 2024, while the hands-on portion will take at Baylor College of Medicine on October 25, 2024 (the day after the meeting ends).

[More Details](#)



GEM Attendance and Impact

If you attended any of the previous GEMs in Kobe (2014), Göttingen (2018), or virtually (2022), please indicate if there were sessions that have had an impact on your daily work.

[More Details](#)



Participation and Preference

How would you prefer to participate in the GEM 2024?

[More Details](#)





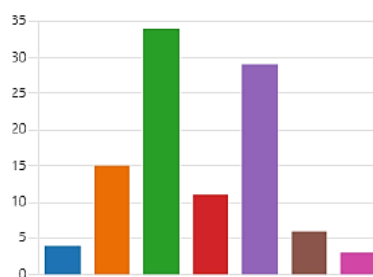
Global Educators Meeting 2024 *Program Planning*

Representatives for GEM 2024

Please indicate if your institution plans to send representatives to the GEM 2024 and, if so, who you plan to send

[More Details](#)

Administrative staff	4
Management staff	15
Senior teaching staff	34
Junior teaching staff	11
Not sure	29
Not planning to send represent...	6
Other	3





Annex 2 – Post-meeting Survey Results

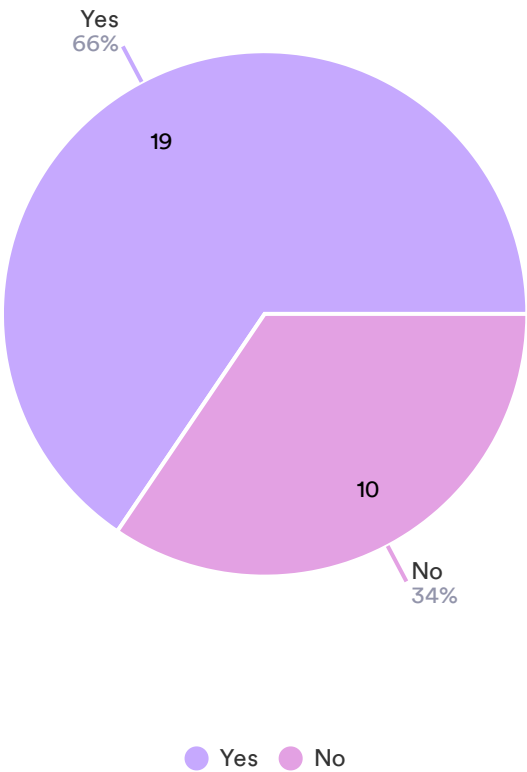
Job Tittle

29 Responses- 1 Empty

Data	Responses
Assistant Professor	3
Educator	2
Lecturer	2
CPO	2
Executive Director	2
Chairperson & Lead Orthotist Prosthetist	1
P&O Educator	1
Professor	1
Other entries	15

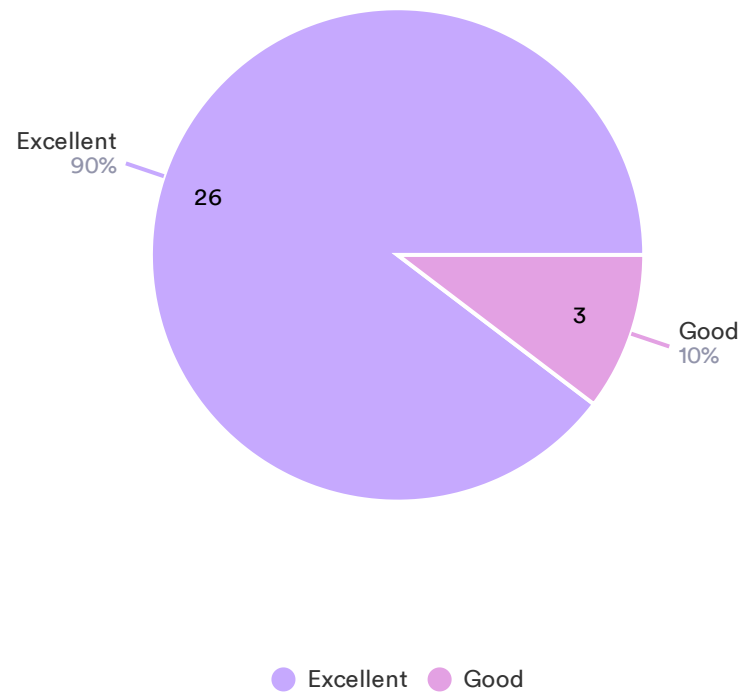
Are you an ISPO Member?

29 Responses- 1 Empty



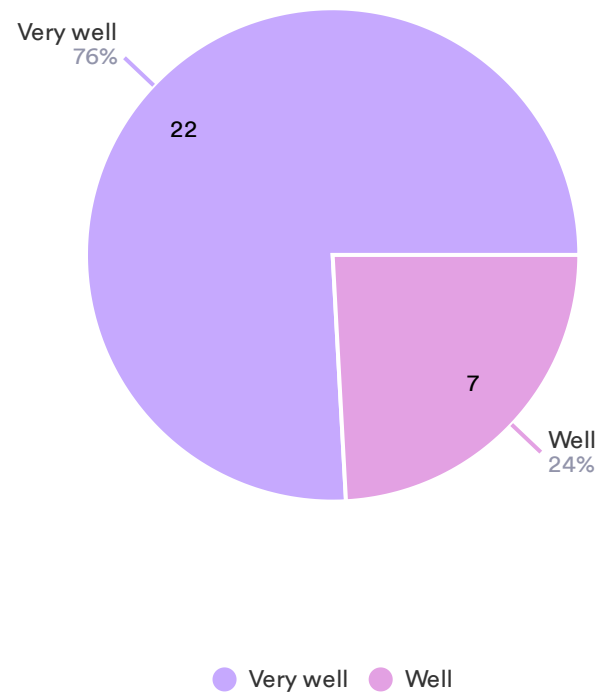
1. Overall Experience: How would you rate your overall experience at the Global Educators Meeting?

29 Responses- 1 Empty



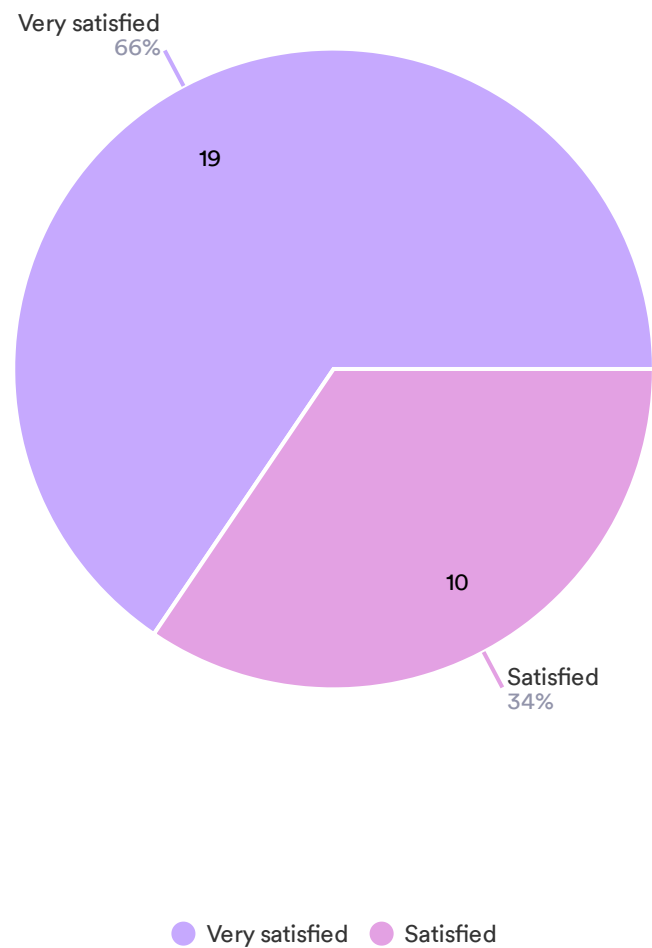
2. Theme Relevance: How well do you think the theme "Innovate. Collaborate. Educate" was reflected throughout the sessions?

29 Responses- 1 Empty



3. Session Content: How satisfied were you with the content of the presentations and workshops?

29 Responses- 1 Empty



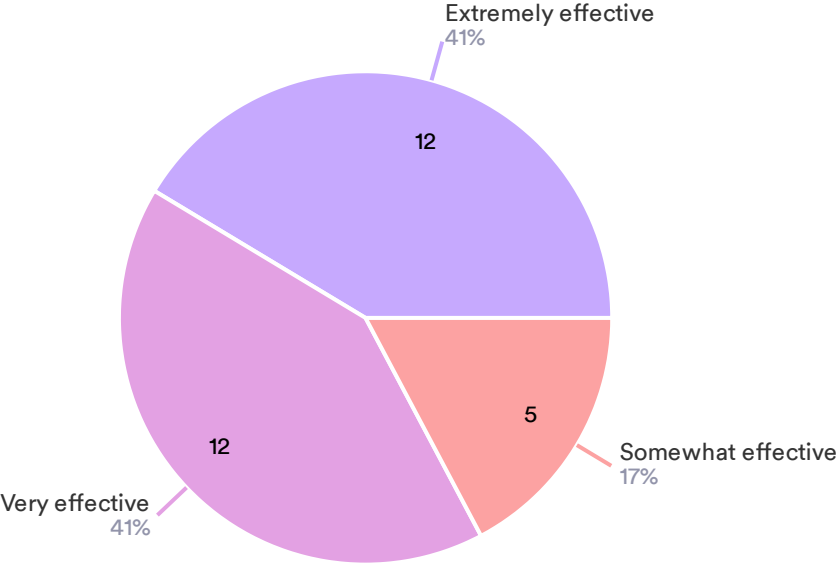
3.1. What was the most impactful session or presentation for you, and why?

26 Responses- 4 Empty

Data	Responses
Lectures on Gamification	1
Research possibilities in USA due to big sample sizes. Impressive data.	1
For me the innovative ideas about implementing technology in the education	1
Revolutionizing O&P education perspectives in integrating large language models and artificial intelligence into P&O education.	1
I really enjoyed the key note about scholarship.	1
The inspiring presentation about scholarship. I still don't know how I'm going to do this but I should do it. So work in progress...	1
The collection of ISPO presentations on preparing for the self-study and the site visits. The informative yet informal nature of the format made for spontaneous collaboration and ability to address all questions as they arose by anyone in attendance. Well done!	1
I learned something from nearly every session. The key note session from the first day definitely inspired the value of collecting good data and publishing results associated with residency program development. The chance to hear what educators were focused on in their programs was very helpful.	1
Other entries	18

4. Innovation Focus: How effectively did the event introduce innovative ideas in education?

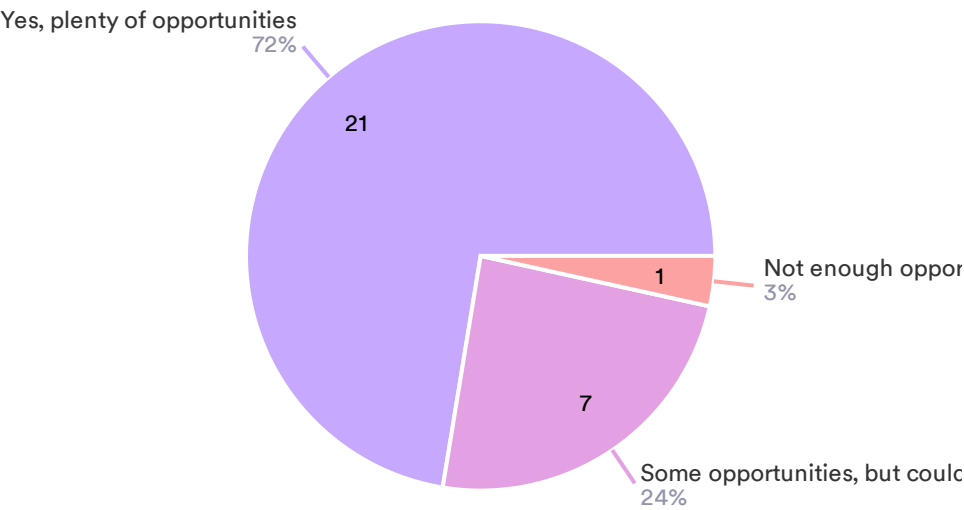
29 Responses- 1 Empty



Extremely effective Very effective Somewhat effective

5. Collaboration Opportunities: Did you feel there were enough opportunities to collaborate and network with other educators?

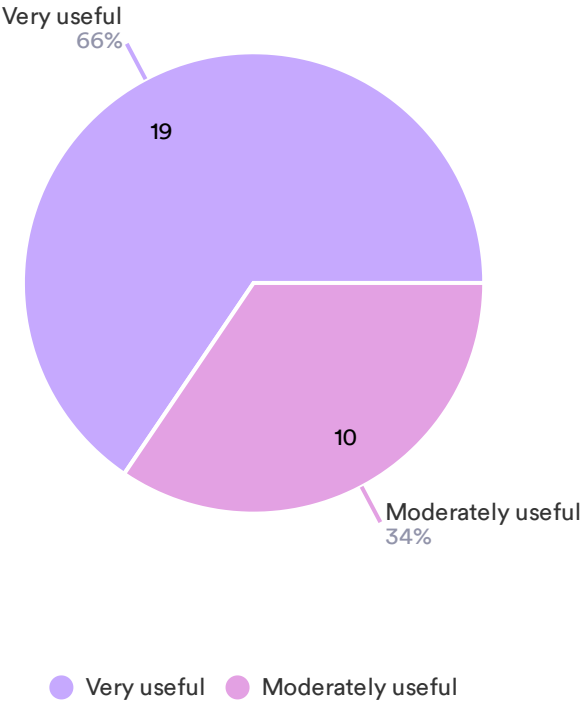
29 Responses- 1 Empty



Yes, plenty of opportunities Some opportunities, but could have been more Not enough opportunities

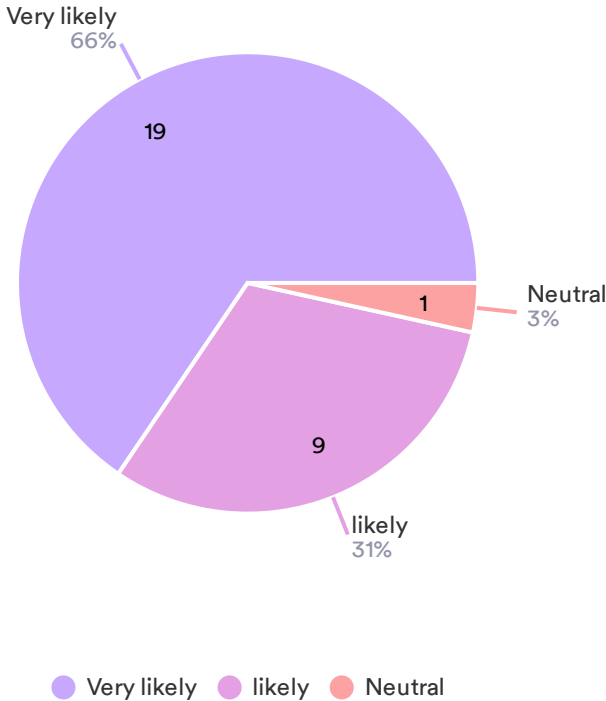
6. Educational Insights: How useful were the educational strategies or tools presented at GEM2024 for your professional development?

