

The Clumsy Horse: A Professional Development Tool for Facilitators of Self-Directed, Case-Based Learning

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Abstract

Introduction: With the constant evolution of science and advancing technology, future physicians must learn to navigate an ever-changing health care environment by continuous learning throughout their professional careers. Lifelong, self-directed learning is a critical component of medical education to ensure future physicians are adept at identifying knowledge gaps and seeking, analyzing, and communicating new information. To train faculty who teach case-based, self-directed learning, we designed the Clumsy Horse Case.

Methods: The Clumsy Horse Case was created as part of a faculty development program for facilitators of a new case-based, self-directed curriculum known as Patient-Centered Education (PaCE) Cases. An unfamiliar veterinary medicine case was designed to level the playing field for faculty from different specialty areas in order to provide an authentic self-directed learning experience. To determine effectiveness, faculty participants completed a standardized eight-question evaluation survey after the Clumsy Horse Case session, and facilitators received student feedback at the end of each semester via a standard faculty evaluation form. **Results:** Student ratings indicated that faculty were adequately prepared to be effective facilitators. The Clumsy Horse Case was an integral part of facilitator preparation and provided an engaging learning experience for over 60 faculty. Survey ratings and comments from faculty participants indicated a high level of engagement and satisfaction with the learning experience. **Discussion:** The Clumsy Horse Case is generalizable for developing faculty in any curriculum with a case-based, self-directed learning component. It can be modified to fit any school's curriculum and integrated into a professional development program.

Keywords

Professional Development, Self-Directed Learning, Case-Based Learning, Inquiry-Based Learning, Problem-Based Learning, Master Adaptive Learner, Facilitator Orientation, Faculty Development, Self-Regulated Learning

Educational Objectives

By the end of this activity, learners will be able to:

1. Define inquiry-based, self-directed learning.
2. Compare inquiry-based, self-directed learning to other teaching methodologies.
3. Explain the structure and process of self-directed, case-based learning.
4. Facilitate self-directed case activities that foster inquiry and follow best practices.

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Introduction

It has been projected that in 2020, the doubling time of medical knowledge will be 0.2 years or 73 days.¹ At this rate, by the time medical students finish their training, most of their current knowledge will have been replaced. This is a critical tipping point: Science is advancing at such a rate that medical education can no longer keep pace. With advancing science and research, we are fully immersed in an era where unlimited information is now easily accessible to students and professionals through technology.² Therefore, our challenge is to graduate physicians who are master adaptive learners—lifelong learners with an ability to identify, analyze, and apply new knowledge.³ Master adaptive learners possess skills and strategies that allow them to continuously learn and adapt in a changing environment. Medical education must prepare students to engage in lifelong, self-directed learning.⁴

Within this new paradigm of medical education, faculty also play a new role as facilitators of student learning, providing

guidance and feedback in competency areas other than medical knowledge, such as lifelong learning, communication, teamwork, and professionalism.⁵ The Clumsy Horse Case is intended to help prepare medical educators for their new teaching role of effectively facilitating cases that utilize self-directed, inquiry-based learning methods. The case provides a unique perspective by putting the facilitator into the role of learner, experiencing a case firsthand. Typically, medical schools that incorporate self-directed learning cases into their curricula include professional development programs using example clinical cases to train facilitators. Most facilitators, however, are physicians with content expertise, and using clinical medicine cases does not provide an authentic experience. Utilizing an equine medicine case places all facilitators on an even playing field in terms of expertise and naturally provokes questions and curiosity. This unique experience captures the essence of the self-directed, inquiry-based learning process and prepares faculty to effectively facilitate and support this type of case-based learning in medical education.

A thorough review of *MedEdPORTAL* and the education literature found that specific faculty development resources for facilitators of self-directed learning cases are lacking. Research has highlighted several successful frameworks for developing and implementing faculty development programs for similar problem-based learning (PBL) curricula that focus on core educational principles of learning and address many different roles of the PBL facilitator.^{6,7} Successful programs include opportunities for faculty to experience a PBL session, but limitations exist in the research related to effectiveness of specific strategies and approaches.^{8,9} The Clumsy Horse Case is a simple tool that is a novel and useful contribution to professional development programs and education literature.

