H.O.P.E

Human Orthotic and Prosthetic Education

ILLINOIS INSTITUTE OF TECHNOLOGY

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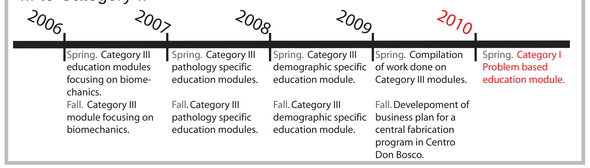
IPRO 309 began in the spring semester of 2006 to help Centro Don Bosco in Bogota, Colombia in becoming an International Society of Prosthetics and Orthotics (ISPO) accredited Category III program. Various material have been develop to further this goal and this semester the IPRO group decided to change the focus from Category III to Category I.



Definitions and Categories

Orthoses are devices that support or correct muscoskeletal deformities / abnormalities of the human body.

Prostheses are artificial extension that replaces a missing body part.

ISPO or International Society of Prosthetics and Orthotics is the international body which governs the profession of O&P.

Under ISPO, the profession is organized under 3 categories according to level of qualification and scope of practice.

Category III Are prosthetic /orthotic technician whose main duties are to fabricate and assemble O&P devices.

Category II Are orthopaedic technologist which performs the role of a Category I professional in regions where they are absent.

Category I Are prosthetist/orthotist which deal in all aspect of O&P care with an emphasis in patient care.

Goals and Objectives

The focus of this semester's IPRO 309 is on developing a learning module for ISPO Category I curriculum. The learning module will be presented as a project based classes.

Project based classes aimed to expose the students to real-life problems where finding a solution to the problem highly dependent on the practitioner's ability to ask the right questions.

The modules presented will be classes in fabrication and material study, and psychosocial.

These classes will be focusing on the patient's Activity of Daily Living (ADL) and Quality of Life (QOL). Each class will explore how students can address these two concerns.

Teaching a project based class will teach the student how to ask the right questions. Class activities will engage student in the learning process instead of just passively listening to a lecture.

Team Organization

group 1 : curriculum	group 2 : psychosocial	group 3 : Fabrication and material study
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Sub-group Goals and Objectives

Group 1 : To create the main project which the other sub group will base their classes on

Group 2 : To create Project-based psychosocial class

Group3 : To create Project-based fabrication and material study class

Group 1 : Curriculum

Getting out of a chair is a very basic task which greatly affects an individual's ADL and QOL. The group created an activity focused around getting out of a chair which allows the student to understand the hazards involved and proper procedure for a person with or without a disability.

By participating in this activity the students will be aware physically and intellectually of the simple task of getting out of a chair.

OUTLINE:

1. Students will start out with an introduction to the activity from their professor. After a short introduction the students are to experiment with ways they can get hurt by getting up out of a chair.

2. After they have experimented with getting up out of a chair, the students should think about how to get up out of the chair properly.

3. When a sufficient amount of time is given the students provide the students with a disability of some sort.

4. Have the students then come up with a way to get out of the chair with this new disability.

5. Have the students come up with instructions for both of these procedures for getting up out of a chair.

6. Also for both cases the students should think about what muscles are going to be used.

7. Have the students demonstrate these techniques with the professor and have the students give the professor these instructions for him to perform the list of steps with and without the disability.

8. The professor should know what the proper method is so that if the students told him something wrong he could demonstrate the worst case scenario.

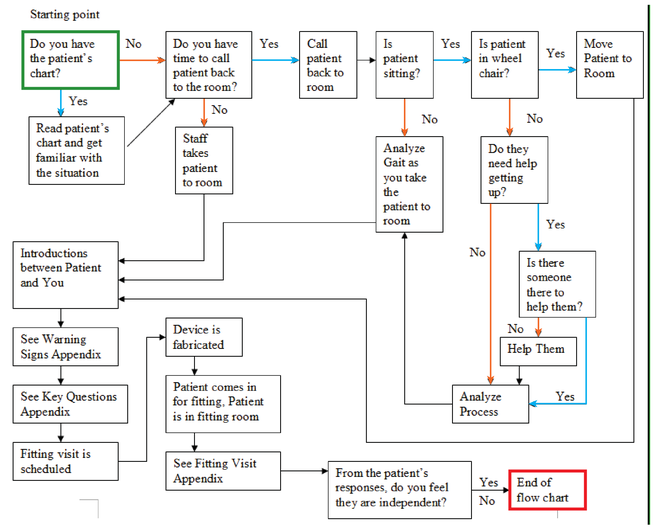
9. In the end the professor should bring the groups back together to give them proper instruction on how to get up out of a chair with and without disabilities.