29 Responses- 1 Empty



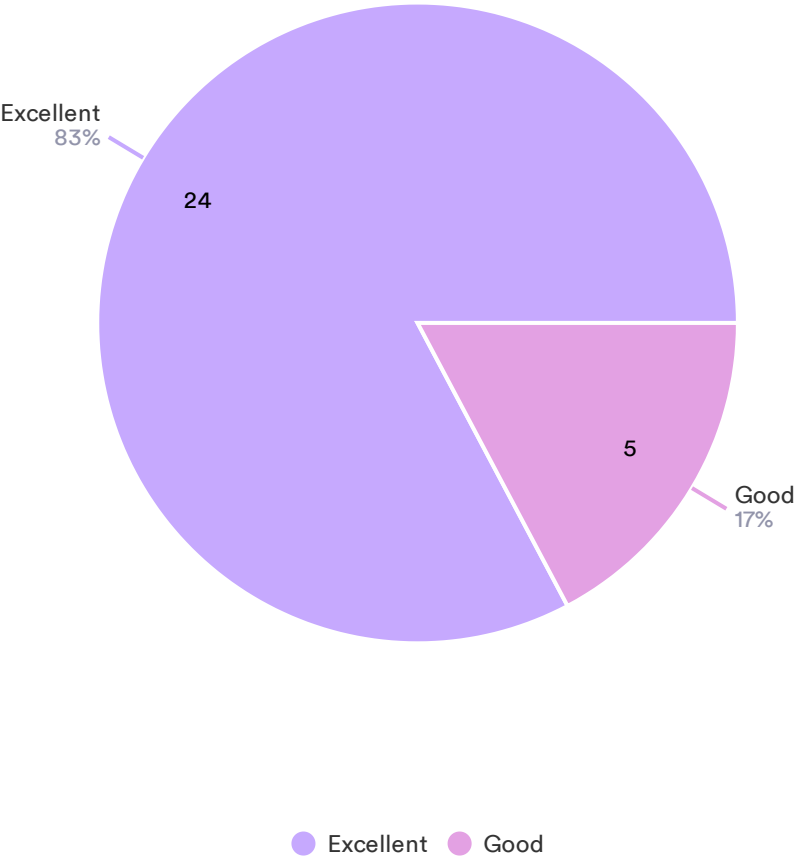
7. Implementation: How likely are you to implement new practices, ideas, or tools you learned from the event in your own educational setting?

29 Responses- 1 Empty



8. Event Organization: How would you rate the organization of the event (e.g., communication, scheduling, logistics)?

29 Responses- 1 Empty



9. Future Themes: What topics or themes would you like to see covered in future GEMs?

20 Responses- 10 Empty

Data	Responses
"My future expectation is to see how AI can contribute in a meaningful and ethical way to advancing education in the orthotic and prosthetic field."	1
Research. Evidence based data.	1
The topics and themes where very professional oriented. At least in the lectures I was a part of, it was not much about the students, while excising as an education, students is the core business. I have no good suggestions unfortunately how to implement it. But I am curious how other schools attract their students. It was only a small part of a lecture	1
Engineering themes	1
Collaboration is always a great one! Maybe something about the ways we are moving forward as a profession?	1
themes were great and usefull for the next meeting(s)	1
Educating for the future: How best can we prepare professionals who are learning today to practice independently beginning in approximately 3-5 years? Instead of throwing the "ball" to them where practice is today, how do we prepare them to practice where the profession will be in 3-5 years?	1
Sustainability: Could cover anything from environmental impact to sustaining the profession.	1

10. Suggestions for Improvement: What can we improve for future Global Educators Meetings?

21 Responses- 9 Empty

Data	Responses
To make the meeting longer and have more speakers	1
More time for discussions	1
Everything was great, If you want to come to Mexico for future Meetings we will be happy to receive you Regards	1
Time to change between tasks Maybe FP being 12-15 mins. Everyone seemed to go longer than 10 Time for discussion- esp since the talks ran long Q&A was cut short- maybe literal break out rooms or tables where people can discuss ideas and topics?	1
Some more workshops and discussion. Maybe because of the setting there was a splitting between American/Canadian members and 'others' (there weren't as many 'others' as last time. I would have liked more active activities (like workshops) in which we could really collaborate, not only listening to presentations.	1
As was the plan this past week, having two or three tracks available at any one time (aside from keynote talks, etc.) allows attendees to focus on their preferred topics while keeping individual classes to an optimal size of around 50 attendees or less. Also, hosting parallel and/or auxiliary trainings (such as auditor or seating systems training on the day after) remains an excellent idea.	1
Lunch break needed to be a little longer. Some topics may benefit from small group discussion.	1
Maybe location in Europe is easier to get to for participants	1
Other entries	13

11. Additional Comments: Is there anything else you would like to share about your experience at GEM2024?

19 Responses- 11 Empty

Data	Responses
None	1
People expected more about Event Dinner	1
It was a very good experience. There was a lot of content and everything was taken care of :) verry happy with the good food and inspiring people and lectures	1
Nice and kind people from all over the world Thank you	1
Overall- loved it all! Such a great conference! All that hard work and effort paid off in my opinion! Always room for improvement in anything we do, but loved the vibe and participation throughout. Great group! Wish we could meet more often!	1
This was simply the best meeting of my entire career! Educators are the best kinds of people to host and attend a meeting. Keeping the content interactive (as much as possible) is the key to attendees feeling connected to the speakers and each other, as well as squeezing the most out of every minute there. I think we could fill 3 full days next time. Nicely done! Thank you!!!!!!	1
I found this extremely valuable as a residency director. There are several techniques presented in free papers that I want to bring into our residency program.	1
Thanks everyone helping organising the meeting	1
Other entries	11

Annex 3 – GEM 2024 Programme



Annex 3 – GEM 2024 Programme

Day 1 - Tuesday October 22, 2024 Morning		
Time	Sessions (Room and Moderator)	
8:00 – 8:30	Registration (Rayzor Lounge)	
8:30 – 9:00	Opening Ceremony (Cullen Auditorium)	
9:00 – 10:00	Keynote Speech - Dr. Terri Turner (Cullen Auditorium)	
10:00 – 10:30	Coffee Break (Rayzor Lounge)	
10:30 – 11:30	Free Paper Session (201A; moderated by A. Rhett)	Free Paper Session (301A; moderated by A. Mullen)
	10:30 - 10:40 FP #30: The Most Urgent Challenges to Sustainability of P&O Education Programs (S. Spaulding)	10:30 - 10:40 FP #16: Navigating the Virtual World: Maximizing Virtual Site Visit Effectiveness for Future Success (M. Thorpe)
	10:40 - 10:50 FP #42: Embracing PO Quality Education and Innovative Education Strategies in Conflict Areas: Maximizing Core Competency Training through Blended Education (S. Kheng)	10:40 - 10:50 FP #10: The use of Progressive Client Narratives for clinical reasoning skills of undergraduate prosthetic and orthotic students (A. Holden)
	10:50 – 10:55 Discussion and Q&A	10:50 – 11:00 FP #32: Human Study's Innovative Approach Empowering Accessibility in O&P Education (L. Alhallaak - recorded presentation)
	10:55 – 11:05 FP #17: A process to improve the application of hands skills post short-term training in less resourced countries (S. Sinha)	11:00 – 11:05 Discussion and Q&A
	11:05 – 11:15 FP #18: Crafting Competence: Objectivity in Hand Skills Education (J. Sherman)	11:05 – 11:15 FP #25: Enhancing University Students' Engagement in Studying Assistive Technology by Case-based Active Learning: A Pilot Study in Hong Kong (C. Z. Ma)
11:30 – 12:00	11:15 – 11:25 FP #9: Design and fabrication of artificial amputated limbs for prosthetics education (O. Diaz-Hernandez)	11:15 – 11:25 FP #27: Impact of the local P&O education program on P&O services in Bangladesh (M. J. Hossein)
	11:25 – 11:30 Discussion and Q&A	11:25 – 11:30 Discussion and Q&A
Lunch (Rayzor Lounge)		



Day 1 - Tuesday October 22, 2024 Afternoon		
12:00 – 1:00	Gold Sponsor Presentation: Alps South (201A)	
1:00 – 2:00	<p>Free Paper Session (201A; moderated by M. Kaewtip) 1:00 – 1:10 FP #24: Enhancing Student Learning and Engagement: Evaluating the Flipped Classroom Experience at Northwestern University's Prosthetic-Orthotic Center (M. Thorpe)</p> <p>1:10 – 1:20 FP #4: Development of an O&P Ethics Course (F. Schultea)</p> <p>1:20 – 1:30 Discussion and Q&A</p> <p>1:30 – 1:40 FP #21: Developing an educational assessment tool for AFO impression taking: Delphi study integrating the EPA framework (A. McGinnis)</p> <p>1:40 – 1:50 FP #39: Development of Real-time Feedback Stump Model for Casting Practice Simulation (M. Samala)</p> <p>1:50 – 2:00 Discussion and Q&A</p>	<p>Free Paper Session (301A; moderated by J. Utay) 1:00 – 1:10 FP #11: Learning Assessment of Mechanical Concepts: Establishing Content Validity (S. Spaulding)</p> <p>1:10 – 1:20 FP #29: Designing instructional materials to teach skin assessment in orthotics and prosthetics on people with Black and Brown skin (S. Spaulding)</p> <p>1:20 – 1:30 Discussion and Q&A</p> <p>1:30 – 1:40 FP #8: The impact of academic perspectives of disability on the success of students with disabilities. (A. Holden)</p> <p>1:40 – 1:50 FP #15: In pursuit of an inclusive classroom: reflections and directions (A. Holden)</p> <p>1:50 – 2:00 Discussion and Q&A</p>
2:00 – 2:30	Coffee Break (Rayzor Lounge) + Silver Sponsor Presentation: Leonard Industries (Cullen Auditorium)	
2:30 – 4:30	<p>Symposia Session (201A; moderated by C. Schlierf)</p> <p>2:30 – 3:15 S #8: The Benefits of Partnerships Between Industry and Education Institutions in P&O (H. Cochrane)</p> <p>3:15 – 3:30 Discussion and Q&A</p> <p>3:30 – 4:15 S #6: NUPOC's Journey of Alternative Assessment (J. Brinkmann)</p> <p>4:15 – 4:30 Discussion and Q&A</p>	<p>Free Paper + Symposia Session (301A; moderated by S. Kenworthy) 2:30 – 2:40 FP #41: Gamification in the O&P Classroom (N. Jirapongpathai)</p> <p>2:40 – 3:25 S #5: Leveling Up in O&P Education: The Power of Gamification in Active Learning (A. Lawrence)</p> <p>3:25 – 3:35 Discussion and Q&A</p> <p>3:35 – 4:20 S #4: Low-Tech, High-Impact Teaching Tools to Enhance Foundational O&P principles (S. Kenworthy)</p> <p>4:20 – 4:30 Discussion and Q&A</p>
5:00	Welcome Reception (Rayzor Lounge)	



Day 2 - Wednesday October 23, 2024 Morning			
Time	Sessions (Room and Moderator)		
8:30 – 10:30	<p>Symposia Session (Cullen Auditorium; moderated by A. Mullen)</p> <p>8:30 – 9:15 S #2: The Career Clinician: How Educators and Industry Can Work to Improve Retention and Talent (A. Mullen)</p> <p>9:15 – 9:25 Discussion and Q&A</p> <p>9:30 – 10:15 S #10: A Journey of Health and Safety Education within Prosthetic & Orthotic Programs: A Review of Current Standards, Identifying Challenges and Establishing Future Directions (A. Cuch)</p> <p>10:15 – 10:30 Discussion and Q&A</p>	<p>NCOPE's Approved Clinical Mentor (Room 201A: led by C. Robinson) Training, Part I NOTE: Pre-registration required</p>	<p>ISPO Accreditation Session (Room 301A: led by D. Rusaw & Christian Schlierf) Requirements of the ISPO Self-Study for P&O Education Accreditation</p>
10:30 – 11:10	Coffee Break (Rayzor Lounge) + Silver Sponsor Presentation from OPIE (Cullen Auditorium)		
11:10– 12:00	<p>Free Paper Session (Cullen Auditorium; moderated by M. Castille)</p> <p>11:10 – 11:20 FP #2: Designing and teaching apprenticeship qualifications in P&O in the UK (I. Adam)</p> <p>11:20 – 11:30 FP #23: Revision of national P&O educational guidelines in Norway (D. Rusaw)</p> <p>11:30 – 11:40 FP #34: IOPS Alumni Hub: A Continuation of IOPS Education (T. Lilingova)</p> <p>11:40 – 11:50 FP #28: Continuing Professional Development in P&O in Thailand: Past, Present, and Future Perspectives (T. Rakbangboon)</p> <p>11:50 – 12:00 Discussion and Q&A</p>		<p>ISPO Accreditation Session (Room 301A: (led by M. Scott) An Improved Understanding of the Requirements of ISPO for P&O Education Accreditation</p>
12.00 – 12,30	Lunch (Rayzor Lounge)		



Day 2 - Wednesday October 23, 2024 Afternoon			
Time	Sessions (Room and Moderator)		
12,30 – 1.30	Gold Sponsor Presentation: Ossur (Room 201A)		Gold Sponsor Presentation: Hanger Institute (Room 301A)
1.30 – 2.15	<p>Free Paper (Cullen Auditorium; moderated by L. Abernethy) 1:30 – 1:40 FP #37: Development of revised domains and competencies aligned with contemporary patient centric care for the NCOPE orthotist/prosthetist residency (C. Robinson)</p> <p>1:40 – 1:50 FP #20: O&P Graduates' Preparedness for Residency: Perceptions of Mentors (J. Wening)</p> <p>1:50 – 2:00 FP #35: Analysis of the residency experience in transfemoral prosthetics (D. Hull)</p> <p>2:00 – 2:15 Discussion and Q&A</p>		<p>ISPO Accreditation Session (Room 301A: led by L. Laakso & M. Scott) Current terminal competency exams models and potential new models that would meet the requirements of ISPO</p>
2.15 – 3.15	Coffee Break & Tour of O&P Lab (Rayzor Lounge)		
3.15 – 4.30	<p>Free Paper & Symposium Session (Cullen Auditorium; moderated by F. Schultea)</p> <p>3:15 – 3:25 FP #6: Expanding O&P Education to Stimulate Technological Innovation and Collaboration (J.M. Dorador-Gonzalez)</p> <p>3:25 – 3:30 Discussion and Q&A</p> <p>3:30 – 4:15 S #3: Digital Dialogues: Clinicians and Educators Collaborate for CAD/CAM Advancements (J. Sherman)</p> <p>4:15 – 4:30 4:15 – 4:30 Discussion and Q&A</p>	<p>Free Paper & Symposium Session (Room 201A; moderated by J. Utay)</p> <p>3:15 – 3:25 FP #22: Innovate, Collaborate, Educate: The Inter-professional Approach to O&P Education (L. Abernethy)</p> <p>3:25 – 3:30 Discussion and Q&A</p> <p>3:30 – 4:15 S #7: Revolutionizing O&P Education: Perspectives on Integrating Large Language Models and Artificial Intelligence Into P&O Education (M. Thorpe)</p> <p>4:15 – 4:30 Discussion and Q&A</p>	<p>ISPO Accreditation Session (Room 301A) FP #33: Developing and Evidence-based Credentialing Examination; The Story of Orthotics Prosthetics Canada (L. Laasko)</p>
4.30 – 5.00	Silver Sponsor Presentation - Becker Orthopedic (Cullen Auditorium)		
Evening	Event Dinner (BBQ)		



Day 3 - Thursday October 24, 2024		
Time	Sessions (Room and Moderator)	
8:30 – 9:15	Keynote - Bryan Malas (Cullen Auditorium)	
9:15 – 10:15	Education Research Proposals (Cullen Auditorium)	
10:15 – 10:45	Coffee Break (Rayzor Lounge) + Silver Sponsor Presentations NCOPE and ABC (Cullen Auditorium)	
10:45 – 11:25	<p>Free Paper Session (201A; moderated by J. Sherman)</p> <p>10:45 – 10:55 FP #26: Clinical Expert to Classroom Champion: Empowering the Next Generation of Educators (J. Sherman)</p> <p>10:55 – 11:05 FP #7: Mentoring educators teaching P&O in less resourced countries: A step towards developing partnerships? (B. Rau)</p> <p>11:05 – 11:15 FP #40: Would obtaining a doctorate make you a better O&P educator? One educator's doctoral journey and study results may help you decide. (J. Utay)</p> <p>11:15 – 11:25 Discussion and Q&A</p>	<p>Free Paper Session (301A; moderated by A. Mullen)</p> <p>10:45 – 10:55 FP #3: Teaching and Assessment Methods to Increase Student Engagement and Performance in an Online Course (M. Thorpe)</p> <p>10:55 – 11:05 FP #14: Evaluation of Online Learning During COVID 19 of Prosthetics Orthotics Schools in Indonesia and South-East Asia: Students and Educators Perceptions (S.A. Nazier)</p> <p>11:05 – 11:15 Exploring Competencies for Mobility Assistive Product Provision (L. Puli - recorded presentation)</p> <p>11:15 – 11:25 Discussion and Q&A</p>
11:30 – 12:30	Closing Discussion (Cullen Auditorium; moderated by the GEM Sub Committee and Local Organising Committee)	
12:30 – 1:00	Grab & Go Lunches (Rayzor Lounge)	
Afternoon	NASA Tour (Depart from Rayzor Lounge)	



Annex 4 – GEM 2024 Abstracts - Innovate, Collaborate, Educate (ICE)



ISPO Global Educators Meeting

2024 22-24 October

2024 Houston, Texas,

USA

Innovate. Collaborate. Educate

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#FP2 – Designing and Teaching Apprenticeship Qualifications in Prosthetics & Orthotics in the UK Author:

Ian Adam

Abstract

Background

Apprenticeships are a form of training individuals for a vocational job role, combining academic teaching with on-the-job training. As the apprentice is a paid member of staff, it can be a preferred pathway to becoming a qualified Prosthetics & Orthotics (P&O) professional.

