The Motion Lab, Sunny Hill Health Centre at BC Children's Hospital

Computerized Gait Analysis: How Do We Move?

Online Gait Course Rebuild – 12 Years Later

Karen Davies (MSc, PT) and Mona Behrouzian (BASc Student)

Context and Overview

Our objective is to update and improve our current Computerized Gait Assessment (CGA) online course, supported in a 2011 TLEF grant application, with a thorough needs assessment and backwards design approach.

This updated course will expand on the assessment of children with neuromotor issues, providing clinicians and students with insight into quantitative movement analysis.

Project Goals

Work with New Knowledge and Innovation at BCCH to:

1. Align learning outcomes, assessments and activities with an instructional design storyboard template.
2. Remove and replace Flash content with H5P; update plug-in tools; and create new media.
3. Review and update current case studies with an interactive learning component.

Future Work

We aim to continue our work by creating:

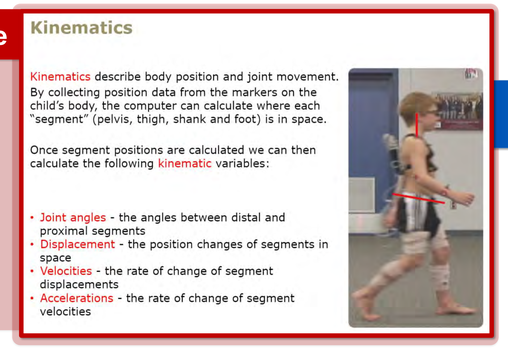
1. A new, online visual gait analysis course for children with pathological gait, with additional case studies.
2. A new, online course for standardized lower extremity pediatric assessment.

Access our Course!

This open-access course can be found on the PHSA LearningHub, or scan this QR code!

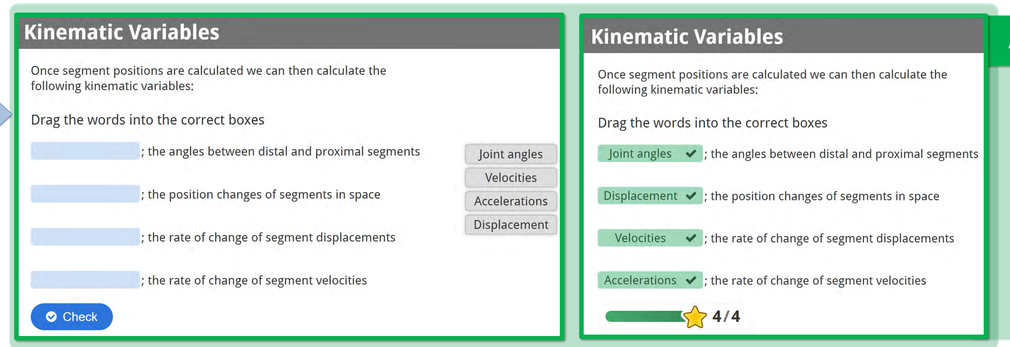
Before

In the original version of the online course, students passively read through key definitions of pre-requisite material.



Strategy 1:

Interactive Assessments

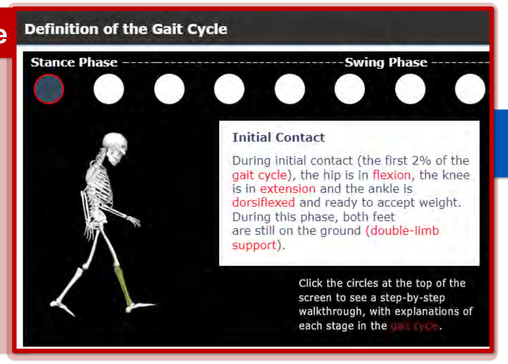


After

Now, students are prompted to review the key terms via an interactive activity and receive immediate feedback. The activity was made using H5P (1). This promotes personalized, active learning.

