Lesson:

Topic Overview and Justification

Topic title: Developing a definition of humane livestock management.

Given the importance of livestock production to meet the meat consumption needs of the population, people who raise and manage livestock must develop practices to produce the expected quantity and quality of livestock products. Part of these practices, and the way practices are viewed by members of the general public ("just plain folk") who choose whether or not they will consume livestock products, is the way the animals are treated. This becomes a continual problem for livestock managers (collectively) and the general public, because of differing definitions humane livestock management. The differences in definitions stem from difficulties communicating between the two groups; part of this difficulty arises because of a disconnect between the "just plain folk" and the actual practices of livestock management. Therefore, there is a need to provide the "just plain folk" with a connection to the practices of livestock management.

Learning Theory and Instructional Theory

The module will use the Situated Cognition learning theory, because everything we (as a species, and as individuals) do is influenced by not only our own culture, but also the culture in which the learning is occurring. Situated learning theory takes advantage of those socially-constructed influences which our behaviors and practices occur to provide context to what is being learned. In light of the justification for the topic, described above, it is clear that the lack of context surrounding the information that reaches the "just plain folk" is at least partially to blame for the disconnect between livestock management practitioners and the general public. It makes sense, then, that the theory that emphasizes situating information in context should be used for

this module. Additionally, the module will use constructivist instructional theory, expecting learners to take ownership of their learning and construct their own meaning and knowledge through their participation in the instruction.

Learner Analysis

The module will be an online gamebook-type scenario, which provides a context rich world for the learners to participate in. The module will be written for learners who are 13 and older, and as such expects that the learners will have at least a 7th grade education level; this is important for reading comprehension skills, but little else. As such, the required entry behaviors include the ability to read and write in English, and access and navigate the internet. It is also expected, from a constructivist standpoint, that the learners have the metacognitive skills necessary to interact with and complete the module.

To complete the instruction, the learners do not need to have any prior knowledge of humane livestock management. The learners may have some conceptions the topic already, and may be confronted with information during the module which conflicts or supports this prior knowledge; from a constructivist standpoint, this is beneficial, as multiple perspectives allow the learner to view information from multiple angles and construct their own knowledge from there.

The learner's expected attitude towards the gamebook delivery system is moderate to high. The module is not intended to be formal instruction, but rather considerably informal and game-like. I suspect that many of the learners will therefore not activate any prior conceptions of learning (i.e., schooling) when interacting with this module. Since participation with the module is entirely voluntary, it is expected that the learners enjoy using the internet, reading stories, and participating in a degree of solitary role-playing.

With the same line of thought- the particularly informal and open-access availability of the module, combined with the entirely individual participation, means the learners probably not have any feelings about the instructional organization (me). I expected learners to be skeptical of bias or the pushing of a particular messaged/ definition from the instructional organization, so I was careful to provide a balance of experiences and perspectives to try to prevent that.

Instructional Goal and Performance Objectives

Goal

Following a progression through a gamebook "Choose Your Own Adventure"-style simulation which provides an "authentic" environment, peripheral participation in a "lived" practice, and situates cultural values, the learners will develop a definition of humane livestock management.

Objectives

These objectives are intentionally loose and fuzzy to support the constructivist nature of the lesson. I do not want to create a rigid expectation for what should be learned from the lesson, because it is up to the learner to construct their own knowledge as they proceed through the gamebook.

1. After participating in an "on-farm" experience, the learners will reflect on their "experience" at the farm and identify practices that they believe to be humane, or not. The learner will describe the rationale for why they included what they have identified.

2. After participating in an "interview" experience, the learners will identify what they believe to be key concepts from the interview about humane livestock management. The learner will describe the rationale for why they included what they have identified.

3. After participating in any major gamebook experience (a farm "visit" or an "interview), the learners will identify new or altered personal goals for writing an article about defining humane livestock management. The learner will describe the rationale for why they included what they have identified.

4. At the end of the gamebook, learners will identify important aspects of their "on-farm" experiences, the key concepts from any "interviews" they completed, and their personal goals for an article about humane livestock management. The learner will describe the rationale for why they included what they have identified. Additionally, the learner will define humane livestock management.