Objective

In 2017, the UK P&O Trailblazer group, comprising P&O employers, created apprenticeship standards for Level 3 Prosthetic & Orthotic Technicians and Level 6 Prosthetists & Orthotists. These standards were published by the Institute for Apprenticeships and Technical Education (IfATE).

Methods

In 2020, the University of Derby was awarded the contract to supply these qualifications. At that time, I began working with the university, bringing 36 years of clinical and manufacturing experience as an Orthotic Technician. I collaborated with the university's Learning Design Team and other experts to develop the teaching content for both qualifications.

Results

The first students enrolled in these qualifications in 2022, marking the launch of the only apprenticeship qualifications for P&O in the UK. Over the course of two years, we developed the curriculum for Levels 3 and 6, transitioning it into interactive online content.

Conclusion

This presentation will outline the design and writing process for the apprenticeship teaching content and how it was transformed into an online format. I will discuss the advantages and disadvantages of teaching an online qualification, share lessons learned in developing these programs, and review feedback from students and employers. Additionally, I will explain the apprenticeship levy funding model used in England, which allows employers to access apprenticeships without incurring additional costs.

Statement of Relevance:

This presentation describes the creation and delivery of new apprenticeship qualifications for Prosthetics & Orthotics in the UK. It highlights a unique, digital method of teaching in a rapidly evolving educational landscape.

References:

1. Institute for Apprenticeships and Technical Education (IfATE), 2024. Level 3 Apprenticeship Standard for Prosthetic and Orthotic Technician. Available at: <https://www.instituteforapprenticeships.org/apprenticeship-standards/prosthetic-and-orthotic-technician-v1-1> (Accessed 28/02/2024).
2. Institute for Apprenticeships and Technical Education (IfATE), 2024. Level 6 Apprenticeship Standard for Prosthetist and Orthotist. Available at: <https://www.instituteforapprenticeships.org/apprenticeship-standards/prosthetist-and-orthotist-v1-2> (Accessed 28/02/2024)

#S3: Digital Dialogues: Clinicians and Educators Collaborate for CAD/CAM Advancements

Authors: Jeremy Sherman MS, CPO, David Wilson MPO, CPO, FAAOP, Mark Muller MS, CPO, FAAOP, Jared Howell MS, CPO, FAAOP, Nathan Schmetter MS, CPO, Dave Hughes CPO, Géza Kogler Ph.D, CO

Abstract

Background

The advent of 3D printing, pioneered by Charles Hull in the 1980s, has catalyzed transformations across various industries, including healthcare. In a recent survey (2023) of 176 O&P professionals, computer-aided design (CAD) and computer-aided manufacturing (CAM) were identified as skills expected to increase in importance over the next 10-20 years. Healthcare professions such as dentistry and orthopedics have embraced CAD/CAM advancements in both clinic and curriculum, while navigating challenges such as intellectual property issues, new business models, counterfeit devices, high dimensional tolerances, and biocompatible materials.

The improved efficiency associated with a digital workflow provides more time for patient care experiences for students in healthcare programs. The application of a digital workflow in a formal education setting may offer learners additional exposure to clinical evaluation and decision-making skills.

Objective

This panel discussion aims to bridge the gap between O&P clinicians proficient in CAD/CAM technologies and educators integrating CAD/CAM education into master's level O&P programs. Discussions will explore the perceived benefits, limitations, and future needs from both clinicians and educators.

Method

The panel will include a PowerPoint presentation, audience participation without connectivity requirements, and an interactive panel discussion with Q&A. The panelists, comprised of experts in both clinical and academic fields, will present foundational concepts, potential clinic management benefits, perceived knowledge gaps of new graduates, the cost of implementation, and sustainable industry-education partnerships.

Results

The panel will explore current solutions and best practices for integrating CAD/CAM into educational programs and clinical settings. Topics will include foundational concepts for learners, the perceived limitations of new graduates' CAD/CAM knowledge, and the challenges of integrating digital workflows in both clinical and educational environments.

Conclusion

As technological advancements permeate O&P clinics, the educational landscape must evolve to equip new clinicians to succeed. This panel discussion, focused on identifying the issues faced by both clinicians and educators, is the first step toward updating curricular and clinical standards for CAD/CAM technologies.

Statement of Relevance

Technological advancements in CAD/CAM are becoming more critical in O&P clinics. This panel discussion aims to address the challenges in education and clinical practice, fostering collaboration between educators and clinicians to improve the integration of digital workflows into both settings.

References

1. Hull C. The Birth of 3D Printing, IRI Achievement Award Address. *Research-Technology Management*. 2015;58(6):25-30.
2. Pace N, Sherman J. Perceptions of Hand Skill Importance in the Field of Orthotics and Prosthetics.
3. Reifeis PE, Kirkup ML, Willis LH, Browning WD. Introducing CAD/CAM into a predoctoral dental curriculum: a case study. *J Dent Educ*. 2014;78(10):1432-1441.
4. Sola-Guirado RR, Guerrero-Vacas G, Rodriguez-Alabanda O. Teaching CAD/CAM/CAE tools with project-based learning in virtual distance education. *Educ Inf Technol (Dordr)*. 2022;27(4):5051-5073. doi:10.1007/s10639-021-10826-3.
5. Banga HK, Kumar R, Kalra P, Belokar R. *Additive Manufacturing with Medical Applications*. First Edition. CRC Press; 2022.

#FP4: Development of an Orthotics and Prosthetics Ethics Course Author:
Fanny Schultea

Abstract

Background

Ethics and compliance are foundational requirements in the health professions, including Orthotics and Prosthetics (O&P). Whereas most professions have common language, standards, and guidelines for ethics and decision-support, O&P does not. Robust structures for teaching and training ethics and compliance across professional stages provide O&P an opportunity to drive operating environments, improve metrics of care value (quality, cost, outcomes), and support the implementation of quality standards.

Objective

To develop an educational framework and common content structure for integrated didactic, clinical, and professional training in ethics and compliance.

Methods

O&P students at Baylor College of Medicine have historically shared Ethics coursework with the medical school. In Spring of 2023, O&P faculty created a new O&P Ethics and Compliance course in collaboration with faculty from the Center of Medical Ethics and Health Policy. Additional contributors to the course included leaders in the O&P profession. The 2-credit hour, hybrid, mixed-methods course was held during O&P clinical residency. It consisted of 16 one-hour virtual sessions comprised of lectures and discussions, with discussion board assignments designed to engage with clinical leadership, preceptors, and peers. The course culminated in an 8- hour in-person seminar featuring grand rounds, group case analyses, and staged debates.

Results

The 2023 and 2024 cohorts provided qualitative feedback through course evaluations, alongside self-reported increases in their confidence levels regarding the course objectives. One resident shared: “This class was talked about a lot in clinic, and clinicians mentioned how they wish they had a course on O&P ethics when they were in school.”

Conclusions

The pilot cohorts served to refine the course design in preparation for a structured outcomes study in 2025, with plans to disseminate the adaptable course to the broader O&P community.

Statement of Relevance

This presentation is relevant to Orthotics and Prosthetics education as it outlines the development of a standardized approach to incorporate and adapt ethics education into student and resident curriculum, as well as clinical professional development and training programs.

References

1. Scher S, Kozłowska K. *Rethinking Health Care Ethics*. 2018.
2. Souza Anne D, Vina Vaswami. *Ann. Med. Surg.* 2020; 56:178-185.

#S5: Leveling Up in Orthotics and Prosthetics Education: The Power of Gamification in Active Learning Authors:

Amy Lawrence, PTA, MSPO, CPO, Mindy Thorpe, MS-IDS, CPO, Gloria Lee, MSPO, CPO, Renato Delos Reyes MS, MPO, CP

Abstract

Background

Evidenced by successful models utilized at Northwestern University Prosthetics-Orthotics Center (NUPOC) MPO program, gamification can be integrated into educational curricula through individual assignments, small groups, large gatherings, and a variety of online platforms both synchronously and asynchronously. Research indicates that knowledge is acquired through engaging learning experiences, which involve the active process of constructing understanding rather than merely acquiring it passively.

Higher education programs in prosthetics and orthotics are unique in that they include both didactic aspects and psychomotor skills. At NUPOC, student engagement and understanding have improved through gamified active learning activities. The aim is to demonstrate how gamification can be leveraged to create immersive learning experiences. Competitive challenges offer students opportunities for personal development and discovery.

Objectives

- Explain the concept of gamification and its benefit to student learning and participation.
- Describe how gamification can be implemented into orthotic and prosthetic education.
- Demonstrate and discuss various gamification techniques.

Format

NUPOC has implemented a diverse repertoire of gamification methods. During the presentation, the speakers will actively engage the audience by showcasing gamification techniques and methodologies using electronic technology (e.g., Nearpod/Time to Climb) and traditional board games (e.g., Taboo – A word guessing party game). This synergetic approach will provide participants with firsthand experience in applying gamified learning techniques. Participants will leave with ideas on how to incorporate gamification within their own educational settings.

Statement of Relevance

As educators, we strive to deliver information to students in ways that are engaging and accessible. Gamified active learning fosters greater student participation and enthusiasm by utilizing diverse teaching methodologies and embracing new technology and educational resources.

References

1. Harasim, L. M. (2017). *Learning Theory and Online Technologies*. Routledge.
2. Ribeiro, Lauro André, Thaísa Leal da Silva, and Andréa Quadrado Mussi. (2018). "Gamification: A Methodology to Motivate Engagement and Participation in a Higher Education Environment." *International Journal of Education and Research*, 6(4), 249-264.
3. Junttila, Katja, et al. (2022). "Gaming Enhances Learning-Induced Plastic Changes in the Brain." *Brain and Language*, 230. <https://doi.org/10.1016/j.bandl.2022.105124>.
4. Ravyse, Werner Siegfried, et al. (2017). "Success Factors for Serious Games to Enhance Learning: A Systematic Review." *Virtual Reality*, 21, 31-58.
5. Dehaene, Stanislas. (2020). *How We Learn: Why Brains Learn Better Than Any Machine...for Now*. Penguin Books.

#S6: NUPOC's Journey of Alternative Assessment

Authors: John Brinkmann, MA, CPO/L, FAAOP(D); Allison Cerutti McGinnis, MPO, CPO; Michael Cavanaugh, MSHI, CPO; David Speers, CPO/L

Abstract

Background

NUPOC (Northwestern University Prosthetics-Orthotics Center) faculty have gradually de-emphasized grades throughout the curriculum over the past decade. This change was motivated by empirical evidence and faculty observations suggesting that traditional grading poses several disadvantages in motivating students and quantifying performance. Education research supports these findings, indicating that traditional grading can decrease student motivation and hinder learning. Although Northwestern University requires the use of grades, faculty have integrated innovative and incremental changes into teaching and assessment methods to mitigate the negative effects of grading while enhancing student learning.

Objectives

- Demonstrate the need for alternative assessment in clinical education:
 - Limitations of grades in assessing and communicating performance
 - Impact of grading on student motivation to learn
 - Inadequacies of grading in evaluating clinical performance
- Present an overview of alternative assessment methods:
 - Contract grading
 - Specifications grading
 - Ungrading (self-assessment)
 - Hybrid approaches
- Case Study
 - Present a case study showcasing curriculum redesign and the incremental integration of alternative assessment methods in one course.

Provide examples

Demonstrate various examples of alternative assessment use cases across multiple courses in the NUPOC curriculum

Statement of Relevance

Clinical learning requires effective assessment and feedback. Education research highlights the limitations of traditional grading systems. Alternatives to traditional grading can improve student motivation, provide more meaningful feedback, and better assess clinical performance, ultimately enhancing learning outcomes.

References

1. Pulfrey, C., C. Buchs, and F. Butera. 2011. "Why grades engender performance-avoidance goals: The mediating role of autonomous motivation." *Journal of Educational Psychology*, 103(3): 683.
2. Kohn, A. 1993. *Punished by Rewards: The Trouble with Gold Stars, Incentive Plans, A's, Praise, and Other Bribes*. New York.
3. Anderson, Peter AM. 2012. "Giving feedback on clinical skills: Are we starving our young?" *Journal of Graduate Medical Education*, 4(2): 154-158.
4. Inoue, Asao B. 2019. *Labor-based Grading Contracts: Building Equity and Inclusion in the Compassionate Writing Classroom*. Fort Collins, CO: WAC Clearinghouse.
5. Nilson, Linda B., and Claudia J. Stanny. 2015. *Specifications Grading: Restoring Rigor, Motivating Students, and Saving Faculty Time*. Routledge.

#FP6: Expanding O&P Education to Stimulate Technological Innovation and Collaboration**Authors:** Jesus Manuel Dorador-Gonzalez, Luisa Alejandra Santos-Borraez

Abstract

The curriculum for the orthotics and prosthetics degree at the National Autonomous University of Mexico (UNAM) was designed with five key areas of knowledge: basic sciences, technological area, medical area, applied orthotics and prosthetics, and social sciences and humanities. Each of these is essential for training prosthetists and orthotists who can care for patients in the clinical area, participate actively in interdisciplinary teams, propose the best solutions for patient care, and contribute to technological development and evidence-based design.

Traditional knowledge in medical biology and applied orthotics and prosthetics is essential for orthotists and prosthetists, as it equips them with the expertise to collaborate in diagnostics and propose effective solutions for patients. However, at UNAM, it was determined that a strong foundation in basic sciences—particularly physics and mathematics—and subjects traditionally found in engineering curricula are equally crucial. This allows orthotists and prosthetists to actively contribute to innovation and the design of new orthoprosthetic solutions, collaborating with engineers in design, materials, and manufacturing. Their clinical insights are vital in creating usable systems rather than merely aesthetically pleasing but impractical devices.

