Rethinking course design through building student competencies: process, implementation, and outcomes in CRD 20-Food Systems

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Faculty Mentoring Faculty Program, UC Davis, 2/5/10
Outline

- Introduction
  - Teaching philosophy
  - Competencies
- CRD 20: Food Systems
  - Course overview
  - Design process
  - Broad groupings of competencies in CRD 20
- Implementation
- Outcomes
Teaching philosophy

- Ken Bain (2004) on what the best college teachers understand about learning and knowledge:
  - knowledge is socially constructed
  - mental models change slowly*
  - learning is based on interests
  - learning is based on questions
Transformative pedagogy as a base

The main purpose behind my teaching is personal transformation of students from received learners into life-long learners who:

- understand their values and interests;
- use analysis to inform their actions and choices; and
- develop and employ critical consciousness (Freire 1973; hooks 1994)
A competency is “a combination of skills, abilities, and knowledge needed to perform a specific task” (U.S. Department of Education 2001: 1, cited in Voorhees 2001)

Competencies help us be explicit about taking learning beyond absorption of course material

by combining knowledge and action, we require learners to apply their knowledge in specific tasks, which is arguably a deeper kind of learning
Figure 1.1. A Conceptual Learning Model

Kolb’s learning cycle

Concrete Experience
Learning by experiencing
- Learning from specific experiences
- Relating to people
- Being sensitive to feelings and people

Active Experimentation
Learning by doing
- Showing the ability to get things done
- Taking risks
- Influencing people and events through action

Abstract Conceptualization
Learning by thinking
- Analyzing ideas logically
- Planning systematically
- Acting on an intellectual understanding of a situation

Reflective Observation
Learning by reflecting
- Observing carefully before making judgments
- Viewing issues from different perspectives
- Looking for the meaning of things
Kolb’s learning cycle

Concrete Experience
- Learning by experiencing
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Take in experience
Kolb’s learning cycle

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Kolb’s learning cycle

**Concrete Experience**
- Learning from specific experiences
- Relating to people
- Being sensitive to feelings and people

**Reflective Observation**
- Observing carefully before making judgments
- Viewing issues from different perspectives
- Looking for the meaning of things

**Active Experimentation**
- Showing the ability to get things done
- Taking risks
- Influencing people and events through action

**Abstract Conceptualization**
- Analyzing ideas logically
- Planning systematically
- Acting on an intellectual understanding of a situation

**Concrete**
- deal with experience

**Abstract**
Kolb’s learning cycle

Concrete Experience
Learning by experiencing
- Learning from specific experiences
- Relating to people
- Being sensitive to feelings and people

Active Experimentation
Learning by doing
- Showing the ability to get things done
- Taking risks
- Influencing people and events through action

Reflective Observation
Learning by reflecting
- Observing carefully before making judgments
- Viewing issues from different perspectives
- Looking for the meaning of things

Abstract Conceptualization
Learning by thinking
- Analyzing ideas logically
- Planning systematically
- Acting on an intellectual understanding of a situation
Kolb’s take-home message:
When you use both the concrete and the abstract modes to take in experience, and when you both reflect and act on that experience, you expand your potential to learn.
Implications for course design

- To more fully learn, or to learn more deeply, students need to:
  - think
  - act/experiment
  - experience
  - reflect

- Competencies are one way to prioritize different parts of the learning cycle & bring them together for deeper learning
Overview of CRD 20: Food Systems
I. INTRODUCTION
Sustainable agriculture & food systems: why perspective matters

II. PART I: SOCIAL ASPECTS OF AGRI-FOOD SYSTEMS
Society and its relationship to agriculture and food
Food culture around the world
What does race/ethnicity, gender, and class have to do with food?
What ever happened to the family farm?
How have globalization and concentration affected the food system?

III. PART II: CRITICAL ISSUES & CASES IN AGRI-FOOD STUDIES
Why do so many go hungry in a world of plenty?
How do we explain the obesity epidemic?
Should we eat meat? Questions about modern animal agriculture
Who benefits from biotechnology?
What about farmworkers and food workers? Exploitation, organizing, & justice
Food safety: for whom, and at what cost?
How will fossil-fuel dependent societies be affected by peak oil?

