Human Orthotic and Prosthetic Education

Orthotics and Prosthetics Education in Latin America and the United States

IPRO 309

IPRO It takes a team!

INTERPROFESSIONAL PROJECTS PROGRAM

Orthotics & Prosthetics (O&P)

- What is an Orthosis?
  - External device applied to control or enhance movement or to prevent movement or reduce deformity
  - Example: knee ankle foot orthosis (KAFO)

- What is a Prosthesis?
  - Artificial replacement of a body part
  - May be internal or external
  - Example: above the knee (AK) prosthesis

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International Society of Prosthetics and Orthotics (ISPO) Categories

- Category I: Orthotist/Prosthetist, Orthopaedic Engineer
- Category II: Orthopaedic Technologist
- Category III: Orthopaedic Technician

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ISPO Categories

4-5 year university degree

3-year college level - nondegree program

High School or Junior College

	Fabrication	Direct Patient Care	Research and Development
Category I	III	II	I
Category II	III	II	
Category III	III		

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Latin America – Relevant Facts

- Latin America has over 500 million people
- Estimated 2.5 million people need O&P treatment
- Approx. 50 ISPO certified &1500 uncertified practitioners
- Limited educational opportunities in O&P

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Project History

- Began spring 2006 with goal of finding solutions to high demand for O&P care in Latin America
- Past semesters focused on Category III

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Problem Definition

- Understanding differences between the ISPO categories in O&P
- Changing direction of past semesters from Category III to Category I
- Applying Constructivist Learning Theory to Category I*

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* "Piaget, Jean." Encyclopedia Britannica. 2008. Encyclopædia Britannica Online. 3 Nov. 2008 <http://search.eb.com/eb/article-9059885>.

Constructivist Learning Theory

- Benefits of Constructivist Learning Theory
  - Based on student's needs and learning styles
  - Self-discovery of important concepts
  - Connects real world problems with student inquiry
  - Increased motivation (students actively engaged)

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Team Approach

- Subgroups created to identify specific topics related to O&P Category I
- Came together as whole team in class to discuss how to implement these ideas into practical usage

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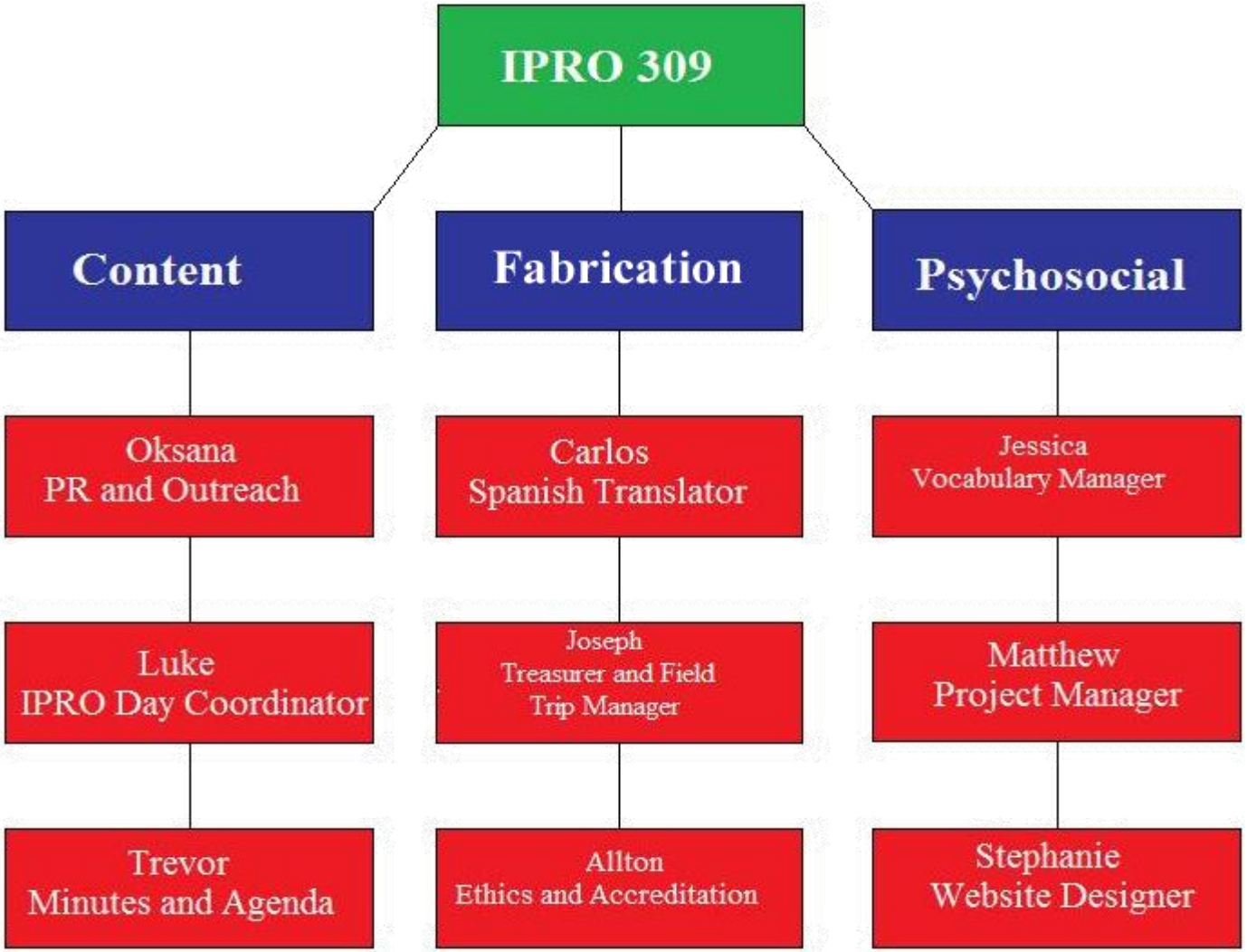
Team Organization