Therefore, the curriculum includes subjects such as physics, advanced mathematics, mechanics of materials, electronics, and digital circuits. Additionally, the inclusion of social sciences and humanities helps O&P professionals develop broad cultural understanding and communication skills, essential for working in transdisciplinary teams and effectively communicating with patients and their families.

Statement of Relevance

For over a decade, there was no formal training for prosthetists and orthotists in Mexico. Now, UNAM has an O&P program that focuses not only on clinical practice but also on innovation and technological development. The program equips O&P professionals to work in a transdisciplinary environment, requiring excellent communication and specialized technical knowledge. Collaborating with other professionals to innovate new technologies allows them to create more effective solutions for patients.

References

1. Universidad Nacional Autónoma de México (2018), "Proyecto de Creación del Plan de Estudios de la Licenciatura en Órtesis y Prótesis". Available online: <https://www.enesjuriquilla.unam.mx/wp-content/uploads/2023/08/Ortesis-y-Protesis-Tomo-I.pdf>
2. Vázquez, E. (2015). Los amputados y su rehabilitación. México. Available online: https://www.anmm.org.mx/publicaciones/ultimas_publicaciones/Rehabilitacion.pdf
3. World Health Organization. (2017). Health Topics: Disabilities. Retrieved from <http://www.who.int/topics/disabilities/en/>

#S7: Revolutionizing Orthotics and Prosthetics Education: Perspectives on Integrating Large Language Models and Artificial Intelligence Into P&O Education

Authors: John Brinkmann, MA, CPO/L, FAAOP(D), Michael Cavanaugh, MSHI, CPO, Bryan Malas, MHPE, CO, Mindy Thorpe, MS-IDS, CPO

Abstract

Background:

This symposium invites orthotics and prosthetics educators worldwide to explore the transformative potential of Large Language Models (LLMs) and Artificial Intelligence (AI). It is designed to empower educators with tools to integrate LLMs and AI into their teaching methodologies, thereby enhancing the educational experience for both educators and students. By leveraging this technology, educators can deepen their understanding of how AI and LLMs can revolutionize student learning and their own teaching methods.

Objectives:

- Explore the practical applications of LLMs and AI in orthotics and prosthetics education.
- Develop practical skills in using LLMs and AI tools to enhance teaching and learning experiences.
- Collaborate with peers to share best practices and innovative ideas.
- Discuss the ethical considerations of integrating AI and LLMs, including privacy, bias, and equity.

Format:

This engaging symposium will offer an interactive format with real-time audience participation. Presenters will provide an overview of LLMs and AI, followed by demonstrations and live examples of how both students and educators can benefit from AI tools. The session will feature hands-on exercises, real-time surveys, and panel discussions, giving participants a chance to practice using AI technology in their educational settings. Examples from current use cases will showcase how AI can be a powerful tool for enhancing both teaching strategies and student learning outcomes. Participants will leave with practical insights and tools to shape the future of the field by embracing innovation and preparing students for a technologically advanced landscape.

Statement of Relevance

This symposium addresses the growing need for orthotics and prosthetics educators to integrate LLMs and AI into their curricula, equipping them with the skills and knowledge to enhance both teaching and learning experiences. As AI continues to evolve, it is essential that educators stay informed to prepare the next generation of clinicians for the technological advancements they will encounter in their professional lives.

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#FP10: The Use of Progressive Client Narratives for Clinical Reasoning Skills of Undergraduate Prosthetic and Orthotic Students

Author: Adam Holden

Abstract

Background

Students within Prosthetics and Orthotics (P&O) require clinical reasoning skills to justify P&O interventions. Clinical reasoning, essentially a pattern recognition skill, is developed through clinical experience and is responsive to the individuality of each client (Delany & Golding, 2014). However, due to educational time constraints, students often struggle to acquire the breadth of clinical experience necessary for robust clinical reasoning. To address this, educators frequently use client case studies to simulate real-world scenarios and enhance student decision-making. Building on this method, *Progressive Client Narratives (PCN)* employ simulated 'clients' with narratives that evolve over the course of a multi-week module. As new content is introduced, the narrative expands, allowing students to justify interventions in response to the evolving client information. This inquiry-based learning model provides an authentic experience of creating client-centered intervention justifications, fostering a biopsychosocial model of healthcare.

Objective

This presentation aims to introduce an innovative educational model that promotes student engagement with content and demonstrates the development of clinical reasoning skills in intervention justification.

Methods

Three distinctive simulated client narratives were developed for a foundational transtibial prosthetics course. 'Client' information was introduced over a series of modules. Students, working in peer groups, were assigned a 'client' to manage, exploring prescription options as new content was presented.

Results

Student feedback indicates that PCNs foster engagement with course material and help translate theoretical knowledge into real-world contexts. Observations suggest that students take ownership of their 'client,' which promotes deeper learning.

Conclusion

The development of clinical reasoning skills for intervention justification is a fundamental, yet often elusive, skill for P&O students. The PCN model offers an authentic clinical reasoning experience that extends beyond traditional case studies. Initial results suggest that PCNs have the potential to become a subject of further research regarding their efficacy in enhancing clinical reasoning skills.

Statement of Relevance

This piece offers actionable insights into an innovative teaching tool that can be adopted and adapted by educators in the P&O field

References

1. Delany, C., & Golding, C. *Teaching clinical reasoning by making thinking visible: an action research project with allied health clinical educators*. BMC Med Educ 14, 20 (2014).
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#FP11: Learning Assessment of Mechanical Concepts: Establishing Content Validity Author: Sue Spaulding

Abstract

Background

Prosthetic and orthotic professionals must be skilled in assessing and adjusting the operational quality, safety, and durability of devices. Accurate assessment of these factors requires applying fundamental mechanical concepts. However, few objective methods exist to evaluate student learning of these mechanical concepts. As curricula move toward competency-based education, the validity of student learning evaluation measures becomes increasingly relevant.

Objective

This study aims to gather content evidence that supports the construct validity of pretest and post test exams designed to assess mechanical concepts.

Methods

Multiple-choice and true-false questions were developed following best practices for examination item construction. A convenience sample of content experts was identified, with inclusion criteria of a master's or doctoral degree in mechanical engineering and work experience in prosthetics-orthotics. Content experts reviewed the quiz through either a digital document (MS Word) or Zoom. They were provided written instructions, course learning objectives, and pretest and posttest items with correct answers identified.

Revisions were made after each expert's review.

Results

Three content experts participated in the review process. All questions aligned with the learning objectives. Suggestions were made to improve the clarity, relevance, and meaningfulness of the questions, including edits to the stem and response options. Experts recommended reducing the number of questions on one topic, moving items from the pretest to the posttest, and using appropriate engineering terminology.

Conclusion

Prosthetic and orthotic professionals need a deep understanding of mechanical concepts to predict how devices will respond to external loads, create the shape and trimlines, place the strongest materials, and ensure proper device operation. Content experts provided valuable feedback and evidence to support the construct validity of the pretest and posttest questions, helping to evaluate student learning of mechanical concepts.

Statement of Relevance

As curricula move toward competency-based education, the validity of student learning evaluation measures becomes increasingly important.

References

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#FP15: In Pursuit of an Inclusive Classroom: Reflections and Directions

Author: Adam Holden

Abstract

Background

Clinicians with disabilities hold unique ways of knowing and connecting with their clients through their own lived experiences (Battalova et al., 2020). For better representation of clinicians with disabilities in Prosthetics and Orthotics (P&O), students with disabilities (SwD) must successfully complete Higher Education (HE). However, SwD face challenges in entering HE, progressing through to graduation, and securing employment in the P&O profession. Multiple stakeholders are responsible for reducing these multi-faceted challenges that have historically excluded SwD. As HE academics, it is our responsibility to reduce the social and systemic barriers in HE that impact the success opportunities for SwD. This reflective discussion outlines the journey of the University of the Sunshine Coast (UniSC) P&O program toward creating an inclusive classroom, while balancing the requirements of accrediting bodies and the HE institution.

Objective

To discuss the meaning and practicality of an inclusive classroom and to demonstrate authentic self-reflection as a tool for inclusive change.

Methods

Prompted by personal reflection, the three academics of UniSC's P&O team are exploring educational practices that may contribute to barriers facing SwD. Collaboration has begun with student cohorts, students with disabilities, the Disability and Inclusion Student Guild, AccessAbility services, the UniSC Centre for Support and Advancement of Learning and Teaching, and workshop technical staff, all in pursuit of an equitable learning experience.

Results

Based on stakeholder input, UniSC P&O has made the following adaptations:

- Balanced learning activities using practical Universal Design for Learning.
- Assessment pieces developed with an Inclusive Design lens.
- Changes to the physical workshop environment.
- Shifts in academics' perspectives of disability, inclusion, and equity.

Conclusion

The development of an equitable classroom is an ongoing, collaborative process. Educators must explore what and how they teach, and understand the impact this can have on SwD. This reflective discussion aims to model how the personal journey of reducing inequitable barriers can promote an inclusive environment for all students.

Statement of Relevance

Creating an inclusive classroom for students with disabilities through equitable approaches is relevant to all educators. It is especially important in P&O, where clinicians with disabilities add strength to workforce diversity.

References

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#FP16: Navigating the Virtual World: Maximizing Virtual Site Visit Effectiveness for Future Success Author:
Bryan Malas, MHPE, CO & Mindy Thorpe, MS-IDS

Abstract

Background

In response to the challenges posed by the global pandemic, ISPO Accreditations transitioned to an entirely virtual format, yielding both advantages and hurdles. While the virtual approach offered cost savings, conducting site visits via platforms like Zoom introduced novel obstacles. Despite the undeniable benefits of in-person engagements, logistical constraints sometimes necessitate virtual alternatives. Hence, it becomes imperative to glean insights from virtual site visits to enhance their efficacy, given their likely persistence in the foreseeable future.

Objective

This presentation aims to critically evaluate the merits and shortcomings of virtual site visits, drawing upon empirical data and lessons learned from audit teams. Through an examination of best practices and key insights from experienced auditors, strategies for the continual enhancement of the virtual site visit process will be outlined.

Methods

Utilizing data collected from virtual auditors, this study offers perspectives on effective approaches and potential pitfalls in conducting virtual site visits. Presenters will elucidate successful methodologies as well as areas for improvement based on their firsthand experiences.

Results

The evaluation underscores the nuanced nature of the decision between in-person and virtual site visits, emphasizing the importance of leveraging lessons learned to refine the process continually. By synthesizing insights from virtual engagements, auditors can navigate future site visits with greater proficiency and adaptability.

Conclusion

While the debate over the optimal mode of site visitation persists, the insights gleaned from virtual experiences furnish invaluable guidance for auditors seeking to optimize their practices. Moving forward, a dynamic approach that integrates the lessons learned from virtual engagements will be pivotal in ensuring the efficacy and adaptability of site visit processes amidst evolving circumstances.

Statement of Relevance

Some virtual site visits are likely to stay for the foreseeable future, so allowing the profession to understand the process and ways to continue improving this type of visit will benefit all prosthetics and orthotics (O&P) educational institutions.

References

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#FP17: A Process to Improve the Application of Hand Skills Post Short-Term Training in Less Resourced Countries

Authors: Subhash Kumar Sinha & Reto Wegmann

Abstract

Background

Prosthetists/orthotists often attend short-term training sessions to enhance their hands-on skills. However, many do not apply these skills effectively after training, leading to wasted resources and efforts for trainers, employees (trainees), and employers. An innovative approach is needed to improve the long-term effectiveness of such training programs.

Objective

This study aims to identify the factors that influence the effectiveness of short-term training for trainers, employees (trainees), and employers in the field of prosthetics and orthotics.

Method

The research used Grounded Theory to explore the factors affecting the application of hand skills after training. Interviews were conducted with 12 professionals who received short-term training from the International Committee of the Red Cross (ICRC) in Rwanda, Somalia, and Tanzania. The qualitative data collected was coded, grouped, and categorized to identify the key influencing factors.

Results

The study identified two major groups of influencing factors:

- People-related factors: These include the characteristics of service users, service providers, human resources, and leadership.
- System-related factors: These encompass facilities, processes, financing, and outcomes that impact the effectiveness of short-term training.

Conclusion

Implementing targeted recommendations in the training process can significantly enhance the effectiveness of short-term training programs. This study's findings, based on research in low-resource settings, contribute to the innovation theme of the conference by offering strategies to improve the practical skills of prosthetists/orthotists working in ICRC-supported projects.

Statement of Relevance

The results of this study fit within the innovation theme of the conference. Conducted in low-resource settings, it offers valuable insights that can improve the impact of short-term training programs designed to enhance the practical skills of prosthetists and orthotists in ICRC-supported initiatives.

References

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#FP18: Crafting Competence: Objectivity in Hand Skills Education Author:
Jeremy Sherman

Abstract

Background

Orthotics and prosthetics (O&P) graduate-level education involves training in the cognitive, affective, and psychomotor domains. Developing competence in each of these domains relies on a student's or faculty member's ability to reconcile current skillsets with a desired target. Educators must assess a learner's skill to grade and provide feedback; however, there are no O&P-specific outcome measures for objectively assessing psychomotor skills, commonly referred to as hand skills. Although the importance of hand skills may evolve with technology, most professionals believe they will remain essential to the field for at least the next 10–20 years. Objective assessment of hand skills in O&P will facilitate accurate self-assessment and targeted progression for students.

Objective

The objective of this study was to develop an objective tool to measure students' hand skills competency.

Methods

An instrument, the Hand Skills Test (HST), was created to assess two cohorts of master's students on metal bending, riveting, flaring, foam skiving, and plastic polishing skills. Task-specific rubrics underwent revisions focused on speed, interrater reliability, and internal consistency. The final rubric was implemented as a pre-post assessment with one cohort of students, comparing median and standard deviations of each skill.

Results

Interrater reliability for the HST averaged 87.8% across both trials. Between trials 1 and 2, standard deviation reduced 75% of the time, while minimum scores for each task increased 81% of the time. Scores for skiving and plastic polishing showed the most improvement, increasing by 20.21% and 27.92%, respectively.

Conclusion

The HST is a reliable and consistent tool sensitive to skill acquisition. Broader implementation of the HST and long-term tracking of hand skills development, combined with existing assessments, can enhance the objectivity of technical education and contribute to more effective training paradigms.

Statement of Relevance

This research addresses the evolving emphasis on hand skills in the field of O&P by introducing an objective assessment tool, the O&P Hand Skills Test (HST). The study contributes to refining educational strategies, enhancing objectivity, and preparing future clinicians with a well-rounded skill set.

References

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#FP21: Developing an Educational Assessment Tool for AFO Impression Taking: Delphi Study Integrating the EPA Framework

Authors: Amy Lawrence, Allie McGinnis, Gloria Lee, Renato Delos Reyes

Abstract

Background

Health professions education has been shifting toward a competency-based model. While clinical competencies have been proposed for orthotics education, standardized assessment methods to evaluate these competencies have not been established. Other healthcare disciplines have employed the entrustable professional activities (EPA) framework to conduct competency-based assessments, which rate competency in terms of “entrustability” to independently perform specific clinical activities. EPAs are disaggregated into "essential skills." One essential EPA in orthotics is performing an ankle-foot orthosis (AFO) impression. The ability to take an accurate AFO impression is well delineated within the ABC Scope of Practice for Certified Orthotists and is highlighted as a key competency for both students and residents within the CAAHEP and NCOPE standards.