Group 2 : Psychosocial

Based on the activity designed by the curriculum group, the aim of the psychosocial group is to focus the class activity on the psychosocial aspect of patient care. Understanding the mental state of the patient is a crucial step in providing patient care.

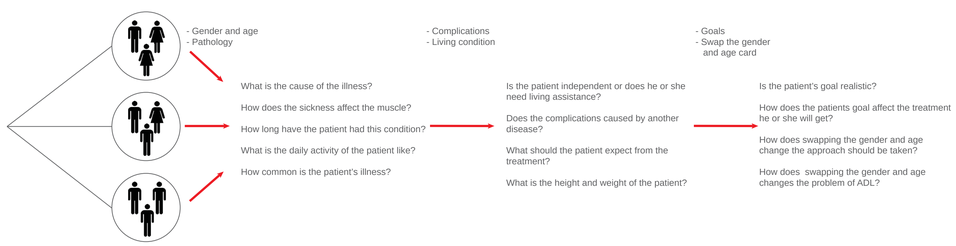
The group devised a flowchart which maps what a patient's experience in an O&P clinic may be like. Analyzing this flow chart can give the students an insight into the mental state of the patient.

The flow chart will be modified based on the students' discussions as the semester progresses.



Simulation of Class Activity

Classes of 9 students are divided into groups of 3 students. Several stacks of index cards are written with patient details such as gender, age, pathology, etc. Each group will get a random card from each stack and discuss how to approach the patient's condition based on the information given. First two cards given out would contain the age and gender, and pathology. During group discussions, students will be asking more questions, and more index card will be distributed containing more information such as complication, living condition. By releasing the patient's details gradually, students are encouraged to ask questions to find out as much possible about the patient.



Review of Activity

The activity was carried out over 45 minutes in a classroom setting. Information on the patients were distributed in 3 stages, after each stage each group would discuss and come up with questions which they need to ask. With each additional information, the list of questions would grow and at the end of the session, each group would have a list of questions that need to be answered, some of the question were discussed at the end of class while the rest of the questions are answered by the students through independent research and they were discussed in the next class.

The activity was succesful in providing an environment where the students are encouraged to ask important questions. The discussion between the instructor and students in between group discussion was useful in directing the students line of questioning.

Group 3 : Fabrication and Material Study

Fabrication of O&P devices requires a high level of craftsmanship and knowledge of material. Project-based class in fabrication and material study combines practical, theoretical and interactive method of learning.

Students would receive theoretical lecture and practical training and would utilize the skill and knowledge obtained to solve the problem designed by the curriculum group. The objectives of this class would be:

1. Provide practical training in fabrication of O&P devices
2. Create an awareness of how the patient interact with the devices
3. Provide theoretical knowledge of material used in fabrication
4. Provide theoretical knowledge which allow the student to communicate their ideas accurately among professional and patients

Class Activity

The result of taking part in the previous activity were a list of questions and some of them are related to the fabrication of O&P device.

1. What is the age of the patient?
2. What is the patient's expectations and goal of the treatment?
3. What is the patients skin condition?

Knowing the answers to these questions will help in choosing the material for the O&P device. Some of the factors in choosing materials for O&P device are the kind of device fabricated, the weight of the device, and whether or not the patients skin are allergic to the material.

Students in this class will also learn practical skills involved in the fabrication process. Using fabrication of and ankle-foot orthosis as an example, the fabrication process can be divided into several parts.

1. Casting of positive mold
2. Vacuum forming using the positive mold
3. Trimming and finishing the form
4. Testing the fit of the device on the patient

These process will be demonstrated during class by the instructor and the student will perform this as an individual exercise and also as part of the group project .

Field trip

The group went to Bio Concepts with Professor Meade to learn more about the fabrication process of and O&P devices. Members of the group actively took part in different stages of fabrication and learned some of the skills that need to be taught in a fabrication class.

Preparation to cast negative mold of the leg

Casting negative mold of the leg

Casting positive mold of the leg in plaster and reshaping the plaster cast