Instructional Rational

Since the module must be individually completed and entirely self-contained, any authentic environment, lived practices, culture, and communities of practice (or learning) must be simulated. To accomplish this, the learner will progress through a gamebook type activity. In the story, the learner will be a journalist working to write an article on humane livestock management. As part of the research for their article they will "interview" various characters to find their opinions on humane livestock management, and "apprentice" with farmer(s) to observe and participate in livestock management, from a very practical standpoint. At the end of the gamebook, they learner will be prompted to turn-in their portfolio of notes for their article.

Constructivist Goals

Personal goal setting.

At the beginning of the lesson, the learners are given an overall objective—to give notes to their editor regarding their definition of humane livestock management, based on their experience on a few farms, and interviews with members of the community— and are prompted

to think about and record their own goals for their article (and thus, how they proceed in the gamebook). Throughout the course of the lesson, at the end of each major experience the learner participates in, the learners will be prompted again to reflect on their goals for the article they are making notes for; the learners are specifically directed to think about ways their goals may have changed as a result of their experience, or of any new goals that have arisen.

More indirectly, the entire lesson plays heavily on the aspect of ownership in learning. Throughout the lesson the learners are presented with choices to make; these can be choices about the current experience they are in, or how (or if) to proceed to another experience. Without necessarily being aware of it, the learner will have to formulate goals on how to proceed in the gamebook and best get the information they need, or want, to complete their journalistic assignment.

Assessment.

Using a Situated Cognition instructional strategy, the assessment will be *in-situ*. That is, the assessment will occur over the course of the module. In this case, two modes of assessment will be used. First, summary statistics will be used to assess how the learner's progress through the gamebook. After each "experience" the learner completes (i.e., farm visit, interview) they will be prompted to note what they took from the experience, and any changes or new goals for their article. Secondly, a portfolio of the learner's notes—the notes they would use to complete their article—will be collected at the end of the module. As mentioned in the objective the notes include: a description of experiences while working with the farmer(s), any key points they took from interviews, their own thoughts/reflections, and their (summary) definition for/ explanation of humane livestock management.

The assessments can be used by the learners, to monitor their knowledge construction throughout the lesson. A facilitator can also collect the answers to assess the learners' knowledge construction. Facilitators will be provided with simple check-list rubric to evaluate the summary-statistics and portfolio. The rubric can be found in Appendix A.

Entry skills development or support.

As discussed earlier, the learners are only expected to be proficient in English and internet usage; the learners are not expected to have any knowledge of livestock management when beginning the module. The learner's understanding of jargon used on farms and in animal agriculture will be developed and supported through the dialogue which takes place in the lesson.

Constructivist Conditions for Learning

Complex, realistic, relevant context.

As mentioned earlier, the design of the lesson was intended to simulate a complex, realistic, and relevant world where the learner can "practice" livestock management and discover social values related to humane livestock management.

Social negotiation.

Social negotiation is the hardest aspect of constructivism and sociocultural learning theory to include in an individually completed lesson. As alluded to in the previous section, I attempted to simulate a world where the learner could be involved in social negotiation with the non-playable characters (NPCs). The learner has opportunities to interact with two farmers and four local community members. Each of the NPCs provides new information, or a different view on information, to the learner. The learner has a range of question options which they can ask of NPCs to try to simulate negotiation. From a more holistic perspective, the entire lesson can be viewed as a form of social negotiation between me, the developer and provider of information,

and the learner. The learner has access to all of the information I am communicating, and in constructing their knowledge, they are negotiating the meaning of humane livestock management from the world I have created.

Multiple perspectives/multiple modes of representation.

As mentioned earlier, I paid particular attention to providing multiple perspectives to prevent the learners from feeling swayed in a particular way. Additionally, providing multiple perspectives gives the learner the opportunity to view the information from different angles or lenses. Multiple perspectives also may allow the learner to confront information they were not expecting, and to adjust their conceptualizations as a result of this. The learners are given two perspectives of hog farmers going about their daily management, and four perspectives of local community members, possible peers, on what they believe humane livestock management to be.

Ownership in learning/self-regulation.

It is assumed that the learners will take ownership of their learning during the lesson. The lesson is self-paced and the learners are given opportunities to use their autonomy by choosing to progress through most all the available options, or by skipping large aspects of the simulated social negotiation. The learner must only complete one experience (i.e., farm visit or interview) to be provided with the hyperlink to proceed to the end of the gamebook.

Self-awareness of knowledge construction.