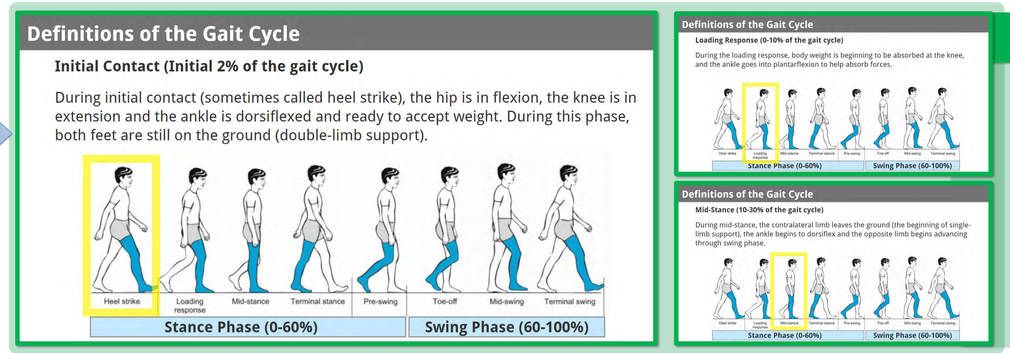
Before

Each phase of the gait cycle was shown separately. Students had to manually select each phase, shown as ambiguous circles.



Strategy 2:

Clearly Segmented Content

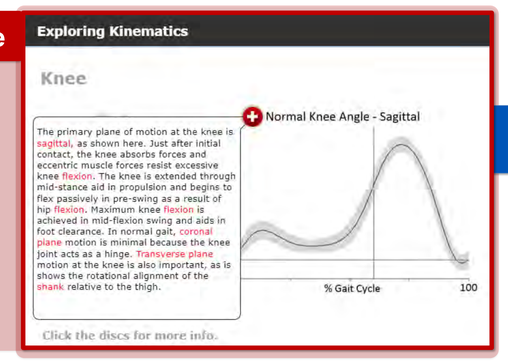


After

A diagram of the full gait cycle (2) is displayed while learning about each phase. Students are automatically shown the next phase to avoid accidental skips. This allows for easier navigation and less cognitive overload.

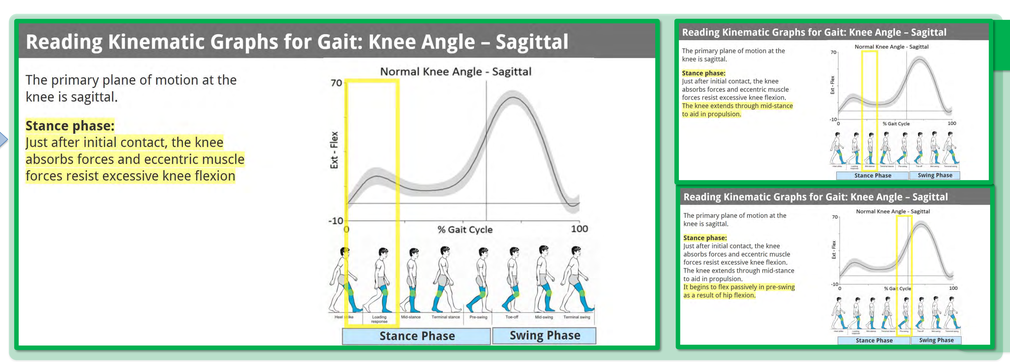
Before

Students had to interpret the graph by reading a large block of text and memorizing the gait cycle shown earlier.



Strategy 3:

Relating Concepts in Data Visualization



After

Phases are separated and highlighted for easy reference on the graph. Gait cycle diagram displayed for easy reference, allowing students to recall what was learned and relate the concepts to the graphs presented.

References

1. H5P Resources https://h5p.org/
2. Gait Cycle Image: Pirker, W., Katzenschlager, 2017, https://doi.org/10.1007/s00508-016-1096-4

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