

Midterm Report IPRO 309
Education and Technical Support of Prosthetics and
Orthotics Education in Latin America

Illinois Institute of Technology

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Instructor

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Objectives

Primary Objective

The primary objective of this IPRO is to support the development of the first International Society of Prosthetics and Orthotics (ISPO) accredited Category 3 program in Latin America.

Secondary Objectives

The secondary objectives are necessary for accomplishing the primary objective. To ensure that the program will be accredited, many guidelines must be followed; these guidelines have set the secondary objectives as follows:

- Develop several educational modules concerning common diseases and their orthotic treatments
- Develop several low-cost demonstrations and hand-outs to compliment the educational modules
- Carefully follow ISPO requirements to ensure accreditation
- Translate all material to Spanish for use in Latin America
- Develop a three day short course to be presented at a Prosthetics and Orthotics conference at Bogotá, Colombia in May 2007
- Work with educators in Colombia to develop a program similar to IPRO 309

There have been no changes to the objectives. IPRO 309 is an ongoing project in its third semester; because of this the objectives were already well defined. There is no need at this time to change or add any objectives; they currently describe all of the tasks the group desires to accomplish.

Results to Date

Currently, the research done by each sub-group is heavily focused on the background of each disease. While this information is useful, it has been determined that the presentations do not have enough information about the use of, and manufacture of, the orthotic devices used to treat these diseases. After a meeting among the team leaders it was decided to abandon the second set of presentations and focus all of our attention on the first set of presentations. After discussing the idea with the rest of the group members it was decided to go ahead with this plan; the idea being that more information about the manufacture and fitting of orthotics will be more useful to the students who will be doing just that. Each subgroup member was instructed to choose a physical effect of the disease and an orthotic treatment for the disease; then they are to focus on the fitting and manufacture of that device. The research done about the background of each disease is not wasted; the idea behind the restructuring of each module is that the background information will be mixed in with the orthotic treatment to make them more useful to the Category 3 students. Each subgroup has made large progress in background research; with the recent changes to the work plan the subgroups have begun restructuring their presentations.

The group has been successful in getting orthotic devices donated for demonstrations; it is still foreseen that all materials will be donated the money in

the budget will go to defraying some of the costs for those team members wishing to travel to Colombia.

Diabetes Subgroup Results

The Diabetes sub group has prepared a presentation that provides a general description of the disease and an introduction to the different orthotic devices that could be used to cure foot complications arising from it. The group has also prepared a detailed document that will aid an instructor while teaching the course.

Based on feedback from the class, the group realized that it needed to focus more on the orthoses and their fabrication methods. Therefore the group plans to research the different orthotic devices in greater detail and also the different manufacturing processes associated with these orthotic devices.

The group had initially underestimated the time it would take to complete the research and presentations on diabetes; hence, the group decided to make some changes to the original project plan. Given the large number of orthoses associated with diabetes and the amount of details involved in the manufacturing processes, the group has decided to focus on the orthoses and not prepare any educational modules dealing with Clubfoot.

Osteoporosis Subgroup Results

The group has researched the background information about osteoporosis. Special emphasis has been placed on how osteoporosis affects bones and the need for orthotics and prosthetics for the spine, hip, and wrist. All research is being continuously revised and compiled into a slideshow presentation beginning with more general information about the disease and moving into each specific fracture. The goal is to continue research and focus more explicitly on the orthotics involved and how to make them. The intent is to follow the revision guidelines decided upon by the team and incorporate the background information previously researched as well as the future research focused explicitly on orthotic treatments.

Stroke and Cerebral Palsy Subgroup Results

Previously the group has focused its research on the background of stroke and its orthotic treatments. A slideshow presentation has been created to display this information. The group has decided to shift its focus toward cerebral palsy (CP); because CP is a main focus of the conference in Bogotá it seemed logical to focus the efforts toward it rather than stroke. The physical effects of stroke and CP are similar so the research regarding orthotic treatments will not be wasted, rather, it will aid in the creation of the CP educational module. The CP module will follow the guidelines set by the group.

Administrative Progress

The Webmasters have gotten the approval for the server space needed for the website. No further progress has been made; once the modules and brochures are made these resources will be uploaded to the website.

The positions of IPRO Colombia and Sponsor Collaborator have been consolidated into one position filled by Carolanne. Carolanne has been maintaining contact with the sponsors so when the time comes to have the modules reviewed they will be available. By keeping in contact Carolanne has facilitated the asking of questions and scheduling of hospital visits.

Progress has been made toward translating all materials from previous semesters to Spanish; there are several materials and this is a time consuming process. This task was initially not assigned to anyone being that Michael, Nil, and David are fluent in Spanish they have been assigned to complete the task. It is projected that all materials will be translated by the conclusion of the semester.