According to the 2022 ABC Practice Analysis, Certified Orthotists emphasized the importance of AFO impression taking and noted that a large portion of their lower limb orthotics practice is allocated to AFOs.

Objectives

The objective is to define the EPA for AFO impression taking and then create a tool to assess students' and residents' competency in this skill.

Methods

Initial Delphi survey items were developed from a focus group of orthotics instructors from one Master of Prosthetics and Orthotics program. The survey will be piloted across a convenience sample of current and past faculty members from the same institution and then distributed to experts to obtain consensus on the essential skills required for performing an AFO impression. Consensus will be calculated, and survey items that do not attain consensus will be modified for subsequent rounds.

Results

To date, the pilot survey has been launched.

Conclusion

Survey results will be used to create a tool to assess the competency of students and residents in performing an AFO impression. This will help ensure that future practitioners can competently and independently carry out this essential clinical skill in a standardized and meaningful way.

Statement of Relevance

There is a need for standardized, competency-based assessment methods in orthotics education to ensure that graduates and residents can be entrusted to perform essential skills and activities in clinical practice. To the authors' knowledge, the assessment tool resulting from this Delphi study will be the first EPA-based assessment tool for use in orthotics education and will enable educators to assess an essential clinical activity—AFO impression taking—in a clinically meaningful and standardized way.

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#FP27: Impact of the Local Prosthetic and Orthotic Education Program on Prosthetics and Orthotic Services in Bangladesh

Author: Md Jubayer Hossain

Abstract

Background

Bangladesh has a large disabled population, and the demand for prosthetic and orthotic (P&O) services is very high. However, there is a significant shortage of P&O professionals and service providers within the country. The diploma in Prosthetics and Orthotics program has been running at BHPI (Bangladesh Health Professions Institute) since February 2014. A total of 30 graduates from BHPI are currently working in various rehabilitation setups across Bangladesh. After more than three years of operation, it became crucial to evaluate the program's impact on P&O services in the country.

Aim

This study aims to understand the impact of the diploma in Prosthetics and Orthotics program, run by BHPI School of Prosthetics and Orthotics, on P&O services in Bangladesh.

Method

The study follows a mixed-method approach. The participants include 30 P&O graduates and a sample of 60 patients (30 prosthetic users and 30 orthotic users). Potential participants will be identified from the graduate lists of the School of Prosthetics and Orthotics, BHPI. Each graduate will select two patient participants (one orthotics user and one prosthetics user). The study will be conducted at the workplaces of these graduates in various prosthetic-orthotic clinics across Bangladesh. Data will also be collected from clinic managers.

Data will be gathered using structured questionnaires for students, service users, and managers.

Results

The study is ongoing, and data analysis has not yet been completed. Full results will be shared upon completion of the analysis.

Discussion and Conclusion

As the study is still in progress, the discussion and conclusion will be provided once data analysis is complete.

Statement of Relevance

This study evaluates the effectiveness of the Diploma in Prosthetics and Orthotics program in Bangladesh in a local context. The findings will provide insight into the program's impact on P&O service provision and may inform future initiatives to address the shortage of P&O professionals in the country.

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#FP29: Designing Instructional Materials to Teach Skin Assessment in Orthotics and Prosthetics on People with Black and Brown Skin

Authors: Cody L. McDonald, PhD, MPH, CPO, University of Washington**, Daniela Philips, Shirley Ryan Ability Lab, Gabby Richardson, CPO, Tech Ridge Prosthetics, Sue Spaulding, MS, CPO, University of Washington

Abstract

Background

Prosthetists and orthotists must be competent in the examination, evaluation, and assessment of users across their lifespan and within a broad continuum of care. Yet, teaching materials for evaluating excessive localized pressure and identifying problematic skin conditions on Black and Brown skin do not exist in P&O education. To improve skin assessment skills, educators need specific instructional materials. The development of effective instructional materials requires a strategic approach.

Objective

To develop a digital handbook to improve prosthetist-orthotist skin assessment skills and enhance patient care.

Methods

A 20-question survey assessed students' ability to identify P&O-related skin conditions on Black and Brown skin compared to White skin. Common skin problems were identified through a review of textbooks and expert opinion. A literature review will also be conducted to purposefully design the instructional materials in alignment with adult learning theories and national/international standards.

Results

The survey results indicated that P&O students (n=8) performed better on questions showing images of skin conditions on White skin (White skin = 10, Black/Brown skin = 10). Only one student correctly identified an allergic skin reaction on Brown skin, while all participants correctly identified the condition on White skin.

Instructional design will incorporate cognitive load theory (e.g., coherence, contiguity, and redundancy principles) and principles of accessibility.

Conclusion

The survey highlights the need for instructional materials to improve skin assessment on Black and Brown skin. The digital handbook will be designed to address this gap and be applicable to pre-certified P&O students and P&O clinicians. It aims to raise awareness of the underrepresentation of darker skin tones in teaching materials, shift teaching practices to reduce White bias, and improve equity in care by equipping clinicians with accurate skin assessment skills regardless of skin tone.

Statement of Relevance

The process of developing instructional materials for evaluating different skin tones may serve as a model for the development of other educational resources.

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#FP32: Human Study's Innovative Approach Empowering Accessibility in Orthotics and Prosthetics Education

Author: Luai Alhallaak & Human Study team

Abstract

In the past decade, amidst global conflicts and the unprecedented challenges of the COVID-19 pandemic, the provision of Orthotics & Prosthetics (O&P) services has become increasingly critical, especially in regions torn by war and unrest. In response to this urgent need, Human Study e.V., an NGO with a global presence, has spearheaded an innovative approach, distinguished by collaborative efforts with international and local partners, enabling us to extend the reach and impact of our training programs.

What sets Human Study e.V. apart is its steadfast commitment to neutrality, ensuring equitable access to training courses even in the most volatile regions. Drawing upon the expertise of a diverse international academic team, comprised of seasoned professionals with extensive clinical backgrounds, the organization has excelled in equipping professionals in conflict-ridden countries.

At the heart of this approach is the blended learning model, which seamlessly integrates online education with hands-on clinical workshops in professional settings. This method meticulously prepares participants by instilling in them a sense of high competence that reverberates wherever they go.

Guided by the mission "Knowledge for Better Life," Human Study e.V. focuses on enabling individuals with disabilities to access quality services through skilled professionals. Over the past decade, the organization has expanded access to O&P training in conflict zones such as Ukraine, Syria, Afghanistan, and Iraq.

Furthermore, amidst the global COVID-19 pandemic, the resilience of Human Study e.V. shone through, enabling the organization to overcome barriers and maintain the continuity of its mission. The presentation will include outcome data derived from Human Study's comprehensive database and stakeholder interviews, including feedback from the team, trainees, alumni, and partners, demonstrating the tangible impact of these efforts.

We invite you to join us at GEM to share our journey and spotlight the efficacy of our approach, which is paving the way for a more inclusive and empowered future in O&P education.

Statement of Relevance

This abstract underscores the innovative approaches adopted by Human Study e.V. in prosthetic and orthotic education, emphasizing the importance of continual learning and collaboration to meet the evolving challenges in O&P education. It aligns with the theme of the ISPO Global Educators Meeting (GEM).

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#FP37: Development of Revised Domains and Competencies Aligned with Contemporary Patient-Centric Care for the NCOPE Orthotist/Prosthetist Residency

Author: Chris Robinson

Abstract

Background

The 2012 NCOPE residency standards integrated clinical competencies tied to specific orthoses/prostheses and the American Board for Certification (ABC) domains of practice. While these standards were clinically relevant, they did not consistently define the knowledge, skills, and behaviors outside direct patient care that are essential for professional success.

Objective

This exercise aimed to assess other health professions and use residency director-identified domains/themes to propose a new competency framework for the NCOPE residency.

Methods

Educational domains and competencies were identified across various health professions through online resources provided by accrediting bodies, certifying agencies, and professional organizations. Both artificial intelligence (AI) and hand-coding were used to perform an open text analysis of final evaluations of orthotist/prosthetist residents to identify relevant educational domains/themes. The shared domains/competencies and residency director-defined themes were presented to the NCOPE residency standards committee and the board of directors (BOD) for review and consideration.

Results

Competencies and education domains were identified in 12 health professions, each defining 5-10 domains. Seven domains appeared in four or more professions: (1) Knowledge, (2) Decision-Making, (3) Communication,

(4) Patient Care, (5) Professionalism, (6) Systems-Based Practice/Interprofessional Collaboration, and (7) Personal/Professional Development. Within these shared domains, 27 competencies were identified as potentially relevant to orthotist/prosthetist practice. Additionally, 1,912 final resident evaluations were analyzed, revealing five themes that aligned with the identified domains: (1) Communication, (2) Patient Care, (3) Decision-Making, (4) Professionalism, and (5) Personal/Professional Development. The NCOPE standards committee and BOD supported the integration of the seven shared domains into the revised residency framework.

Conclusion

The need to align orthotist/prosthetist education with patient-centric care and competencies reflective of modern healthcare practice was strongly reinforced during the 2023 NCOPE Education Summit. Adopting these educational domains will enable the creation of appropriate entry-level competencies, ensuring that orthotists/prosthetists are prepared to meet both patient needs and the challenges of the contemporary healthcare system.

Statement of Relevance

The development of educational domains and competencies aligned with modern clinical practices ensures that entry-level orthotists/prosthetists are equipped to meet patient needs and the demands of today's healthcare system.

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#FP39: Development of Real-time Feedback Stump Model for Casting Practice Simulation**Author:** Asst. Prof. Manunchaya Samala BSc, M.Ed. Ph.D.

Abstract

The COVID-19 pandemic has caused delays and postponements in practical workshops for Prosthetics & Orthotics (P&O) students, particularly during casting sessions, due to the inability to invite model patients. This delay in hands-on practice could significantly decrease student performance. The inclusion of a replicated stump model for practical sessions offers a potential solution to this issue.

One of the primary goals of P&O educational institutions is to produce qualified professionals capable of working with patients who require P&O devices. Hands-on experience is crucial for developing the necessary skills, and creating more opportunities for practical exercises is essential. However, using real model patients raises ethical concerns and increases training costs. Medical education has increasingly adopted manikin simulation, which has proven effective in improving knowledge acquisition and critical thinking in the nursing field. Similarly, in anesthesiology, manikin simulations enhance patient safety by improving residents' hand skills.

This project aims to develop a stump model simulation as a teaching tool to enhance P&O students' practical skills while reducing the costs associated with using real model patients. By using simulated stump models, students can continue practicing during disruptions, like the COVID-19 pandemic, and potentially improve their casting skills without the need for patient participation.

Statement of Relevance

The use of a real-time simulated stump model in P&O courses may replace the initial session of practical training for students. This substitution would result in cost savings by reducing the need for patient participation and offer students the flexibility to practice casting at any point during the course.

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#FP41: Gamification in O&P Classroom; Sirinhorn O&P, Mahidol University, Thailand

Authors: Nathanit Jirapongpathai, Pakpoom manochatr, Chollada Tangcharoenvej, Surapornchai Thammasiri

Abstract

Background

Teaching media are continually being developed to attract and engage students in learning. One such method is game-based learning or gamification, which is gaining popularity in various educational fields, including medical and healthcare education. Multiple studies have shown that gamification enhances learning outcomes and student satisfaction. In clinical healthcare education, decision-making is a vital skill that students must practice in diverse case scenarios. However, clinical decision-making within time constraints can be a challenge for both students and educators.

Objective

This presentation explores the use of gamification in prosthetics and orthotics (P&O) education to encourage learning, creativity, analysis, and problem-solving while maintaining a fun and engaging environment for students.

Method

An online questionnaire was conducted to survey current students, alumni, and certified prosthetists and orthotists (CPOs) to gather feedback on their needs, preferences, and expectations for game formats and rules. The data was analyzed, and a prototype was developed and tested by both the developers and volunteers. The game, titled "Siriraj Prosthetic and Orthotic Treatment (SIPORx)," was created as a decision-making card game. Students used this game to practice identifying clinical problems, creating treatment plans, making prescriptions, and engaging in peer discussions. This approach provided both an assessment and a challenge for participants.

Results

The initial prototype, SIPORx, focused on decision-making and material selection based on case scenarios, allowing students to define problems and collaborate with peers. Additionally, the "Pedorthic Series," inspired by the first P&O course at the Sirindhorn School of Prosthetics and Orthotics, was introduced to further integrate gamification into the curriculum.

Conclusion

To expand the use of gamification as a teaching tool, feedback from students and players is critical. This approach has the potential to be adapted for other P&O devices and extended to other healthcare professions, thus improving both educational engagement and decision-making skills.

Statement of Relevance

Gamification offers an innovative method for enhancing student engagement and problem-solving in prosthetics and orthotics education. Feedback and adaptation of this method could lead to broader applications across healthcare education.

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#FP42: Embracing PO Quality Education during an Insecurity and Armed Conflict in The Republic of The Union of Myanmar

Author: Sisary Kheng

Abstract

Background

In war and post-conflict areas, the basic healthcare system is often disrupted, including the training of healthcare professionals. The Exceed Worldwide Prosthetics and Orthotics (PO) training programs in Cambodia (DPO) and Myanmar (MSPO) experienced interruptions to professional education due to COVID-19. However, the Myanmar PO School faced additional disruptions as a result of political instability and widespread violence in the country.

Objective

This presentation addresses the challenges encountered in PO education during the extended periods of conflict in Myanmar and highlights the strategies implemented to maintain educational standards and ensure the continued development of student competencies.

Method

The modifications to the modes of delivery during the COVID-19 pandemic provided temporary solutions. However, prolonged conflict, along with the suspension of colleges and universities, necessitated alternative strategies. These involved changes to the educational venue, a curriculum review, credit comparisons, the introduction of supplementary modules, and practical assessments to evaluate and reassess the attained skills and competencies of students.

Results

The educational modifications successfully provided a pathway for students to continue their studies despite the disruptions caused by conflict. The re-assessment of skills and competencies ensured that students maintained the necessary professional standards required in the PO field.

Conclusion

In conflict-affected areas like Myanmar, innovative strategies are crucial to sustaining PO education. The combination of curriculum review, alternative delivery methods, and skill reassessments have proven effective in overcoming the challenges posed by both the pandemic and ongoing political instability. These strategies could serve as a model for other post-conflict and conflict areas experiencing similar disruptions in healthcare education.

Statement of Relevance

Adapting and sustaining education in conflict-affected areas is vital for maintaining the quality of healthcare services. The strategies implemented in Myanmar demonstrate the resilience of the PO educational system and the importance of innovation in challenging environments. These efforts contribute to the continued development of a skilled healthcare workforce even in the most difficult circumstances.

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Collaborate

#S2: Collaborating to Address Attrition in Prosthetics and Orthotics

Author: Ashley Mullen, PhD, MSAT, CPO, Eddie Krische, MS, CPO, Eddy Gosschalk, CPO, Phil Stevens, MEd, CPO

Abstract

Employers have reported increasing numbers of individuals leaving the profession of prosthetics and orthotics (P&O); similar trends have been identified and studied in other healthcare professions. Various factors may lead clinicians to pursue alternative employment, and as the demographics of the workforce continue to shift, an examination of the education, recruitment, hiring, training, and promotion process is essential to understanding barriers to career longevity. Additionally, awareness of interventions, such as resilience training, may allow educators and employers to implement strategies to address attrition.

This session will include presentations that follow the pathway of an entry-level clinician, from student (admissions, didactic education, clinical education/residency) to employee (early career clinician, new clinical manager). Perspectives from educators, clinicians, and managers/employers will be shared, with each commenting on trends and personal experiences. Current and proposed interventional strategies based on available evidence will be presented. Active participation from audience members regarding their experiences will be encouraged as part of a structured discussion and Q&A session. Where permissible, data from educational programs and employers will be shared with the audience.

