Capstone Project: Student Learner Outcomes

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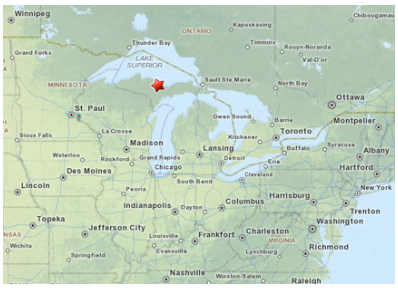
Midwest



Objectives of the session

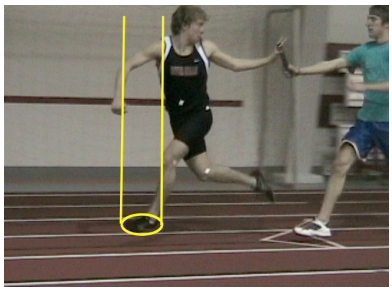
- Why a capstone project?
- Scholarship of Teaching and Learning:
  - What are the Learner Outcomes from a capstone project?
    - Movement/skill knowledge
    - Analyzing abilities
    - Biomechanical concepts
  - Teaching strategies and instructor's observations

Why a capstone project?

- What do you want your students to know when they leave your class?
- What competencies do you want them to possess?
- How will the project facilitate the learning process?

Scholarship of Teaching and Learning

- What are the students learning?
  - My objectives
    - Movement/skill knowledge
    - Analyzing abilities
    - Biomechanical concepts
- Qualitative data
  - Student self-report
  - A number of semesters



Dartfish

- Motion analysis software

Movement and skill

- Increase knowledge
  - Balance
  - CM
  - Joint angles
  - Forces (pt of application)
  - Release/projection angles

Biomechanics

- Improve qualitative analysis
  - Increase number of critical observations of video
  - Biomechanical concepts of movement analysis
- Add quantitative analysis to project
  - Students observe, illustrate, and analyze

Analyzing movement and abilities

- Students view movement at a variety of speeds
- Students view movement frame by frame

Analysis project

- Key positions and critical features
- Direction of force and point of application
- Track CM and discuss stability
- Joint angles
- Release/projection angles
- Other

Learning outcomes related to

- Skill/movement
- Analysis process
- Biomechanical concepts

Key Positions

- Skill
  - "Frame by frame helped to better understand the movement"
- Analysis
  - "It's much easier to be critical with this program, able to see more."
  - "Very slow motion (.25) helped along with the frame by frame"

Center of mass

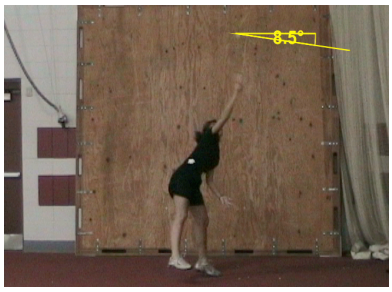
- Biomechanical concept
  - "knew all along and never put it into words. There was only one foot on the ground for the base of support… momentum keeps you upright."

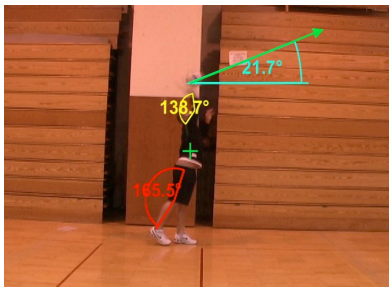
Cloning

- Skill
  - "The foot grab and pulls the track"
  - "Can really focus in on a body part and notice things that you didn't before"
- Analysis
  - "Most of the runners run with a flat foot"

Angles

- Movement/Skill
  - "The degree at which the angles differ for each participant"
  - "How much the angles change throughout the movement"
- Analysis
  - "We learned how to use this tool to find mistakes in golfers and correct them"
- Concepts
  - "We learned about relative and absolute angles and how to identify them"





Captsone Project

- Real world application
  - Students use technology to gain competencies for career path
  - Students use own products for teaching and coaching
  - Former and current students using technology in coaching
  - Transferable skills to other jobs
    - i.e., video editor

Students' papers

- Illustrations in paper
- Photo of performer

Instructor's observations and perceptions

- Students are more critical in their analysis
- Engaged in project & invite others
- Better progression of project
- More guidance provided in analysis process
- Use of students' illustrations in class and for exams

Critical Analysis

Engaged and interactive

Questions?