The use of a learning game:
*Trot to Trophy*,
in Equine Science

Shannon Pratt Phillips, PhD
Department of Animal Science
North Carolina State University
ANS 110: Introduction to Equine Science

• Introduction to Equine Science is a course designed for freshmen and sophomores of any major.
• We discuss terminology, impact of horses on history and society, breeds, management, genetics, reproduction, health, nutrition, behavior, riding, and business aspects of the horse industry – *Horse 101*
• Natural Sciences - General Education Program
Challenges

• Wide range of equine background and experience

Results from 176 students, 2 semesters of teaching.
Digital Game-Based Learning

- Active learning
- Enhance learning and motivation
- Enhances retention
- Appeals to millennial students – “Digital Natives”

- Math, Physics, Natural Sciences, Nursing, Architecture…

- M. Ebner, A. Holzinger  Successful implementation of user-centered game based learning in higher education: an example from civil engineering Computers & Education, 49 (3) (2007), pp. 873–890
Digital Game-Based Learning

• Agriculture?

• Pfizer/Zoetis – Walking the Pens

• Not a substitute for teaching – Supplement

Trot To Trophy

• Designed to provide an interface to enhance the learning experience for students with little to no equine background as well as to provide a fun practice tool for those with more extensive equine backgrounds.

https://trottotrophy.ncsu.edu
Mix of Educational Material and Fun Games

- Image of a horse skeletal system.
- Image of a game interface with options: Call Farrier, Call Vet, Self Treat.
- Image of a game screen showing a horse with labels for curry comb, hard brush, and body brush.
- Image of a game screen explaining English Bridles are used in English style riding and Western Bridles are used in Western type riding.
Educational Material

• General education
  – Anatomy
    • External
    • Bones
    • Muscles
    • Reproductive
    • Digestive
  – Course materials
    • Breeds
    • Colors
    • History
    • Genetics
    • Etc.

• Games based education
  – Nutrition
  – Stall cleaning
  – Grooming
  – Tack
  – Preventative health care

• Course materials
  • Breeds
  • Colors
  • History
  • Genetics
  • Etc.
Pastor Pastern asks:
What disease is zoonotic (can also infect humans)?

Rhinopneumonitis  Rabies  EPM  Strangles

Garret the Foal Whisperer asks:
What disease is found in Arabians that affects their immune system?

Lethal White Foal Syndrome  EIPH  HYPP  SCID

Pastor Pastern says:
Bless you, child!
Rabies  CORRECT!
Rabies virus infects the central nervous system and is usually transmitted through a bite.

Garret the Foal Whisperer says:
The voices agree.
SCID  CORRECT!
Severe Combined Immunodeficiency is a genetic condition that results in the death of the Arabian foals.

FINISH  NEXT
Locate the bone that is the most distal bone in the horse's limb.

Locate the large colon.

Identify the oviduct.

Locate the large colon.
Do the students use it?
Methods

- Fall semester, 2015
- 70 students surveyed
- Likert-type scale
Questions

- Rate how often you have used/played Trot to Trophy
- Do you think Trot to Trophy *enhanced your education about horses*
- Do you think Trot to Trophy helped you earn a higher grade in this class?
- Do you think learning apps can be useful in your education?
How often Trot to Trophy was used/played

- 1 – Didn’t play at all
- 5 – Played extensively

- 27% of students didn’t play at all 😞
Do you think Trot to Trophy enhanced your education about horses?

- 24/51 remaining students (47%) answered 4 or 5

Do you think Trot to Trophy helped your earn a higher grade in this class?

- 19/51 remaining students (37%) answered 4 or 5
Do you think learning game apps are useful in your education?

- 67% responded positively
Discussion

- Disappointing number of students never tried it
  - Rate of learning – and use of games for learning – associated with motivation
  - No obvious extrinsic reward
  - Students might not have any intrinsic interest
Discussion

• Of those who did play
  – Enhanced learning about horses
  – Saw some improvement on grade
Conclusion

• Games have the ability to enhance the learning opportunity for students
  – Should be a blend of education and enjoyment

• Work to increase use of game
  – More direct similarity between game and course material?
  – Bonus points for completion of levels?
Thank you!

- Shannon Pratt Phillips, PhD
- Associate Professor, Equine Nutrition & Physiology
- Department of Animal Science
- North Carolina State University

• sepratt2@ncsu.edu