Methods

The Clumsy Horse Case was originally created as part of the faculty development program for facilitators of self-directed, inquiry-based cases known as Patient-Centered Education (PaCE) Cases. For PaCE Case facilitators, the Clumsy Horse Case is used as part of a faculty development program or orientation that typically includes an initial observation of a PaCE Case session, group participation in the Clumsy Horse Case, and in-person or online case vignettes to explore the giving of feedback, creation of a positive learning environment, group formation, and norms and processes. Because this was a new component of the curriculum, we anticipated that faculty would need development to be effective facilitators of self-directed, inquiry-based cases. The foundation of PaCE

Cases relies on self-directed learning where learners do the following:

- Provide constructive feedback to enhance the learning environment and improve group process.
- Identify areas for self-improvement and make progress towards continuous development.
- Perform peer-to-peer teaching by synthesizing, digesting, and sharing information related to a clinical case.
- Integrate and apply foundational science concepts as they relate to a clinical scenario.
- Create a safe learning environment that follows group norms, produces a high quality of work, and contributes to positive group interactions.
- Identify learning objectives and appropriate resources to address gaps in knowledge.

The role for faculty facilitating PaCE Cases is unique and requires them to follow a specific process and norms while also being a “guide on the side” rather than a content expert. Many faculty are not comfortable with this new, less traditional role.¹⁰ We developed this resource to ease the transition of facilitators into the role and help them better understand the unique learning experience of PaCE Cases.

We designed the Clumsy Horse Case to be implemented with small groups of four to eight faculty and one facilitator within a 1-hour in-person session. In preparation for the Clumsy Horse Case, participants read the PaCE Cases guide (Appendix A) as prework to the in-person session. This provided a basic introduction and understanding of the structure and process of PaCE Cases. The group session began with a 10-minute question-and-answer period as well as a review of the case instructions and norms outlined in the PaCE Cases guide by the facilitator. The Clumsy Horse Case without the learning objectives (Appendix B) was then disseminated to each participant. The facilitator reminded the group to follow the PaCE processes and norms. A leader and scribe were identified from among the group of faculty participants. The group members then read through the case and recorded their data, knowledge gaps, and learning objectives on a whiteboard or large poster-size paper. It typically took about 40 minutes to finish the case. The case was abbreviated into one session by skipping the actual research time and reconciling the group’s learning objectives with the intended learning objectives from the facilitator guide (Appendix C) at the end of the case. A 10-minute debrief concluded the session to discuss how self-directed, inquiry-based cases were different from traditional case-based activities or other teaching methodologies (Appendix D).

To determine the effectiveness of the tool, we asked participants in the faculty development program to complete an eight-question evaluation survey following the Clumsy Horse Case session. The survey was the standard evaluation used by the professional development program for all sessions. Current facilitators also received student feedback regarding their PaCE Cases facilitation skills at the end of each semester via the standard faculty evaluation form.

Results

The Clumsy Horse Case has been used since 2016 across multiple cadres of facilitators, totaling over 60 faculty at our institution. It has also been used at local and regional medical education meetings to garner understanding for self-directed, case-based learning and the unique role of facilitators. In the original cohort of 36 facilitators, 22 completed the evaluation survey after they participated in the session (response rate: 61%). Of note, none of the faculty had prior experience teaching inquiry-based, self-directed learning. On a preorientation needs assessment survey, faculty facilitators rated their expertise in learner-centered teaching strategies at 1.9 on a 5-point Likert scale (1 = *No Familiarity*, 5 = *Expert*). Survey ratings regarding the Clumsy Horse Case session were very positive; the average score for “The session met the stated objectives” was 4.8 and for “I was actively engaged in the session” was 4.8. on a 5-point Likert scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*; Table 1).

Feedback was also very positive. Example comments from participants highlight how the Clumsy Horse Case session was particularly effective at the following:

- Providing a learner perspective:
 - “It was particularly helpful to test drive a case from the student’s perspective.”
 - “I thought having us act as students working through a representative (veterinary) case that we were unfamiliar with was a very effective and engaging way of illustrating the CBL [case-based learning] format. If there

are to be future training sessions for LTCs [longitudinal teacher coaches], I would strongly urge starting with this session as it has been the most informative so far!”

- “No better way to have us understand the PBL session than doing it! Great use of time.”
- Highlighting the new case-based methodology:
 - “Trying out an actual case. That makes the theory more understandable.”
 - “It was incredibly helpful to actually work through day 1 of the case. This really helped clarify things for me.”
 - “It was really good to get a feeling for what the PaCE cases will look and feel like/doing a vet case was brilliant! Put us outside our comfort zone.”
- Preparing facilitators for new role:
 - “Excellent preparation to have us experience doing a PaCE case.”
 - “I think it was useful to finally get to something that was about what we will actually be doing in detail. The other sessions were fine, but largely review for me. This style of facilitation, on the other hand, is really different.”
 - “I finally felt I had a clear understanding of what the role of a facilitator was and how CBL was to be structured.”