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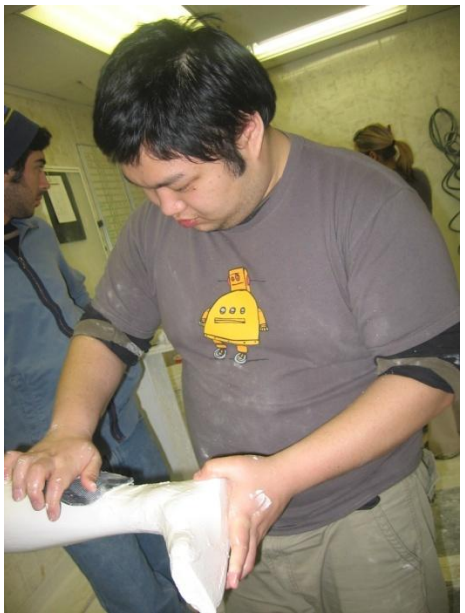
Fabrication Subgroup

- Integrate practical project-based learning within existing curriculum guidelines
- Researched Category I requirement for fabrication and materials technology
- Applied project-based learning to building model
- Lesson plans



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Psycho-Social Subgroup

- Emphasize patient-focused treatment
- Underline importance of project-based learning
- Basic outline for psycho-social course
- Flow chart and checklist to guide patient/ caregiver interactions

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Curriculum Subgroup

- Consolidate information from previous semesters
- Bridge gap between current work and previous semesters
- Research ISPO Category I curriculum
- Assist other subgroups with research and project development
- Create activity to help students understand challenges to patients' ADL and QoL

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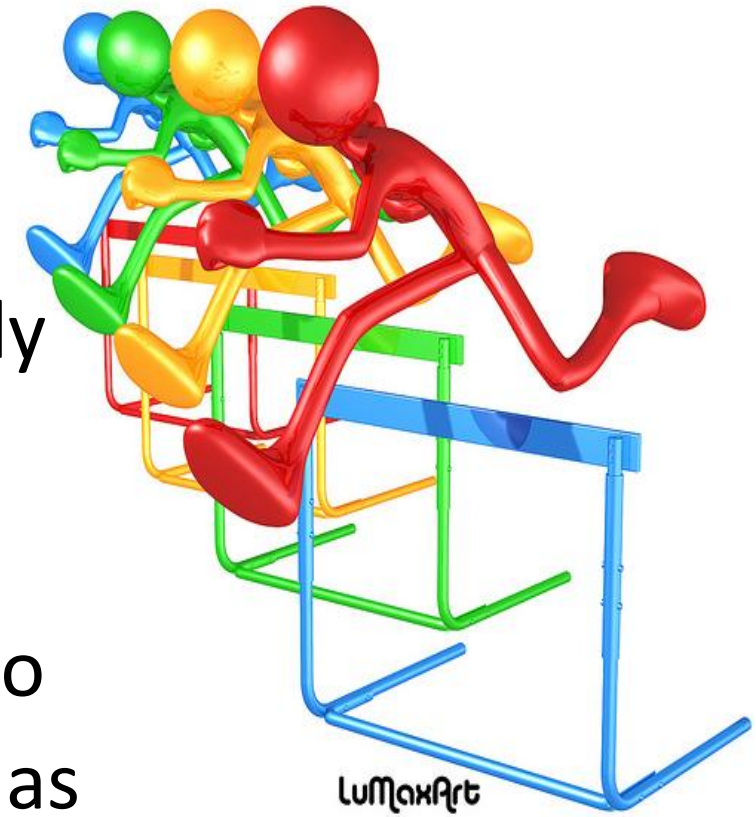
Obstacles Encountered

- Choosing a focus
- Finding relevant literature
- Team members have widely varied understanding of/ experience with O&P field
- Team members adjusting to student-centered learning as opposed to teacher-directed learning



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In-class Ethical Issues

- No patient interactions, so few issues
- Minor disagreements, used democratic approach

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Practitioner Ethical Issues

- Difficulty getting/understanding patient notes from other practitioners
- Prescription specifications
- Time limitations
- Treating patients of the opposite sex
- HIPAA

Based on an article from American Academy of Orthotists and Prosthetists 2005 journal of Proceedings, “Orthotics - Ethical Issues in the Profession of Orthotics: A Survey of Certified Orthotists and Orthotic Residents”

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Problem / Semester Objectives

- Show working example of student-centered learning that emphasizes relevant O&P concepts
- Create learning environment to expose students to ill-structured problems
- Understanding Category I of ISPO

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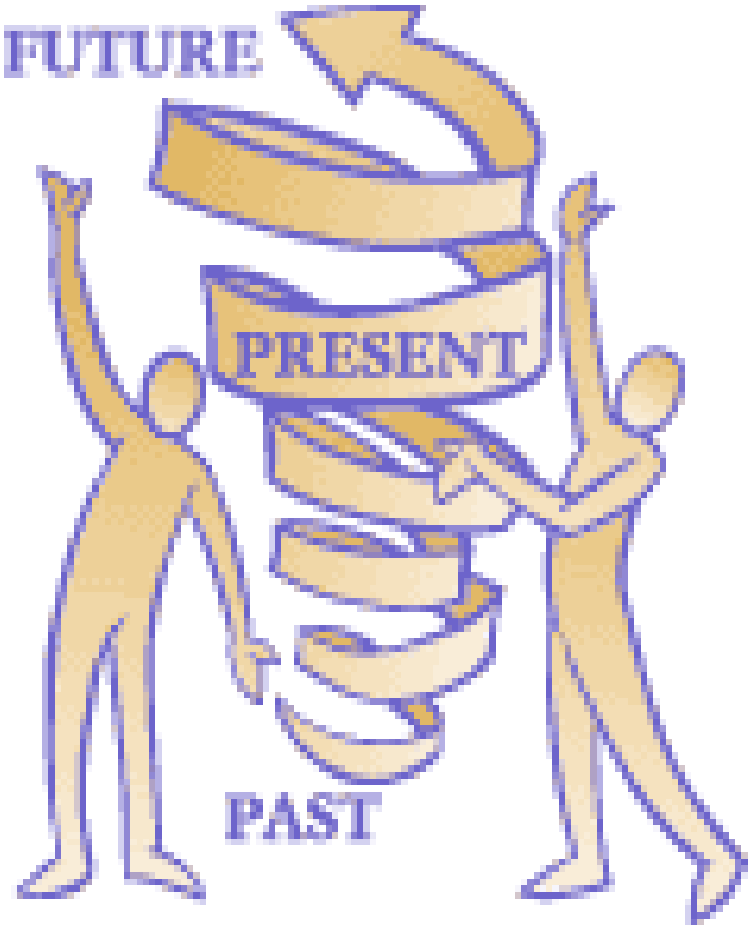
Monitoring Team Progress

- Sub-team members held each other accountable for progress
- Weekly updates in class
- Broke tasks down into manageable goals with specific deadlines



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Tasks Completed

- Learned about ISPO Category I
- Field trip to BioConcepts gave team hands-on experience with process of making orthotic device
- Learned about Constructivist Learning Theory through special guest speaker
- Applied ill-structured problem to educational task – helped us generate list of key questions

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Benefits to IPRO Approach

- Draw upon wide range of experiences
- Multi-disciplinary approach diversifies impact
- Solving real-world problems, not theoretical issues
- Experiential learning
- Enriches the academic experience

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Impact

- The ill-structured problem can be used cross-culturally because it is student-centered learning.
- Helps better prepare students for real-world situations.
- Potential to increase effectiveness of learning

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Major Accomplishments

- Developed in-class activity based on the ill-structured problem
- Developed flow chart and checklist to guide patient/caregiver interactions
- Made orthosis

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Conclusions

- Non-traditional teaching methods should be incorporated within existing ISPO Category I curriculum
- Psycho-social aspects of needing/using O&P device should be addressed

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Next Steps

- The next step for IPRO 309 is to delve further into methods of implementing student-centered learning into existing ISPO Category 1 curriculum

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Questions?

Colombia

- Population of 40+ million
- War against narcotics and terrorism
- Only country where land mines are still being planted
- Affects soldiers, women, and children

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