Self-Experience as didactic tool in teaching equine lameness evaluation


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This study is part of a study that is currently submitted for possible publication in the Journal of Veterinary Medical Education.

**Introduction**

- Equine lameness evaluation (LE) is an important first day skill for graduates working in equine practice, but teaching lameness evaluation can be a challenging task especially in mild degree appearance.
- Currently there is little evidence for the efficacy of different didactic methods of lameness recognition.
- Many lameness evaluators and lameness evaluation instructors nod their own heads in the rhythm of the horse (consciously or subconsciously).
- The aim of the study was to investigate the effect of two self-experience techniques (simultaneous head nod (HN) during LE and imitation of lameness (IL) during LE instructions) on short-term learning outcomes in clinical education of mild degree supporting forelimb lameness evaluation.

**Material & Methods**

- 78 (72 female, 6 male; age: 19-35y) undergraduate veterinary students (VS) of varying equestrian/veterinary experience, before their clinical study period, undergoing a theoretical and practical standard course “induction to LE” including three videos and two live horses;
- 4 didactic groups: Ia: standard course +HN; Ib: standard course only; IIa: standard course +HN +IL; IIb: standard course +IL.
- Lameness grading used 0 (sound) to 5 (non-weightbearing) based on textbook. Walk and trot graded separately.
- For testing, two sound or mildly forelimb lame horses (gradated as 0-2.5) that were new to the VS, were walked and trotted in hand on straight line.
- Lameness was assessed by each VS and by two senior clinicians (SC), the evaluation difference between VS and SC was documented as localisation difference (same limb identified as lame?) and assessment difference (same degree of lameness given?).
- Statistical analysis: X² Test, ANOVA, post Hoc: Test; (p< 0.001).

**Results**

- Presence of lameness correctly identified in more than 80% of comparisons of students with senior clinicians.
- No significant evaluation differences between groups.
- Localisation difference smaller in trot than in walk, assessment difference smaller in walk than in trot (except for IIa: standard course +HN +IL).
- Sporadic head nodding occurred in groups without specific instruction of students to nod (Ib, IIb), but less than in groups instructed to head nod (Ia, IIa).
- 35y) undergraduate veterinary students (VS) of varying equestrian/veterinary experience, before their clinical study period, undergoing a theoretical and practical standard course “induction to LE” including three videos and two live horses;
- 4 didactic groups: Ia: standard course +HN; Ib: standard course only; IIa: standard course +HN +IL; IIb: standard course +IL.
- Lameness grading used 0 (sound) to 5 (non-weightbearing) based on textbook. Walk and trot graded separately.
- For testing, two sound or mildly forelimb lame horses (gradated as 0-2.5) that were new to the VS, were walked and trotted in hand on straight line.
- Lameness was assessed by each VS and by two senior clinicians (SC), the evaluation difference between VS and SC was documented as localisation difference (same limb identified as lame?) and assessment difference (same degree of lameness given?).
- Statistical analysis: X² Test, ANOVA, post Hoc: Test; (p< 0.001).

**Discussion:**

- Individual transfer of teaching instructions for head nodding to real life LE incomplete, possibly due to head nodding being a natural response to rhythmic movements.
- Self-experience/ activity as one of the 3 major learning channels did not produce significant benefits, different from other areas.
- Results possibly influenced by low numbers of students, although the numbers of students was similar or higher than in previous studies. and only mildly lame horses examined corresponding to prepublished data reporting low inter-observer agreement in evaluation of mild degree lameness.
- Grading is subjective and not very reliable in mildly lame horses - this is also shown by the assessment difference, lameness localisation more consistent between VS and SC than grading of mild supporting forelimb lameness. Self experience with species transfer as yet undescribed, for instructions to student dancers use science and somatics/self experience approach for understanding body movement.
- More research necessary.

**Conclusion:**

- Simultaneous head nodding occurs with and without specific instructions for HN and specific instructions for HN did not prove to be advantageous for teaching lameness evaluation.

- Statistical analysis: X² Test, ANOVA, post Hoc: Test; (p< 0.001).
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Equine lameness evaluation is an important first day skill and can be a challenging task for teaching especially in mildly lame horses.

Acoustic and visual input in conjunction with acting are the three major learning channels for acquiring new information[1]. Acting e.g. self-experience has not been reported as didactic tool in teaching lameness evaluation (LE).

Therefore two self-experience techniques (simultaneous head nod (HN) during LE and imitation of lameness (IL) during LE instructions) have been investigated. 78 undergraduate veterinary students (72 female, 6 male, aged 19-35y) prior to their clinical study period participated in the underlying study. After undergoing a theoretical and practical standard course in LE students were divided in 4 different didactic strategies:

Ia: standard course + HN, Ib: standard course only, IIa: standard course + HN + IL, IIb: standard course + IL. A numeric grading scale (0 sound-5 non-weightbearing)[2] was used for LE, walk and trot were graded separately.

For testing the learning outcome of each didactic strategy two different sound or mildly forelimb lame horses were evaluated for lameness in walk and trot by VS and two senior clinicians (SC). The evaluation difference between VS and SC was documented as localisation difference of side of lameness and assessment difference of degree of lameness.

Presence of lameness was assessed with over 80% agreement between VS and SC in all 4 groups. There were no significant evaluation differences between didactic strategies. Localisation difference was smaller in trot than in walk, assessment difference was smaller in walk than in trot. Sporadic HN could be observed in all 4 groups, but more head nodding was seen in groups instructed to head nod. Previous equestrian or veterinary experience in LE showed no effect on evaluation difference. Simultaneous head nodding occurs with and without specific instructions for HN and specific instructions for HN did not prove to be advantageous for teaching lameness evaluation.
No beneficial effect on learning progress by IL could be detected. Self-experience with species transfer is as yet undescribed, however instructions to student dancers use science and somatics/self-experience approaches for understanding body movement[3]. Further research is necessary to evaluate a possible influence of self-experience in LE.

Acknowledgments:
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References: