**Title and Focus of Activity:** Technology for Neurological interventions

*Management of care; Innovation*

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**Course Information:**

Adult Neuromuscular 3, Advanced Evaluation and Interventions; 2 credits; Final of the triad of neurological classes, in the 5th term of a 7 term program. Occurs simultaneously with pediatric interventions, MSS 3 and 4 which are advanced orthopedic manual clinical skills for extremities and spine, research and critical thinking.

**Learning Activity Description:**

Context/Purpose: Students are put into 10 small groups of 4 – 6 people and assigned a technology currently available to clinicians for patients with neurological conditions. Students prepare a poster board presentation of a type of technology currently available. These include but are not limited to:

1. Blue marble game company
2. Jintronix
3. Robowalk
4. Alter G
5. Lite Gait
6. Exoskeleton
7. Bionic leg/arm
8. Wii/gaming systems available outside of medical profession
9. Virtual reality programs
10. APPS designed for patient use
11. APPS designed for therapist use
12. BIONESS- several items
13. Barihab table by therapeutic industries

The poster board presentation should include details of the item, website information, cost if known, and current evidence supporting its use and most appropriate diagnostic categories for the intervention. Students also prepare a single sheet hand out with the most important details and references. On the afternoon of class the students set up their presentations around the room in the style of an exhibition hall at a conference. They may also use tablets or pads to be screening demonstrations of patients utilizing the technology. The individual groups then split. Half go around and learn about all the other exhibits and receive handouts, while half remain at their poster and “sell” their product for 5 – 7 mins per group. After completion they exchange roles.

Time for student to complete the activity:

Preparation for activity outside of/before class: 2-3 hours. Class time completion of the activity: 2 hours.

Readings/other preparatory materials:

Articles regarding the use of their technology, ideally 3 per project but some of the newer items do not have that much research. Also encourage exploration of web sites for the technology company.

Learning Objectives:

Evaluate a technological intervention.

Determine the value of a technological intervention for specific or general neurological diagnosis.

Critically review the literature on the effectiveness and clinical application of technology for the client with a neurological disorder.

Demonstrate the ability to explain to a client or insurance company the justification for the use of certain technology for the client with a neurological disorder.

Methods of evaluation of student learning:

A rubric is attached for grading (Appendix 1). Recommended grading if creating a different rubric than the one provided could be based on all, or any, of the following criteria:

* Quality of poster/presentation and handout
* Use of appropriate evidence based research to support the product or explanation as to why research is currently not available (product too new etc.)
* Professional appearance during the presentation
* Ability to handle questions regarding the product
* Demonstrate good knowledge of the product and its relevance to a specific or general clients with neurological deficits
* Appropriate references correctly cited.

**Appendix 1 – grading rubric.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **5** | **4** | **3** | **2** | **1** |
| **Content** | Content is accurate and all required information is presented in a logical order. Evidence based material is used – at least 3 correctly referenced peer reviewed articles | Content is accurate but some required information is missing and/or not presented in a logical order, but is still generally easy to follow. Evidence based material is used up to 3 correctly referenced peer review or web references. | Content is accurate but some required information is missing and/or not presented in a logical order, making it difficult to follow. Limited peer reviewed evidence based references are used – less than 3. | Content is questionable. Information is not presented in a logical order, making it difficult to follow.Only web based information is included with no peer reviewed evidence based material. | Content is inaccurate. Information is not presented in a logical order, making it difficult to follow.No appropriate use of the literature or web information to support the work.  |
| **Presentation** | Presentation flows well and logically. Presentation reflects extensive use of tools in a creative way.Each member’s information is represented and identified with their name.Single page handout has captured the most relevant concepts | Presentation flows well. Tools are used correctlyEach member’s information is represented and identified with their name. Overall presentation is interesting.Single page handout is good but missed a few major components | Presentation flows well. Some tools are used to show acceptable understanding.Each member’s information is represented and identified with their name.Single page handout is adequate | Presentation is unorganized. Tools are not used in a relevant manner. Lacking some of the members’ information/ and or information is not identified.Single page handout lacks thought and presentation and does not explain the material well, or has omitted major issues and references | Presentation has no flow. Insufficient information and lacking some of the member’s information. Single page handout was missing, or of very poor quality with no references and missed all major aspects of the concept.  |
| **Pictures, Clip Art Background** | Images are appropriate.Layout is appropriate, with good font, clear formatting and professional appearance | Images are appropriate. Layout is cluttered. | Most images are appropriate | Images are inappropriate or layout is messy. | No images |
| **Mechanics** | No spelling errors. No grammar errors. Text is in authors’ own words. | Few spelling errors. Few grammar errors. Text is in authors’ own words. | Some spelling errors. Some grammar errors.Text is in authors’ own words. | Some spelling errors. Some grammar errors. Most of text is in authors’ own words. | Many spelling and or grammar errors. Text is copied. |

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