From the beginning of the lesson, the learners are aware that they must be constructing knowledge; they are told by their editor that they must write an article discussing their definition of humane livestock management. Whether the learner is aware of it, or not, in developing their definition, they will be constructing knowledge. To facilitate this, at the end of each experience the learner is prompted to record (simulated at this particular time) their notes and goals. As

mentioned earlier, these notes serve as a form of assessment- both for the learner and a facilitator. For the learner, the note prompts will encourage the learner to reflect on what they have gained from their experience, and important aspect of self-awareness of knowledge construction.

Instructional Strategy

The instructional strategy is explained more succinctly in the individual categories above. It is a bit difficult to explain the instructional strategy as a ordered plan without talking in circles, because the learners are given high degree of control in how the order the lesson progresses.

The lesson will begin with a set of introductory pages, which orient the learner to their role in the gamebook. These pages will also serve to provide the overall goal for the lesson, in a way that is integrated into the context of the simulated world. At the end of the introductory pages, the learners will be prompted to write down their goals for the article and any thoughts they have on the topic before the lesson begins. It is at this time the learner is given the hyperlinks to explore the rest of the simulated world. From here, the learner can proceed in one of three ways- to either of two on-farm experiences, or to the interviews. This degree of control gives the learner a lot of autonomy and allows for their ownership of learning.

For the purposes of this discussion, we will explore each experience in the order the hyperlinks are presented (the choice in their presentation was not specific); I will also discuss the on-farm experiences collectively, as the same concept went into both. At the on-farm experiences the learner will begin with an introduction to the farm and the NPC who will be their guide. From there, the learner and the NPC will interact, either through progression into the barns or through question and answer sessions. These interactions will also serve to develop/support the learner's entry skills—defining jargon and explaining aspects of livestock

management. The progression is, again, the choice of the learner intended to provide control and ownership of the learning. The questions and answer sessions are intended to provide some social negotiation- again, as much as I can provide in an individually completed lesson.

The interaction with the farmers will progress to the farmer describing or demonstrating some action that the learner will have to "practice." After the "demonstration" the learner will be provided with options to choose their actions; their choice will affect the story. This choice, again, provides ownership in learning; it also provides a more realistic context, with realistic consequences for the learner to experience. Finally the learners will experience the result of their consequence, and a resolution to the on-farm experience. At the end of the experience the learner is prompted to reflect on what occurred and how that fits with defining humane livestock management; again, this is an attempt to bring an aspect of social negotiation into the simulation. The prompt also directs the learners to write their goals for the article based on what they experienced. The prompt encourages self-awareness of knowledge construction. At the end of the experience the learners will once again be presented with options to proceed with other experiences (i.e., the other farm, the interviews), or to proceed to work and turn in their notes- the end of the lesson. All options are presented at once to allow ownership of learning.

The farm experiences were written specifically to provide multiple perspectives on the practice of raising hogs. Focusing on one species allows the learners to make direct comparisons between practices, rather than trying to compare across species. Similarly, the interviews were included to provide multiple perspectives. Four possible interview participants were included in the unit. Each interviewee provided a differing view on humane livestock production. The interviews also attempt to simulate social negotiation. The interviews progress with a differing number of questions, some offering more opportunities for social negotiation than others. Again,

at the end of the experience (each interview) the learner is prompted to reflect on their goals and the key points or concepts they took from the interview. The learner again has the option to proceed to any of the other experiences, or to the end of the lesson.

The lesson ends with the learner going back to their section editor and turning in their notes. These notes are prompted, reminding the learner of the learning goal. All of the prompts in the unit serve as a form of assessment, but the final notes given to the editor are considered the portfolio in which the learning at the end of the lesson is assessed. After turning in their notes, the learner gets a small amount of feedback from their section editor, and access to hyperlinks of the resources. These hyperlinks align with constructivist theory, providing learners with more rich content. The learner may also choose to return to the beginning of the lesson, if they want to complete it again.

Connection to Learning Theory

There is a significant amount of crossover between constructivism as an instructional theory and situated cognition/sociocultural learning theory. The application of the learning theory is detailed in the Key Concepts of Theory and Use table, below; because of the extensive crossover and integration of the instructional theory and learning theory, much of this information has been discussed earlier in the paper.

Table 1

Key Concepts of Theory and Use

Key Concepts of Theory	Use
Social and Context Dependent / Social-Context Dependent	The simulation provides a contextually authentic environment for the learner to immerse themselves in. The leaners will "apprentice" with farmer(s) in the story, and "interview" the non-playable characters (NPCs), who will provide insight and commentary on the cultural values of the story world. The learners will be expected to develop their definition of humane livestock management based on their experiences (simulated social and contextual information).