Since the consolidation of the positions IPRO Colombia Coordinator and Sponsor Collaborator, Karen has taken on the role of creating the video for IPRO Day. It was decided that each group member would talk briefly about the IPRO and these video clips would be combined with video footage from Colombia to form an informational video to aid in conveying the purpose and impact of this IPRO group. No footage has been taken as of yet but it is proposed to begin the week of March 27th.

Allison and Elise have contacted Dr. Gomez to begin arrangements for the trip to Colombia. All group members from this semester and last have been asked to commit to the trip by March 27th to allow adequate time to make flight and hotel reservations. The airline and hotel have been chosen so that once commitments are made the reservations can be made quickly.

Revised Tasks and Events Schedule

Due to the revision the group has made to the modules several changes have been made to the work break down structure. Although there have been several changes, these changes have been internal to the subgroups. The WBS for the group as a whole has not been changed, and is shown below.

Due Date	Item	Req. Time	Status
Feb. 11	All subgroup project plans uploaded	2 hrs/subgroup	Completed
Feb. 15	Project Plan available for review	15 hrs	Completed
Feb. 16	Project Plan reviewed and uploaded	2 hrs	Completed
Mar. 11	All subgroup midterm reports uploaded	2 hrs/subgroup	Completed
Mar. 22	Midterm Report available for review	15 hrs	In Progress
Mar. 23	Midterm Report reviewed and uploaded	2 hrs	In Progress
Apr. 6	Meeting minutes recorded and uploaded	1hr 15min/meeting	Ongoing
Apr. 15	All project materials due	Ongoing	Pending
Apr. 17	IPRO Day presentation completed	15 hrs	Pending
Apr. 17	IPRO Poster completed	15 hrs	Pending
Apr. 19	Abstract available for review	5 hrs	Pending
Apr. 20	Abstract reviewed and uploaded	2 hrs	Pending
Apr. 20	All deliverables uploaded	Ongoing	Pending

Apr. 25	IPRO Presentation submitted to IPRO office	30 min	Pending
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The above WBS has been working well and continues to suit the goals of the group, regardless of the changes made to the subgroup goals. The group has completed all tasks as scheduled and will continue to do so except in the case of an unforeseen obstacle or emergency.

Due to the changes made to the presentations each subgroup has revised their WBS.

Diabetes Subgroup WBS

There were many changes made to the original task schedule from the initial report. Therefore the group did not complete several of the planned tasks.

Due Date	Item	Req. Time	Status
Feb 11	Rough draft of individual diabetes slide shows	3 hrs/ person	Completed
Feb 13	Subgroup presentation completed	2.5 hrs	Completed
Feb 15- Feb 29	Clubfoot research	6 hrs/ person	Abandoned
Mar 8	Clubfoot finalized presentation	2.5 hrs	Abandoned
Mar 1- Mar 31	Research orthotics and their fabrication	6 hrs/ person	In progress
Apr 1- Apr 7	Create presentation of orthotics and their fabrication	3 hrs	Pending
Apr 7- Apr-15	Revised presentation finalized after correspondent feedback	5 hrs	Pending
Apr 7- Apr 15	Pamphlet/presentation work	3 hrs	Pending

The Diabetes sub group members individually researched information on the disease, as well as orthotics used to treat it. A slideshow presentation was then created from the information collected, and a text document with notes was included with the module. At this stage, the full group decided on a format for each presentation that will focus more on the orthotic devices, their materials, and manufacturing. Because of this decision, the Diabetes sub group has had to redraft the presentation to include research on these topics; the group must do more research and compose a new presentation that can be submitted to the Diabetes correspondent. Also given these changes, the group has decided to abandon Clubfoot as an additional presentation, in order to maintain focus on diabetes-related orthoses.

According to the project plan Carolanne, Peter and Michael were to continue the research on Clubfoot and prepare the corresponding presentations, while Vinit was responsible for the brochures on Diabetes and Clubfoot. After the group decided to abandon the research on Clubfoot disease and continue further research on the orthoses, the tasks have been reassigned. Carolanne, Peter and Michael will research the orthotic devices related to diabetes and Vinit will look

into the manufacturing of these devices. Vinit will also prepare the brochures on these orthoses.

Osteoporosis Subgroups WBS

Due to the restructuring tasks were added and abandoned as was seen necessary.

Due Date	Item	Req. Time	Completed
Feb 13	Individual Research Updates, Initial Presentation	4hrs/ person	Completed
Feb 27	Continuation of Research, Update Presentation	3 hrs/person	Completed
Mar 8	Spinal Trauma Addendum	5 hrs	Abandoned
Mar 20	Focus on Specific Orthotic Devices	5 hrs/person	In Progress
Mar 27	Finalize Project Presentation, Create Brochures	6 hrs	Pending
Apr 15	Finalize Project Presentation, Finalize Deliverables, Submit information for Project Poster	2 hrs	Pending

The group members have researched physical effects of Osteoporosis as well as the orthotics used to treat these physical effects. Time has been added for each group member to focus on an orthotic device based on the new requirements set by the team leaders. Also due to these changes the spinal trauma addendum has been abandoned. Spinal trauma will not be excluded from the module as it is an important physical effect of Osteoporosis, however it will now be incorporated by choosing orthotic treatments and exploring them in detail. These changes will allow the group to complete a module that follows the new requirements to make the module more useful to the students in the Category 3 program.

The roles of the sub-team have not changed and have been working effectively. David Gracia is working on general background information, Karen Sedacki is working on orthotic correction of spinal fracture, and Allison Bagby is working on pelvic and wrist fractures.

Cerebral Palsy Subgroup WBS

Due to the restructuring of the educational modules many tasks have been abandoned and changed.

Due Date	Item	Req. Time	Status
Feb 12	All individual slide show material submitted	5 hrs/ person	Completed
Feb 13	Background of stroke slide show	6 hrs	Completed
Feb 26	All individual slide show material submitted	5 hrs/ person	Completed
Feb 27	Orthotic treatment of stroke slide show	6 hrs	Abandoned
Mar 7	All individual slide show material submitted	5 hrs/ person	Abandoned
Mar 8	Background of cerebral palsy slide show	6 hrs	Abandoned
Mar 20	CP physical effects and orthotic treatment research and slide show	5 hrs/ person	In Progress

Mar 26	All individual slide show material submitted	5 hrs/ person	In Progress
Apr 5	Orthotic treatment of CP slide show	6 hrs	In Progress
Apr 15	All material available in Spanish	15 hrs	Pending
Apr 15	CP presentations revised as needed and pamphlets created	20 hrs	Pending

Research has been completed regarding the background of Stroke such as physical effects, statistics of occurrence, and some orthotic treatments has been researched. The educational module was abandoned before completion due to the decision to move the focus to Cerebral Palsy in accordance to the focus of the conference in Bogotá. The research done about Stroke will not go to waste because it has several physical effects and treatments in common with CP. The background slideshow was also abandoned due to restructuring. Rather than splitting up the work as decided in the project plan, each group member will now do their own background research based on the physical effects of CP. Each subgroup member will choose a physical effect and report about how it is caused and treated. All presentations and pamphlets will be translated into Spanish by Nil. All work on the module will be completed by April 15th so it can be put on the website and used to prepare for IPRO day.

Obstacles and Barriers

The group as a whole as well as each subgroup encountered obstacles and barriers. The main obstacles the group encountered as a whole were communication based. The team leaders handed out a survey to determine how each group member felt about the project. Much of what was said was that they did not think the team leaders were communicating amongst themselves and that there was not enough feedback on the presentations. After reviewing the surveys the team leaders met with the instructor to fix these problems. Since the survey has been reviewed the team leaders have provided much more feedback and explicit outlines of what is expected of each subgroup. The team leaders have also made a point to talk with the group about things that have been discussed outside of class to inform the group of their communication with one another.

In the future the group does not expect any further obstacles. The survey has effectively allowed the group to work out their communication problems. The group plans to continually allow each member to voice any concerns so they may be addressed before they cause any major delays in the project.

Diabetes Subgroup Obstacles

While researching the many facets of diabetes, it was very easy to find generic information, but difficult to find orthotic specific material which was more relevant to the cause. Therefore, instead of having one individual be responsible for researching the orthotic treatments, each subcommittee member is assigned a specific orthotic device to investigate further. This should ultimately lead to much faster acquisition of orthotic information for the presentation.

While researching the different types of orthotic devices available, the group encountered several sources of commercial description; this presented an ethical dilemma, and the group debated whether or not to use the information

provided on such sites. At last it was agreed upon to include details from commercial sources, without allowing only one or two particular companies to dominate the research.

In the future it will be difficult to translate all the deliverables into Spanish, since many of the diagrams and pictures include English text within the image itself. By modifying certain diagrams through paint and also finding substitute images online, it will be possible to overcome this problem with extensive research.

Osteoporosis Subgroup Obstacles

The osteoporosis group has not run into any major problems. However, there were initially problems with the presentation being too wordy and intensive for high school students. Feedback was received from the whole team and the problem was fixed. As suggested, more pictures were included in the presentation and difficult terms explained.

There are no foreseen obstacles in the future. The group has been working well together with work being completed in a timely fashion. At this rate, all tasks will be completed with all deadlines met.

Cerebral Palsy Subgroup Obstacles

The CP group has run into problems finding statistics about the occurrence of the disease in Colombia. Many statistics are available for the United States; however, this information is not as useful as statistics for Colombia. The group is currently trying to overcome this obstacle by contacting doctors and students in Colombia to receive statistics from them. The group has also included world wide statistics to provide a very general idea of the occurrence of CP.

In the future, as research about the manufacture continues, it is foreseen that limited information will be available. To overcome this the group plans to borrow books from doctors and students rather than rely on the internet as their main source.