Additionally, students completed faculty evaluations at the end of each semester. The faculty evaluation form asked students to rate whether “This person was an effective PaCE Case Facilitator.” Since implementation of PaCE Cases in 2016, students have indicated overwhelmingly that faculty were effective facilitators of case-based, self-directed learning sessions (Table 2).

Discussion

Using the Clumsy Horse Case, a case with unfamiliar content matter, has been an effective, time-efficient faculty development tool to demonstrate inquiry-based, self-directed learning in medical education. The case was developed to help faculty teach in new ways that might not be familiar or intuitive. Given student outcomes and feedback, facilitators have been highly effective in their new role supporting self-directed learning. In addition,

Table 1. Clumsy Horse Faculty Development Session Evaluation Ratings^a

Statement	Average Rating ^b	SD
The session met the stated objectives.	4.8	0.4
The session facilitators were knowledgeable in their content area.	4.8	0.4
I was actively engaged in the session.	4.8	0.4
The pre-session assignments were appropriate for the session.	4.7	0.6
As a group, we took turns speaking and listening.	4.9	0.2
I came to the session prepared, having done the preassignments.	4.8	0.4

^aN = 22.

^bRated on a 5-point Likert scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*).

Table 2. Evaluation Ratings for “This Person Was an Effective PaCE Case Facilitator”

Academic Year	Percentage Choosing Likert Scale Rating ^a							N	Mode	M	SD
	7	6	5	4	3	2	1				
2016-2017	67.66	23.10	7.26	0.99	0.99	0.00	0.00	303	7	6.5	.8
2017-2018	66.77	23.07	7.59	1.97	0.30	0.15	0.15	659	7	6.5	.8
2018-2019	73.30	23.79	2.43	0.00	0.49	0.00	0.00	206	7	6.7	.6

Abbreviation: PaCE, patient-centered education.

^aRated on a 7-point Likert scale (1 = *Strongly Disagree*, 7 = *Strongly Agree*).

the case-base professional development session has been well received by faculty and provides a mechanism to actively engage facilitators in real self-directed, inquiry-based learning. Implementation is straightforward and can be easily integrated and combined with other faculty development activities.

Since self-directed, inquiry-based cases were a new methodology in the curriculum, our initial challenge was developing a first cohort of facilitators to help implement the cases successfully. We developed a train-the-trainer model with several faculty who had recently been introduced to case-based, self-directed learning and became an initial pool of facilitators. These faculty were then able to use the Clumsy Horse Case to develop other medical educators for their new facilitator role.

During implementation, we learned that participants enjoyed the challenge of an unfamiliar case but needed some acknowledgment and reassurance in regard to the foreign subject matter. We typically approached this by asking participants to raise their hands if they were experts in equine medicine. This helped to assure participants that they were not disadvantaged when it came to their lack of expertise and that this was the intention. Being transparent about the unfamiliarity also helped ease facilitators into the role of learner, reminding them that their students would feel this way as they approach case-based learning. On rare occasions, we encountered a situation where someone in the group was quite knowledgeable about the subject matter of the case. This can be a challenge for a group, but we have also used it as a learning opportunity to talk about how to approach cases when one student in the group thinks s/he is an expert on a given topic.

We have begun to pilot initiatives to move some professional development sessions for facilitators to online, asynchronous sessions. The Clumsy Horse Case, however, has remained as an active, in-person learning session for our faculty facilitators. With several different components contributing to facilitator orientation, it can be difficult to pinpoint specific sessions and activities that are most useful. Given time constraints, in-person sessions must be optimized to ensure a rich and meaningful learning experience. Based on feedback and evaluation

ratings, faculty recognize the benefits of this authentic learning experience. As more faculty have joined our initial cohort, we continue to use the Clumsy Horse Case as a primary tool in developing new facilitators and intend to keep a case with unfamiliar content as a staple of the professional development program. Due to the receptivity of faculty engaging in this unique learning experience and the positive outcomes, we recommend using an unfamiliar case as a primary component of professional development for facilitators of inquiry-based, self-directed learning. Although the PaCE Cases subscribe to specific norms, any case with unfamiliar content can be used and adapted to a case-based, self-directed learning curriculum at any health professional school.

Appendices

- A. PaCE Cases Guide.docx
- B. Clumsy Horse Case.doc
- C. Clumsy Horse Case Facilitator Guide.doc
- D. Debrief Questions.docx

All appendices are peer reviewed as integral parts of the Original Publication.

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Prior Presentations

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Ethical Approval

Reported as not applicable.

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