Learning and Meaning Making Through Participating in Practice	---
Legitimate Peripheral Participation	The leaners will "apprentice" with farmer(s) in the story, and thus "participate" in the described livestock management practices. In order to "apprentice," the learners will have to read through a simulation of the farmer modeling/demonstrating practices, and then choose their own actions related to that practice. Because the learners will be interacting with the gamebook as a journalist gathering information about humane livestock management, they will not be presented will all aspects of being a livestock management practitioner. Instead they will "participate" in a subset of practices, with opportunity to try out some practices and experiences the consequences of those practices. Thus, the learners will be legitimate peripheral participants in the practice, and be able to make their own meanings based on their "actions."
Communities of Practice: Meaning is Negotiated Through Shared Practice	See above. Legitimate peripheral participation is a means of participating in a community of practice. Additionally, as part of the gamebook, the learners will "apprentice" on at least two farms, providing opportunities to "participate" in two different Communities of Practice (CoP), see differing practices, and then negotiate the meaning of practices and humane livestock management- both within each of the CoPs, and between the two CoPs.
Semiosis: Signs, Symbols, Talk: Context Dependent and Negotiating Meaning	"Talk" will occur during the simulated interviews and on farm participation. The "discussions" will use English as a symbol system, allowing abstraction away from the direct context (practicing livestock management). At the same time, "talk" will provide a rich context space which the learner can use to negotiate their meaning of humane livestock management, and meet the instructional goal.
Driscoll's Instructional Strategies	Use
Cognitive Apprenticeships	The simulation provides a contextually authentic environment for the learner to immerse themselves in. In the case of the cognitive apprenticeship, the leaners will "apprentice" with farmer(s) in the story. First the learner will read through a section of text where the farmer models their practices. The learner will then be given the opportunity to "practice" what the farmer modeled, making their own choices and having to continue with the story based on their results. As described under legitimate peripheral participation, this will enable learners to observe practices already in place, and make their own meanings based on their "actions."
Anchored Instruction	The gamebook takes advantage of anchored instruction by providing a context rich "world" for the learners to derive information from to solve their problem: needing information to create their article. The learner will be prompted at various occasions (the start of the lesson, and after each experience) to develop goals for their article. Additionally, as an aspect of self-regulation and ownership of learning, the learner can make their own goals for how to progress in the story.
Learning Communities	A "learning community" was simulated by giving the non-playable characters (NPCs) in the story distributed knowledge. The NPCs will provide insight and commentary on the cultural values of the story world, and the

	practices of livestock managers (specifically, two hog farmers) which the learner can use to construct their knowledge, and complete their article.
Assessment In-Situ	---
Diagnosis	Diagnosis is not used in this project, as the unit must be entirely self-contained and progressed by an individual, making it impossible for an instructor to monitor progress and offer help where needed.
Summary Statistics	Summary statistics will be used to assess how the learner's progress through the gamebook. After each "experience" the learner completes (i.e., farm visit, interview) they will be prompted to note what they took from the experience, and any changes or new goals for their article. This serves the learner by allowing them to monitor their knowledge construction throughout the lesson. Additionally, summary statistics will allow a facilitator to access the learner's progress through the gamebook (to situate the portfolio), and monitor if the learner met the learning objectives.
Portfolios	The final objective for the module is for the learner to turn-in a portfolio of the notes they would use to complete their article. The portfolio can include any information that the learner deems necessary, but should address: their experiences while working with the farmer(s), important excerpts from interviews, their own thoughts/reflections, and their (summary) definition for/ explanation of humane livestock management. The portfolio will allow the learner to reflect on what they took from the lesson, and will allow a facilitator to determine what the learner's constructed.

Motivation

Keller's ARCS model of Motivation was used to assess the learners' degree of

motivation, construct motivational objectives, and develop a motivational strategy, as seen in

Table 2.