Statement of Relevance

There are currently not enough prosthetist orthotists to fill open job positions and meet the patient-care demand. Identifying professional attrition and effective interventional strategies, while fostering collaboration across academic programs and employers, is critical to ensuring the health of the P&O workforce.

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#FP7: Mentoring Educators Teaching Prosthetics and Orthotics in Less Resourced Countries: A Step Towards Developing Partnerships?

Author: Rau Barbara

Abstract

Background

The International Committee of the Red Cross (ICRC) has been involved in the field of physical rehabilitation and Prosthetics & Orthotics (P&O) education since 1979 with on-the-job training, short courses, and support for formal education. Currently, ICRC runs P&O courses in Afghanistan and collaborates with P&O education institutions in Bangladesh, Iraq, Syria, Togo, and Yemen. Mentoring, as a bi-directional process, develops both the mentees' skills and the mentors' experience of different educational realities and benchmarks the training offer.

Objective

This presentation will highlight the need for mentoring and the development of partnerships to support P&O educators in countries where the P&O domain is not well established.

Method

A literature-based survey was conducted in 5 ICRC-supported education facilities to identify the needs of educators for mentorship. Onsite discussions with ICRC educators and partners further explored this theme.

Results

Although studies accrediting this topic were found, few had significant attributions. The survey identified numerous mentoring topics (ranging from clinical practice supervision to innovation), the need for continuous professional development, and the expectation to link with international expert educators. While the benefits of mentoring are well described, local mentoring resources are often unavailable. The educators interviewed expressed optimism for GEM 2024: "to initiate ongoing exchange, professional development, and collaboration."

Conclusion

The mentoring of P&O educators will assist in reaching the ISPO recommended education standards in less- resourced countries. Institutions in these contexts often struggle to initiate partnerships. The start of inter- institutional mentoring collaboration is innovative and could lead to increased collaboration in the field of P&O education. As Kogler & Hovorka state, "Academia shapes the P&O profession... educators from less-resourced countries deserve this exchange of experience and access to the latest developments in P&O education."

Statement of Relevance

Mentoring of educators, as a step toward institutional partnerships, will assist in developing P&O education worldwide. It might lead to increased North-South and South-South institutional collaborations in the field of P&O education.

References

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#S8: The Benefits of Partnerships Between Industry and Education Institutions in P&O

Authors: Helen Cochrane MSc. CPO(c), Doug Reber CO, LO, Jonathan Taylor, Sean McKale CO, ATC, Allen Ingersoll CP

Abstract

Background

Industry partnerships with education institutions in prosthetics and orthotics offer several benefits:

- Access to cutting-edge technology: Industry partners provide access to the latest tools, equipment, and technology used in prosthetics and orthotics. This exposure allows students to learn with state-of-the-art resources, preparing them for real-world applications.
- Practical experience: Collaborating with industry allows students to gain hands-on experience through internships, co-op programs, or research projects.
- Curriculum relevance: Working closely with industry partners ensures that the curriculum stays relevant to current needs and trends in the field.
- Professional networking: Industry partnerships offer opportunities for students to network with professionals in the field, potentially leading to internships, job opportunities, mentorship, and career insights.
- Research opportunities: Collaboration between academia and industry fosters research and innovation, contributing to advancements in prosthetics and orthotics.
- Continuing education: Partnerships facilitate continuing education and professional development for both students and faculty.
- Addressing real-world challenges: Industry collaborations help tackle real-world challenges in prosthetics and orthotics, benefiting both students and industry partners in finding innovative solutions.

Overall, these partnerships enhance education quality, prepare students for careers, and drive innovation in the field of prosthetics and orthotics.

Objectives

- Highlight innovative practices in education related to industry collaboration.
- Introduce educators to industry partners with current or prospective programs for prosthetic/orthotic students.
- Encourage education-industry collaboration.

Format

This symposium will include multiple industry partners sharing how they work with education programs.

Statement of Relevance

Partnerships between prosthetic/orthotic education institutions and industry represent an important strategic alliance. These partnerships ensure that graduates are equipped with relevant skills and knowledge, benefiting both educational institutions and employers while fostering innovation in the field.

References

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<https://hangerclinic.com/for-professionals/hanger-institute/education/>

2. Otto Bock – *Academy Services*

<https://www.ottobock.com/en-ex/services/academy>

#S10: A Journey of Health and Safety Education within Prosthetic & Orthotic Programs: A Review of Current Standards, Identifying Challenges and Establishing Future Directions

Authors: Adrienne Cuch

Abstract

Background

While Health and Safety (H&S) education is a crucial component of many educational programs, limited research exists on the effectiveness of current practices in preparing prosthetic and orthotic (P&O) students for real-world scenarios. A strategic approach to health and safety aims to support students during their studies, establish safe practices as they enter the workforce, and ensure practitioner retention in a field with known hazards and risks of musculoskeletal injuries (Anderson et al., 2015).

Objective

This presentation will outline the ongoing journey at George Brown College to provide a strong foundation of safe practices for P&O students. It will explore H&S guidelines within the educational context, focusing on bridging the gap between theoretical knowledge, practical application during labs, professional placements, and ultimately workforce practices.

Method

The session will include a literature review of relevant research on health and safety in P&O education. In addition, student perspectives on H&S during both their academic studies and field placements will be shared. A panel discussion with educators will offer international insights on best practices for supporting students' health and safety, from both occupational and wellness perspectives.

Results

Through a panel discussion and engagement with attendees, this symposium aims to identify successful H&S educational strategies. Questions posed to the panel will encourage dialogue between educators, fostering collaboration on best practices.

Conclusion

The session will conclude with an interactive Q&A, offering the opportunity to learn from attendees about additional H&S information and skills needed for P&O education programs. The session will focus on strengthening P&O programs by ensuring student well-being through effective health and safety education.

Statement of Relevance

Establishing health and safety protocols within the educational context is crucial for supporting students during their studies and beyond. Collaboration between institutions can ensure diverse perspectives are shared and challenges are addressed, helping to improve student well-being and safety in prosthetics and orthotics programs.

References

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#FP19: An Improved Understanding of the Requirements of ISPO for P&O Education Accreditation Author:
Dr. Mary Scott

Abstract

Background

Accreditation is a validation process through which prosthetic and orthotic (P&O) education programs or pathways are measured and assessed against the International Society for Prosthetics and Orthotics (ISPO) Education Standards. ISPO has developed 15 Standards for P&O education, of which Standard I is the most critical.

ISPO can recognize either an individual program or pathway at one of three levels:

- Prosthetist/Orthotist
- Associate Prosthetist/Orthotist
- Prosthetic/Orthotic Technician

ISPO auditors are volunteers with expertise in prosthetics and orthotics education.

Process

The accreditation process involves several stages:

- Initial Application: This is an online document available from the ISPO website, and it is due 12 months before the final exams.
- Self-Study: The Self-Study is an objective, comprehensive evaluation of the education program or pathway aimed at quality self-improvement. ISPO provides an online template after accepting the Initial Application. The Self-Study submission is due 6 months before the final exams.

It is the program's responsibility to provide all necessary information and evidence for the Self-Study, while ISPO auditors examine and evaluate that information. The audit procedure only moves forward if the Self-Study is considered complete.

- Audit: Audits, which can be either on-site or virtual (depending on ISPO's decision), generally last 3 to 4 days. Auditors observe the competency of graduates without participating as examiners, evaluating both the process and the students' competencies. Auditors then submit recommendations to the ISPO Accreditation Sub-Committee.

The ISPO Accreditation Sub-Committee reviews the documentation and auditors' recommendations and forwards its suggestions to the ISPO Education Committee, which makes the final decision on awarding accreditation.

Conclusion

ISPO accreditation is a voluntary process pursued by P&O education programs or pathways, which serves as a critical measure of quality assurance in education.

Statement of Relevance

Since the implementation of the ISPO Education Standards in 2018, ISPO has identified several misunderstandings on the part of organizations seeking accreditation. This presentation aims to clarify those issues to a broad audience involved in P&O education, enhancing understanding and compliance with ISPO standards.

References

1. ISPO Education Standards 2018
2. ISPO International Standards Handbook
3. ISPO Handbook, available from the ISPO website

#FP20: O & P Graduates Preparedness for Residency: Perceptions of Mentors

Authors: Jason Wening MS, CPO/L, FAAOP, Kevin Hagemeyer, CPO, Christopher Robinson MS, MBA, CPO, ATC, FAAOP(D), Vahness Swilley-Concepcion CLSSBB, Douglas Reber CO/L, Phil Stevens MEd, CPO, FAAOP

Abstract

Introduction

Orthotist/prosthetist education in the U.S. comprises a Clinical Master's Degree and a post-didactic residency. The 2023 NCOPE Educational Summit made a formal recommendation to encourage dialogue between educators and clinicians to define mutual expectations for students transitioning to clinical residency. There is little data available describing how residency mentors perceive the preparedness of students entering residency. The purpose of this study was to identify mentor perceptions of incoming residents' preparedness to initiate residency.

Methods

Thirty residency directors/mentors with at least 5 years of continuous experience supervising residency from a nationwide O&P provider were selected to complete a survey of resident preparedness. The Association of American Medical Colleges' Resident Readiness Survey was used as a template and modified to reflect O&P practice while maintaining the response options: Fails to Meet Expectations, Meets Expectations, Exceeds Expectations, Not Enough Information, and Not Applicable. Respondents completed 10 closed-ended and 3 open-ended questions relative to their experience working with a resident in the first quarter of residency.

Results

Twenty-two survey responses were received. Across the 10 questions, respondents' answers averaged: 'Fails to Meet Expectations' 1.6 times, 'Meets Expectations' 7.2 times, and 'Exceeds Expectations' 1.2 times. Questions with the highest rates of 'Fails to Meet Expectations' were associated with bench alignment (23%), observational gait (27%), and coding (32%). The highest levels of 'Meets' or 'Exceeds Expectations' were associated with professional awareness (100%), documentation skills (91%), and establishing trimlines (91%). In open-ended responses, mentors most often reported that entry-level residents lacked sufficient technical or hand skills (n=11).

Discussion

This study aimed to identify areas where entry-level residents meet or fail to meet the expectations of established residency mentors at a nationwide private practice. However, it did not explore whether respondents' expectations were reasonable or unreasonable. This study reaffirms the recommendations generated at the 2023 NCOPE Educational Summit.

Statement of Relevance

Communication and collaboration between O&P educational sites and O&P residency sites are valuable for both parties and the students relying on both. Understanding residency mentors' perceptions of graduates' preparedness for residency is a starting point for a discussion about mutual expectations.

References

1. NCOPE 2023 Educational Summit on Challenges and Opportunities in O&P Education and Training: Envisioning Future Needs, August 2023. NCOPE, <https://ncope.org/index.php/home-page-v2/residency-program-services/2023-ncope-education-summit/>
2. "AAMC Resident Readiness Survey Project." AAMC, 2024, <https://www.aamc.org/data-reports/students-residents/report/rrs-project>

#FP22: Innovate, Collaborate, Educate. The Interprofessional Approach to O&P Education

Authors: Lisa Abernethy, MSPO, CPO, LPO, Ashley Mullen, PhD, MSAT, CPO LPO, Lauren Szot, PT, DPT, Jeremy Sherman, MS, CPO, LPO

Abstract**Introduction**

Interprofessional education (IPE) fosters collaboration in healthcare; however, there is minimal research that has assessed its impact on prosthetist-orthotist (PO) and physical therapy (PT) students. Research has noted discrepancies in role awareness between physical therapists and prosthetist-orthotists [Kenworthy, 2022], which highlight the need for improved interdisciplinary collaboration.

Objectives

This project aimed to create and assess IPE activities between a prosthetist orthotist and a physical therapy education program. The goal was to determine the impact of these IPE activities on students' interprofessional views.

Methods

The PT and PO programs conducted curricular events twice a year over two years, during which students collaboratively evaluated patient models using orthotic or prosthetic devices. Students were also required to complete a pre- and post-survey assessing their interprofessional attitudes and biases using the Readiness for Interprofessional Learning Scale (RIPLS) and the Interprofessional Attitudes Scales (IPAS). Pre- and post-RIPLS and IPAS scores were analyzed for each discipline (PT or PO) using a Wilcoxon signed rank test.

Results

For the entire group, there was a statistically significant improvement in the 'teamwork' and 'collaboration' sub-scales of the RIPLS. There was also a significant improvement in the 'teamwork' subscale of the IPAS. Additionally, PO students showed a significant improvement in the 'bias' subscale of the IPAS. All groups demonstrated more positive views in the post-survey. Faculty and students gave feedback that supported continuing IPE experiences.

Conclusion

These IPE curricular experiences had a positive impact on the interprofessional views of both PT and PO students. Future research should evaluate a longitudinal assessment of interprofessional views once students progress to the clinical education portion of their programs and/or enter practice.

Statement of Relevance

This ongoing study addresses a critical gap in the literature by evaluating the impact of interprofessional education between prosthetist-orthotist and physical therapy students. It highlights the potential for improved collaboration between these healthcare disciplines.

References

Kenworthy, S., Reno, A., & Reid, A. (2022). Perceived role responsibilities among physical therapists and orthotists. *Journal of Prosthetists and Orthotists*, 35(1), 12-18.

#FP23: Revision of National Prosthetic and Orthotic Educational Guidelines

Authors: David F. Rusaw, PhD, Jönköping University, Ingrid Skaaret, PhD, Oslo Met University

Tobias Goihl, MSc, Trøndelag Ortopediske Verksted, Linn Reed-Schwanborg, MSc, Sophies Minde Ortopedi, Christian Grant Hetland, CPO, Ortopartner

Abstract

Background

Educational guidelines are necessary to ensure the academic quality of health professional education. The International Society for Prosthetics and Orthotics (ISPO) Educational Standards, enacted in 2018, have served as a benchmark for many P&O education programs worldwide. Educational institutions and accreditation authorities often use these ISPO Standards as a quality assessment and improvement tool. Between 2018 and 2020, a collaborative effort led to the development and implementation of national educational guidelines for the prosthetic and orthotic profession in Norway. This initiative established consistent, high-quality P&O education guidelines. A revision timeline was established, but the process for revising the guidelines was not defined at that time. From 2023 to the present date, an ongoing process has been developed to evaluate the need for a full revision of the current guidelines.

Objective

This presentation aims to present and discuss the systematic development of a revision process for national educational guidelines for prosthetic and orthotic education in Norway.

Methods

A modified, 5-step guidelines revision process is being utilized to guide the revision of the original guidelines. The steps included in the process are:

- Identification of new relevant evidence
- Assessment of the requirement for an update
- Updating of the guidelines
- External review
- Publication

Results

A literature review of peer-reviewed P&O education research has been conducted, and the revision process is currently in the second step (assessment of the requirement for update). In this step, stakeholders (industry, clinical personnel, employers, students) are engaged through a series of focus groups to systematically establish whether a need for revision exists. If a full revision is deemed necessary, it will be completed by June 2025.

Conclusion

A systematic approach to educational guideline revision is possible, using established methods from clinical guidelines. This process ensures the continuous improvement of educational standards to meet the evolving needs of the profession.

Statement of Relevance

Many institutions have guidelines that assist in establishing appropriate content and structure for P&O education. Often, these guidelines lack sufficient follow-up and revision protocols to maintain quality over time. This presentation will discuss one specific strategy for addressing the revision process from a Norwegian perspective, with potential broad interest outside of this context.

References

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#FP28: Continuing Professional Development in Prosthetics and Orthotics in Thailand: Past, Present, and Future Perspectives

Author: Sirirat Seng-iad

Abstract**Background**

Continuing Professional Development (CPD) in healthcare, as a lifelong learning process, is essential to ensure the ongoing proficiency and effectiveness of healthcare professionals. Similarly, in the field of Prosthetics and Orthotics (P&O), CPD is considered a fundamental element for P&O professionals. In Thailand, following the 2019 reform of the Law on Standards for Thai Prosthetics and Orthotics Practice, Thai Certified Prosthetists and Orthotists (CPOs) are now required to demonstrate competency through CPD activities. Thai CPOs must engage in CPD activities and achieve a minimum CPD score every five years to remain qualified. However, the extent of CPD participation among P&O professionals in Thailand has not been thoroughly investigated.

Objective

This study explores the context of CPD in P&O professionals in Thailand, highlighting key milestones, achievements, challenges, and the future direction of professional development.

Methods

This project employs a retrospective approach and narrative analysis, involving document review, analysis of past CPD activities, and interviews with key stakeholders.

Expected Results

Currently, this project is in its data analysis phase. The expected findings will provide an overview of CPD in P&O professionals in Thailand, including milestones, CPD activities from 2019 to the present, and significant insights into the impact of CPD on P&O professionals. The study will also explore CPD opportunities, emerging trends, and future directions for P&O professional development.

Conclusion

This study will offer valuable insights into the past, present, and future of CPD for P&O professionals in Thailand. The findings will be beneficial for effectively planning and implementing CPD programs that meet the needs of Thai CPOs, ultimately contributing to enhanced patient care and outcomes.

Statement of Relevance

This abstract highlights the relevance of the study to the GEM 2024 theme of "Innovate. Collaborate. Educate.," particularly in the area of continuing education and professional development for P&O professionals.

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#FP33: Developing an Evidence-based Credentialing Examination; The Story of Orthotics Prosthetics Canada (OPC)

Authors: Linda Laakso MSc CO(c) FCBC and Carla Reimer BSc CO(c) FCBC

Abstract**Background**

The credentialing of orthotic and prosthetic practitioners in Canada has a long-standing history of entry-to-practice Certification Examinations administered by the Canadian Board for Certification of Prosthetics and Orthotics (CBCPO), now Orthotics Prosthetics Canada (OPC). The examinations were developed by Subject Matter Experts who defined and administered the content of the six-hour written and two-day oral and practical examinations.

In 2014, CBCPO identified the need to transition the examinations to a more reliable, valid, and legally defensible format based on contemporary practice in the orthotic and prosthetic profession in Canada, using current principles of educational testing and credentialing.

Objective

This presentation will outline the process of developing new entry-to-practice credentialing examinations for orthotic and prosthetic practitioners in Canada.

Method

In 2014, CBCPO employed professional credentialing services to guide the following processes:

- Conducting a practice analysis to delineate and validate the domains of practice, specific tasks performed, and associated knowledge and skills required.
- Developing defensible test specifications and a blueprint for the new entry-to-practice examinations.
- Conducting a gap analysis, or crosswalk, from the traditional examinations to the new specifications.
- Writing and developing new multiple-choice written exams and practical Objective Structured Clinical Examinations (OSCEs).
- Implementing standard setting practices.

Results

This transition ensured the new examinations were based on contemporary professional practice and educational testing standards, making them more reliable and defensible.

Conclusion

The presentation will provide an overview of the credentialing process for orthotic and prosthetics practitioners in Canada. It will offer insight into the steps taken to develop evidence-based examinations that reflect modern practices, serving as a case study for other governing, credentialing, and standards bodies.

Statement of Relevance

This presentation will be of interest to governing, credentialing, and standards bodies, as it offers a case study of one method for credentialing orthotic and prosthetic professionals. The experience shared may benefit others who are on the pathway to developing entry-to-practice or credentialing examinations.

References

N/A

#FP34: IOPS Alumni Hub: A Continuation of IO&PS Education

Authors: Tereza Lilingova

Abstract

Background

One of the biggest challenges our graduates face is integrating into their local workplace, which diminishes their ability to implement high standards of patient care.

Objectives

To position IO&PS as a trusted partner in O&P education that:

- Supports graduates through the integration process and beyond
- Maintains graduates' curiosity and excitement about their craft
- Supports graduates' success in their chosen career
- Inspires graduates to explore professional development and education as a pleasure, not a demand

Methods

We created a community engagement platform, the “IO&PS Alumni Hub,” as a continuation and extension of the IO&PS education. The platform offers professional support to graduates to help them provide top-quality patient care worldwide. Graduates benefit from the following features:

- “Who is who” = graduate database
- “O&P Forum” = space for professional exchange (patient cases)
- “Knowledge Base” = resource center
- “Event Calendar” = O&P-related events, trainings
- “Early-bird notifications” = training programs, registrations
- “Spotlight” = made-to-measure webinars

Results

- Platform went live in January 2023
- 47 graduates and 13 trainers/O&P experts involved
- Forum posts: 25 (O&P-related)
- Life feed posts: 44 (general topics)
- O&P live events (Spotlight): 7

Challenges

- Creating relevant O&P content
- Engaging O&P professionals
- Encouraging more graduate participation

Future Steps / Call to Action

We propose to hold “Editorial Meetings” in collaboration with other O&P facilities to enhance content and engagement on the platform.

Statement of Relevance

As online education continues to gain prominence, the need for a dedicated alumni community platform becomes increasingly relevant for graduates' continuous professional development.

References

- Hivebrite: <https://hivebrite.io>
- IOPS Alumni Hub: <https://iops-alumni.com>

#FP35: Analysis of the Residency Experience in Transfemoral Prosthetics

Authors: Ashley Mullen, PhD, MSAT, CPO, Denise Hull, MS, CPO, Sally Kenworthy, MPO, CPO, PhD

Abstract

Background

As part of the requirements for certification in Orthotics and Prosthetics, a clinical residency must be completed. Currently, there has been minimal analysis of residency data that could demonstrate the presence or lack of consistency between each resident's experiences. Analysis of data and the standardization of the residency experience may offer a pathway toward consistency in entry-level practice, as transfemoral prosthetic competency is one of the most difficult to achieve.

Objective

The objective of this study was to quantify the experience of residents with respect to transfemoral patient care.

Study Design

Retrospective data analysis.

Methods

Data were collected from the NCOPE tracker for residents who completed an integrated residency between 2018-2021. Patient appointment dates, appointment types, patient age, gender, diagnosis (ICD-10 code with descriptor), device type, and resident engagement levels (observer, assistant, independent) were analyzed to determine trends, variations, and comparison with the American Board for Certification in Prosthetics, Orthotics (ABC) Practice Analysis.

Results

Residents saw a median of 112 (IQR = 61) transfemoral patient encounters, with a median of 17.8% (IQR = 17.2) logged as independent encounters. Results were consistent across three cohorts of residents. Comparison with the ABC Practice Analysis indicated differences in appointment types experienced during residency versus clinical practice.

Conclusion

This study provides a baseline for developing transfemoral prosthetic competency during an integrated, combined Orthotics and Prosthetics residency. Further analysis is required to evaluate other residency models and factors that affect the attainment of clinical competence and the development of skills in transfemoral prosthetic care.

Statement of Relevance

Documentation and comparison of the residency experience may offer a pathway toward developing consistency in residency training and continuation into entry-level practice.

References

1. National Commission on Orthotic and Prosthetic Education. Standards of accreditation for the orthotic/prosthetic residency training program. 2018.

Educate

#FP3: Teaching and Assessment Methods to Increase Student Engagement and Performance in an Online Course

Author: Mindy Thorpe

Abstract

Background & Objective

Online education can often be reduced to a ‘plug and play’ experience where students watch recorded lectures, participate in discussion boards, and complete online assessments. However, research suggests that increased student-faculty and student-student interaction, combined with low-stakes formative assessments, leads to improved learning and retention. Engaged students tend to experience greater academic success.

This study evaluated a Special Topics course taught in 2023 to students at Northwestern University. The course incorporated new assessment strategies and opportunities for student interaction, following the Universal Design for Learning (UDL) principles and improved accessibility via Canvas. Four learning diary assignments were integrated throughout the course to encourage student reflection on their learning. Data from the Course Management System (Canvas) and the video platform (Panopto) were analyzed to assess whether student interaction and performance increased.

Methods

A mixed-methods approach was employed to collect both quantitative and qualitative data. These results were compared to measure student interaction, engagement, and performance. Student feedback and reflections were gathered to understand how the new features impacted their perceptions of learning. User analytics were examined to assess differences in student interaction. Additionally, data sets from Canvas and Panopto were compared to explore the correlation between engagement and performance.

Results

Quantitative data proved inconclusive due to various factors influencing the analytical data from Canvas and Panopto. However, the qualitative feedback was insightful. The Learning Diaries provided valuable reflections on how students perceived their learning experience. Students indicated that they benefitted from increased engagement opportunities and appreciated reflecting on their learning through the diaries.

Conclusion

Students reported improved engagement and learning experiences through the incorporation of UDL principles and Learning Diaries. These strategies appeared to capture students' interest, facilitate connections to course materials, and foster collaboration. As online learning continues to expand, it is crucial to evaluate how course design and engagement strategies influence student outcomes.

Statement of Relevance

As online learning becomes more prevalent, it is vital to assess how course materials are presented and how this affects student performance. By sharing what works and what doesn't, educators can enhance the quality of online education for all learners.

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#S4: Low-Tech, High-Impact Teaching Tools to Enhance Foundational O&P Principles

Author: Sally Kenworthy, PhD, MPO, CPO, LO, Jeremy Sherman, MS, CPO, LPO, Ashley Mullen, PhD, MSAT, CPO, LPO, Megan Glahn, MS, CPO, LPO, Amandi Rhett, MS, CPO, LPO

Abstract

Background

Teaching tactile and 3-dimensional skills in the digital age presents a unique challenge for O&P educators. While online simulation and digital learning tools may feel comfortable to modern students, they are not always readily available or necessary to effectively teach key O&P principles.

Objective

The objective of this symposium is to review the low-tech, high-impact teaching tools developed by the faculty at Baylor College of Medicine's Orthotics and Prosthetics Program. These tools aim to simplify complex concepts such as transfemoral socket biomechanics, harnessing and cabling principles, scoliosis biomechanics, and orthotic knee joint alignment troubleshooting.

Format

Each speaker will present a specific O&P principle taught in their course, along with the accompanying low-tech tool used to supplement the teaching of the concept. All featured teaching tools can be easily created with items and equipment commonly found in O&P laboratories. Attendees will receive templates and written instructions to recreate these tools in their classrooms.

Statement of Relevance

The purpose of this symposium is to enhance student learning by providing O&P educators with simple and effective teaching tools that are accessible in nearly any O&P education environment.

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#FP8: The Impact of Academic Perspectives of Disability on the Success of Students with Disabilities Author: Adam Holden

Abstract

Background

Despite policy reforms increasing their enrolment in Higher Education (HE), students with disabilities (SwD) still have lower program completion rates compared to their non-disabled peers. This affects workforce diversity, limiting the benefits that clinicians with lived experience of disability can bring to the Prosthetics & Orthotics (P&O) profession. To create equitable outcomes for SwD, HE institutions promote inclusive classroom practices. However, while academics support these practices, there is often a disconnect between the intent for inclusion and its practical implementation (Nieminen, 2022; Bunbury, 2020). This dissonance may indirectly contribute to barriers facing the very students they aim to help. Understanding academics' perspectives on SwD is crucial to exploring this issue.

Objective

This research aimed to explore academics' understanding of inclusive practice implementation and their perspectives on students with disabilities. The research question was: "What are the perspectives of Australian P&O academics regarding students with disabilities, and inclusive education practices?"

Methods

Five P&O teaching academics from two Australian universities participated in semi-structured interviews, utilizing an adaptation of Bunbury's (2020) Interview Guide. The interviews were transcribed, and content analysis was conducted to identify key themes (Bunbury, 2020).

Results

Preliminary analysis identified several key themes, including:

- Institutional workload pressures stifling pedagogic innovation.
- Central accessibility support services reinforcing 'othering' narratives for SwD.
- Recognition of a dissonance between the inclusive intent of academics and practical implementation.

Conclusion

This study highlights the challenges in creating truly inclusive environments for SwD. While innovative approaches can drive equitable solutions, a lack of time and resources makes it difficult for academics to implement these changes. The impact of these findings may help promote equitable outcomes for SwD, ultimately leading to increased representation of clinicians with disabilities in the P&O workforce.

Statement of Relevance

The findings are relevant to higher education educators who aim to promote equitable outcomes for all students, including those with disabilities. This is particularly pertinent to the P&O field, where clinicians with disabilities can bring valuable perspectives to the workforce.

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#FP9: Design and Fabrication of Artificial Stumps of Amputated Limbs for Prosthetics Education Author:
Octavio Diaz-Hernandez

Abstract

Background

Teaching the manufacture of prostheses for amputees is essential, particularly in populations with a high incidence of limb amputations due to medical conditions like diabetes or trauma. Current orthotics and prosthetics courses require the participation of patient models who agree to assist students during practice, such as in “Mold Taking” sessions. However, this often requires patients to sit or stand for extended periods, and molds must be taken multiple times to accommodate all students.

Objective

The objective of this project was to design and develop realistic anatomical simulators of stumps (artificial stumps) to aid in teaching the manufacture of prosthetic sockets and to improve students’ practical skills.

Method

The creation of artificial stump models focused on maintaining bone and muscle references crucial for proper mold-taking, a key aspect in producing effective prosthetic sockets. Various types of stumps were developed, including transhumeral, transradial, transfemoral, and transtibial amputations, with continued work on models featuring disarticulated knees, humeri, and partial hand or foot amputations.

Results

The use of these artificial stumps allows students to practice essential procedures, such as taking measurements and molds or applying bandages, multiple times without inconveniencing real patients, who would otherwise endure long waiting times or discomfort. Students thus gain crucial experience before working with live patients.

Conclusion

The artificial stumps will significantly benefit the prosthetics and orthotics program at our University by enhancing student learning and practice in socket design and manufacture. The development of this teaching tool is crucial for improving the practical training of future professionals who will work to reintegrate amputees into society through effective prosthetic solutions.

Statement of Relevance

The bachelor's degree program in orthotics and prosthetics at our university will benefit immensely from the use of artificial stumps. These simulators will enhance students' learning experience by allowing them to practice designing and fabricating sockets without inconveniencing real patients. Research and education in this field are critical to improving the quality of life for amputees and helping them reintegrate into the workforce.

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#FP14: Evaluation of Online Learning During COVID-19 of Prosthetics Orthotics Schools in Indonesia and South-East Asia: Students and Educators' Perceptions

Authors: Suci Anatasia Nazier BSc. PO, M.Sc, Raden Achmad Candra Putra BPO, MSc, Sheyla Faulin, B.Sc.PO

Abstract**Background**

The COVID-19 pandemic precipitated a swift shift towards online learning in various educational domains, including allied health higher education. Recognizing the necessity of evaluating learner, educator, and institutional needs, a study on digital learning in vocational education emphasized the importance of preparatory assessments for this transition. However, research on Prosthetics and Orthotics (P&O) education, a vital vocational field affected by the pandemic, remains limited. There is a pressing need for robust research in this area to enhance its quality and stimulate global discourse. Therefore, evaluating digital learning in P&O education is imperative to prepare for the advent of blended learning.

Objective

This study aims to evaluate online learning in Prosthetics and Orthotics education during lockdown periods in Indonesia and Southeast Asia, focusing on the perceptions of students and educators.

Methods

A descriptive quantitative approach utilizing online surveys was employed. Participants comprised students and educators from P&O schools across Indonesia, Thailand, Cambodia, Myanmar, and Sri Lanka. Informed consent was implied upon the completion and return of the survey questionnaire. A Likert scale questionnaire was developed to evaluate the perceptions of students and educators regarding online learning during the pandemic, encompassing both its advantages and drawbacks.