Table 2

Kellers ARCS Model of Motivation Profile, Objectives, and Strategy for Use

Motivational Profile	
Attention	Moderate. Participation in the lesson is voluntary, as such it is expected that learners will want to pay attention to the information being presented.
Relevance	High. The lesson focuses on humane livestock management, a concept that is an important topic in the current culture of the United States. Again, since the lesson is voluntary, it is likely that the learners who choose to interact with the gamebook find the topic to be relevant to their life.
Confidence	Variable. The learners probably have some conceptualization of humane livestock management, but may or may not be confident in their ability to define humane livestock management.
Satisfaction	Variable. Because the lesson is simulated, learners may or may not feel satisfied that the world they experience in the lesson is an accurate representation of the "real" world. Even by coming up with

	a definition of humane livestock management, at the completion of the lesson, if the learners are not confident in the how the simulation represents the "real" world, they likely won't be satisfied with the definition they came up with. Conversely, since the learners are constructing their own definition, rather than being given a definition, they may experience a high degree of satisfaction.

Motivational Objectives
1. Learners will indicate a moderately high degree of attention, by completing the gamebook.
2. Learners will indicate a moderate to high degree of confidence by developing a definition of humane livestock management.
3. Learners will indicate a moderate to high degree of satisfaction by reflecting on their experiences after each experience, developing their own goals for the article throughout the lesson.

Motivational Strategy
1. Learner's attention will be gained by providing a unique learning experience, starting with a narrative which invokes the learner by involving them in a goal/problem-based scenario.
2. Learner attention will be maintained by providing hyperlinks which are used to propel the story.
3. Learner attention will be maintained in a text heavy lesson by occasionally including visual representations.
4. Learner's confidence will be supported by providing multiple perspectives during the "on-farm" experience that can be used to construct their own definition.
5. Learner's confidence will be supported by creating an opportunity for the learner to "participate" in a livestock management practice during each "on-farm" experience.
6. Learner's confidence will be supported by using prompts (summary statistic assessments) to help the learners become aware of their knowledge construction.
7. Learner's confidence will be supported by multiple perspectives, during the "interviews," where interviewees share (model) their definitions of humane livestock management.
8. Learner's satisfaction will be supported by providing multiple perspectives; this will hopefully prevent the learners from feeling that the lesson is attempting to persuade them into a certain belief.
9. Learner satisfaction will be increased by providing natural consequences to the learner's choices in the gamebook.
10. Learner's satisfaction will be increased by providing hyperlinks to the resources used to create the farm portions of the experiences; many of these resources will written by actual hog farmers and members of the animal agriculture industry, giving the lesson more credibility for reflecting the "real" world.

Table 3

Gamebook Assessment

"On-Farm" Experiences	
At the end of the Sunshine Hills "on-farm" experience	Check
Completed	
Identifies practices that they believe to be humane or not	
Describes rationale for each practice identified	
Identifies new or altered goals for the article	
Describes rationale for each goal they identified	
At the end of the Cranwell Farm Facility "on-farm" experience	Check
Completed	
Identifies practices that they believe to be humane of not	
Describes rationale for each practice identified	
Identifies new or altered goals for the article	
Describes rationale for each goal they identified	
Total Checks	
Should have four checks, for each farm experience completed.	
"Interview" Experiences	
At the end of the "interview" with Hillary Banks	Check
Completed	
Identifies key concepts from the interview about humane livestock management	
Describes rationale for each key concept identified	
Identifies new or altered goals for the article	
Describes rationale for each goal they identified	
Total Checks	
At the end of the "interview" with Brian Wilson	Check
Completed	
Identifies key concepts from the interview about humane livestock management	
Describes rationale for each key concept identified	
Identifies new or altered goals for the article	
Describes rationale for each goal they identified	
Total Checks	
At the end of the "interview" with Allyson Cooper	Check
Completed	
Identifies key concepts from the interview about humane livestock management	
Describes rationale for each key concept identified	
Identifies new or altered goals for the article	
Describes rationale for each goal they identified	
Total Checks	
At the end of the "interview" with Greg Patterson	Check
Completed	

Identifies key concepts from the interview about humane livestock management	
Describes rationale for each key concept identified	
Identifies new or altered goals for the article	
Describes rationale for each goal they identified	
Total Checks	
Should have four checks, for each interview experience completed.	
End of Lesson	
Turn in notes to editor	
Identifies important aspects of their "on-farm" experiences	
Describes rationale for each important aspect they identified	
Identifies the key concepts from any "interviews" they completed	
Describes rationale for each key concept they identified	
Identifies personal goals for the article	
Describes rationale for each goal they identified	
Defines humane livestock management	
Total Checks	
Should have all seven checks.	