Results

The findings revealed that the majority of students and educators agreed that online learning effectively facilitated the acquisition of theoretical knowledge. However, concerns were raised about compromised learning outcomes for practical and clinical skills. Both groups identified flexibility in terms of learning environment and time as a notable advantage, while technological issues emerged as a common downside.

Conclusion

While online learning appears effective for theoretical components of P&O education, practical and clinical skills development may be hindered. Blended learning could offer a viable solution, but thorough analysis and consideration of potential barriers are essential for successful implementation in the future.

Statement of Relevance

The study examines the outcomes of online learning in Prosthetics and Orthotics education amidst the COVID- 19 pandemic, particularly in Indonesia and Southeast Asia. It aims to enhance P&O education quality by understanding students' and educators' perceptions, facilitating global discourse, and preparing for future blended learning integration.

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#FP24: Enhancing Student Learning and Engagement: Evaluating the Flipped Classroom Experience at Northwestern University's Prosthetic-Orthotic Center

Author: Michael Cavanaugh, MSHI, CPO & Mindy Thorpe, MS-IDS, CPO

Abstract

Background & Objectives

The flipped classroom is a novel, student-centered learning experience designed to maximize the benefit of in-person class time. In a flipped classroom, students engage in hands-on activities, interact with patient models, or participate in small group discussions with faculty during class, allowing them to maintain an active learning role. Northwestern University's Prosthetic-Orthotic Center (NUPOC) adopted this model during the pandemic, shifting from traditional lectures to a flipped classroom format. The goals were to provide exposure to content prior to in-person class, allowing class time to focus on higher-level cognitive activities that enhance both understanding and retention of material.

Method

Qualitative data was collected from both students and faculty during the transition to the flipped classroom format. This feedback was compared to feedback from traditional in-person lectures before the pandemic.

Results

Successes of the flipped classroom include students feeling better prepared for live clinical interactions by watching lecture and demonstration videos beforehand. Students appreciated being able to re-watch demonstrations even after the course ended, which ensured uniform learning experiences across the cohort. Additionally, students benefited from revisiting online content after in-person activities.

Challenges included the need for students to be effective time managers and motivated self-learners. Faculty needed to continuously evaluate content to ensure it adhered to best practices.

Conclusion

Student surveys indicated that the flipped classroom improved learning outcomes. Existing research supports that flipped classrooms have great potential to increase student engagement and create active learning environments, which aligned with NUPOC's experience. As a result, the flipped classroom has been further integrated into the NUPOC curriculum.

Clinical Applications

Increased engagement in learning activities may improve learning and preparation for residency. Additionally, students may develop time management and organizational skills that are essential for success in the clinical environment.

References

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#FP25: Enhancing University Students' Engagement in Studying Assistive Technology by Case-based Active Learning: A Pilot Study in Hong Kong

Author: Christina Zong-Hao Ma

Abstract

Background

The demand for assistive technology professionals is increasing with the growing global population, and there is a corresponding need for well-designed higher education programs in this field.

Objective

This study aimed to design and implement a case-based active learning approach within an undergraduate course related to assistive technology in Hong Kong and assess its impact on enhancing student engagement.

Methods

Twelve multimedia patient case dossiers were created, focusing on six major physical disabilities. Students enrolled in the "Rehabilitation Engineering and Assistive Technology" course were instructed to utilize the case dossiers to facilitate their learning, understanding, and application of rehabilitation and assistive technologies for disabled individuals. The Revised Two-Factor Study Process Questionnaire was employed to evaluate the student feedback on their learning experience, engagement, and learning approaches (i.e., Deep Approach, DA; and Surface Approach, SA) both before and after the course.

Results

Students generally responded positively to the case-based active learning approach, with a slight increase in average DA scores observed post-course. Additionally, a significantly moderate positive correlation was found between the DA-SA value and students' individual written report grades, while a significantly moderate negative correlation was identified between SA scores and students' individual report grades ($p < 0.05$).

Conclusion

This study identified a positive student response to the implementation of the innovative case-based active learning approach. The approach demonstrated a promising effect on student engagement, with the individual report assignment proving to be a suitable tool for assessing engagement. It is recommended that educators consider incorporating such student-centered, case-based active learning approaches, along with structured content and aligned assignments, to enhance student engagement, academic performance, and future career development in the field of assistive technology. Future studies will further explore the impact of this approach and refine its design and implementation.

Statement of Relevance

This submission focuses on the design and implementation of a case-based active learning approach within an undergraduate course related to assistive technology in Hong Kong and assesses its impact on enhancing student engagement. Some of the students in the course are P&O students.

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#FP26: Clinical Expert to Classroom Champion: Empowering the Next Generation of Educators Author: Jeremy Sherman

Abstract
Introduction

Healthcare professionals transitioning from primarily clinical practice into an educator role face various challenges. The diversity of pathways for this transition makes it often unstructured and informal. The training of professionals making this transition is typically clinical, with minimal education-focused training, leading to feelings of being unprepared or “fraudulent” in their new role. Many seasoned healthcare educators describe their transition as a serendipitous process of “figuring it out” along the way.

Objectives

This scoping review aims to explore the extent to which the “clinician to educator” transition has been researched in healthcare, identify potential barriers or risks associated with this transition, and determine whether there are generalizable best practices to promote success.

Methods

Online databases (Medline, Embase, Web of Science) were searched without restrictions on the year of publication. The search parameters included terms such as ("transition" in proximity to "educator" or "teach" or "instruct") and ("health" or "care" or "medic") and ("identity"). After deduplication, abstracts were screened against inclusion and exclusion criteria, followed by a citation search of the remaining articles.

Results

A total of 36 publications were found following the database search and deduplication. Screening for relevance reduced this to 10 articles. A subsequent citation search found 6 additional articles, resulting in a final total of 16 relevant articles.

Discussion

The review of the 16 articles is ongoing and will be completed prior to the GEM. Preliminary findings highlight the need for structured pathways and support mechanisms to ensure a smooth transition from clinician to educator. Key strategies identified include establishing communities of practice and incorporating educators' beliefs and values into faculty development activities. These strategies are essential to mitigating identity threats and fostering a successful transition.

Statement of Relevance

The myriad of challenges associated with transitioning from a prosthetist-orthotist to an educator underscores the critical need for structured pathways and support mechanisms to facilitate this shift. Healthcare professions have proposed solutions, including detailed orientation, mentorship, and faculty development programs, which can be mirrored in O&P.

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#FP30: The Most Urgent Challenges to Sustainability of Prosthetic and Orthotic Education Programs Authors: Sue Spaulding, L/CPO, University of Washington, Jaclyn Megan Sions, PT, DPT, PhD, University of Delaware, Jennifer Block, L/CPO, Oklahoma State University, Robin Seabrook, National Commission on Orthotic and Prosthetic Education

Abstract

Background

Sustaining prosthetic and orthotic (P&O) education programs to meet workforce demands is an ongoing challenge. Developing P&O skills requires close supervision, project-based instruction, and timely feedback, leading to higher overhead costs compared to other allied health professions. To meet the growing demand for P&O care, effective, affordable, accessible, and sustainable education programs are essential for all P&O professionals.

Objective

This study aims to identify challenges affecting the sustainability and vitality of P&O education programs, specifically addressing future workforce and practice demands in the United States.

Methods

A grounded theory approach was employed in survey development and analysis to identify the strengths and challenges to sustainability. The survey was based on the Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis. Survey results were shared during the 2023 NCOPE Education Summit, where participants further refined and prioritized identified challenges. A purposive sampling matrix was used to ensure diversity and capture a wide range of perspectives. Participants were selected from academic, industry, fabrication, and clinical practice settings, representing various levels of experience.

Results

Fifty-two individuals completed the pre-summit survey, and forty-nine attended the Education Summit (mean age: 48.5 years; age range: 25-70 years; 39% female). Most participants were orthotist-prosthetists (78%).

Nineteen worked primarily in direct patient care or fabrication, while another nineteen worked in a P&O education program. The most pressing challenge for each P&O professional role—Prosthetist-Orthotist, Resident, Technician, and Assistant—was unique. Overall, the two most urgent challenges identified were the need to enhance the value of education and certification for Technician programs and to improve communication between education programs and clinical practice.

Conclusion

A diverse group of P&O stakeholders identified and prioritized challenges to the sustainability and vitality of P&O education programs. Strengthening Technician programs and improving communication between P&O educators and practitioners in clinical and fabrication settings are critical for the future of the profession.

Statement of Relevance

The identification and prioritization of key challenges, such as the need for greater support of Technician education programs and enhanced communication between P&O educators and practice providers, will guide future strategic planning and initiatives aimed at addressing the most pressing issues for P&O education.

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#FP31: Comparing the Impact of Online Learning During the COVID-19 Pandemic and Face-to-Face Learning After the COVID-19 Pandemic on Clinical Practice

Author: Yağmur Altun

Abstract

Background

Istanbul Medipol University Orthotics and Prosthetics department offers a 4-year undergraduate program. In the 4th year, students participate in clinical practice within orthotic prosthetic clinics. The COVID-19 pandemic impacted educational processes worldwide. With the onset of the pandemic, the university transitioned to online education for all except 4th-year clinical applications. It was anticipated that the sudden shift to online learning could result in both positive and negative outcomes, potentially affecting students' clinical practice in their final year.

Objective

This study aims to compare the clinical practice experiences of students who engaged in online education during the pandemic with those who participated in face-to-face education after the pandemic.

Methods

The study involved 23 participants, 10 of whom were online education students during the 2021-2022 academic year, and 13 were face-to-face education students in the 2023-2024 academic year. Participants responded to a questionnaire via Microsoft Forms, with analysis covering three sections: challenges encountered during clinical practice, the relationship between coursework and clinical practice, and expectations after graduation. Data were analyzed using Kruskal-Wallis and Chi-Square Tests.

Results

The study revealed that the clinical practice experiences of students who undertook online education and those who attended face-to-face education were similar. There were no statistically significant differences between the two groups ($p > 0.05$).

Conclusion

The clinical experiences of students in both the online and face-to-face learning environments were comparable. These results suggest that students were not significantly impacted by the challenges of online education. In fact, the ability to record online lessons may have enhanced accessibility and contributed positively to the learning process.

Statement of Relevance

This study examines the effects of online and face-to-face education on clinical practice experiences in orthotic and prosthetic education. The comparison of these two methods provides valuable insights to improve educational practices in the field.

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#FP40: Should You Get a Doctorate? It Depends on**Motive Author:** Joshua Utay

Abstract**Introduction**

I anticipated that embarking on an executive doctorate in professional leadership (EdD) with an emphasis on health science education would enable me to become a more effective educator. But did it work, and should others in the Prosthetics & Orthotics (P&O) field consider doing the same?

Background

The Orthotics and Prosthetics profession is defined by the provision of services and devices that are unique within healthcare. The quality and nature of O&P services vary considerably based on a practitioner's training, experience, available resources, and the culture in which they learned and practice. As a result, the consistency of O&P services can be unpredictable and difficult to compare across different clinical environments, times, and individual practitioners.

Purpose

The purpose of this study is to characterize the culture of the O&P profession using ethnographic analysis.

Methods

An ethnographic approach was employed to understand the culture of O&P clinical practice. A series of semi-structured interviews were conducted with orthotists and prosthetists by a participant-observer, and the responses were analyzed for recurring themes.

Results

The study revealed a modern profession emerging from an ancient trade, defined by three key pillars:

1. The increasing diversity and professionalism of practitioners.
2. Technological innovations allowing practitioners to fit more advanced devices with less personal involvement in fabrication.
3. The iterative rise of educational standards, driven by a growing focus on evidence-based decision-making in healthcare.

Conclusion

This research offers a detailed portrait of the culture of O&P practice and better prepares new entrants to the profession. Recommendations include advocating for the establishment of a Center for O&P History and Culture, analyzing the language and behavior specific to O&P clinicians, and disseminating the results to improve educational frameworks. While completing my EdD provided me with valuable tools for educational scholarship and met personal and professional goals, the onus is on me to apply them in order to become a more effective educator.

Statement of Relevance

This presentation is relevant to ISPO educators by:

1. Offering a detailed example of a viable pathway to earning a doctorate in education (EdD) tailored to the P&O profession.
 2. Presenting the results of an ethnography of O&P practitioners, which invites further studies in various settings around the world to compare educational experiences and how they shape the culture of the profession over time
-

References

1. Utay, Joshua B. (2022, Dec.). *An Ethnographic Study of Orthotist-Prosthetist Culture: A thesis submitted to the Curriculum and Instruction Department, College of Education of the University of Houston in partial fulfillment of the requirements for the degree of Doctor of Education in Professional Leadership*. Hausman, R., Chair; McNeil, Sara, Co-Chair.

#FP43: Exploring Competencies for Mobility Assistive Product Provision

Author: Louise Puli

Abstract

Background

As global demand for mobility assistive products rises, there is an increasing need to ensure that professionals, including prosthetic and orthotic professionals, possess the necessary competencies to deliver safe and effective services. However, the competencies required for mobility assistive product provision are not uniformly defined across education programs and professional frameworks, creating gaps in training and service quality.

Objective

This presentation aims to present a recent global environmental scan of competencies for mobility assistive product provision, identifying key areas for improvement and proposing a potential pathway for defining these competencies so that they can be embedded into curricula.

Methods

An environmental scan of global competency frameworks related to assistive product provision was conducted, focusing on mobility. Resources were compared to the World Health Organization's Rehabilitation Competency Framework (RCF) to identify gaps and inconsistencies. Consultations with P&O educators and professional bodies further informed the analysis.

Results

Fourteen resources outlining competencies for mobility assistive products were identified, highlighting significant differences in required education levels, competency domains, and curriculum content. While key service steps such as assessment, fitting, and follow-up were common across resources, important competencies like clinical reasoning, cultural competence, and person-centered care were inconsistently integrated.

Conclusion

Understanding the core competencies required to provide mobility assistive products is crucial to improving the training and practice of professionals who provide them, including prosthetists/orthotists. This presentation will outline recommendations for next steps to define these competencies so that they can be embedded into education programs, focusing on harmonizing global standards and preparing future professionals to meet the growing demand for mobility assistive products.

Statement of Relevance

This abstract addresses the "Educate" theme by exploring the specific competencies needed to deliver high- quality mobility assistive product services, offering valuable insights for educators.

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Annex 5 – GEM Subcommittee and Local Organising Committee

Below is a list of the individuals that constituted the Prosthetics and Orthotics Global Educators Meeting (GEM2024) Sub-Committee and Local Organising Committee, who worked hard to make the event possible.

GEM2024 Sub-Committee

Name	Organisation
David Rusaw, Sweden (Chair)	Jönköping University, Sweden
Mary Scott, UK (Co-Chair)	Retired
Dan Blocka, Canada (Member)	George Brown College Boundless Bracing Toronto, Canada
Christian Schierf, Germany (Member)	Human Study e.V., Germany

Local Organising Committee

Name	Organisation
Ashley Mullen (Chair)	Baylor College of Medicine, Houston, USA
Megan Castille (Member)	Baylor College of Medicine, Houston, USA
Sally Kenworthy (Member)	Baylor College of Medicine, Houston, USA

Also thanks to the:

- Representatives from Sirindhorn School of Prosthetics and Orthotics (SSPO), Mahidol University, Thailand; and
- ISPO Head Office staff

who were involved in the planning and implementation of GEM 2024.

Thanks to you all
for a successful
GEM 2024
and hoping to work with you
at GEM 2026 in
Bangkok, Thailand
in March 2026