IV. PART III: EFFORTS TO RESHAPE FOOD SYSTEMS
The future of food: current social movements and activism around food
Organic agriculture and food to the rescue?
Fair trade: can South-North trade be made truly fair?
Local: what role does and can it play in sustainable agriculture?
What role can and should students play in the food system?
Exams

- Exams - essay questions available 4 weeks before due date; outlines required; grading rubric part of exam assignment
- based on a number of premises, including:
  - knowledge is constructed
  - that questions:
    - are the basis of all inquiries
    - provide a framework on which to hang knowledge gained from reading
    - provide a guide for classroom discussion
  - students should have an opportunity to receive feedback before being assessed (receiving grades)
Lab

- Labs - 3-hour session per week for students, based on the following premises:
  - hands-on, experiential learning opportunities are powerful, and should not be restricted to biophysical sciences
  - social science involves asking questions about the actions and understandings of other people (e.g., surveys, interviews, observations)
  - by providing a structured experience, students can come to a basic understanding of how social science knowledge is created through the research process
<table>
<thead>
<tr>
<th>Lab #</th>
<th>Lab 1</th>
<th>Lab 2</th>
<th>Lab 3</th>
<th>Lab 4</th>
<th>Lab 5</th>
<th>Lab 6</th>
<th>Lab 7</th>
<th>Lab 8</th>
<th>Lab 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Sept. 30</td>
<td>Oct. 7</td>
<td>Oct. 14</td>
<td>Oct. 21</td>
<td>Oct. 28</td>
<td>Nov. 4</td>
<td>Nov. 18*</td>
<td>Nov. 25</td>
<td>Dec. 2</td>
</tr>
<tr>
<td>Preparation (to do before lab)</td>
<td>Learning style assignment + lecture readings &amp; overview</td>
<td>Lab Readings 1-5</td>
<td>Team research &amp; interview questions for Field Trip 2</td>
<td>Team report-out + Lab Readings 6-7</td>
<td>Team research &amp; interview questions for Field Trip 3</td>
<td>Team report-out + Lab Readings 8-10</td>
<td>Team research &amp; interview questions for Field Trip 4</td>
<td>Team report-out</td>
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<tr>
<td>Due (assignments to be turned in at start of lab)</td>
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<tr>
<td>Time in lab</td>
<td>Learning styles group activity</td>
<td>Field Trip 1, continued: Rapid Campus Appraisal (NOTE: Bring bikes and meet at first field trip location)</td>
<td>Field Trip 2: Farming</td>
<td>Field Trip 3: Food Industry (Processing, Distribution, &amp; Retail)</td>
<td>Field Trip 4: Food Consumption &amp; Disposal</td>
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<td>Report-out from each team on Field Trip 4</td>
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<td></td>
<td>Learning styles reflection &amp; sharing with class</td>
<td>Discuss &amp; rehearse field work protocol</td>
<td>Report-out from each team on Field Trip 2</td>
<td>Report-out from each team on Field Trip 3</td>
<td>Report-out from each team on Field Trip 4</td>
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<td></td>
<td>TA mini-lecture: Introduce learning goals for lab &amp; learner document</td>
<td>TA mini-lecture: Introduce Team Project 2</td>
<td>TA + Team 2 mini-lecture: Introduce Field Trip 3</td>
<td>TA + Team 3 mini-lecture: Introduce Field Trip 4</td>
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<td></td>
<td>TA mini-lecture: Introduce Team Project 1 &amp; Field Trip 1</td>
<td>TA + Team 1 mini-lecture: Introduce Field Trip 2</td>
<td>Create research &amp; interview questions, Field Trip 3</td>
<td>Create research &amp; interview questions, Field Trip 4</td>
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<td></td>
<td>Field Trips 2-4 logistics</td>
<td>Teams creation, location selection, &amp; research &amp; interview question creation</td>
<td>Discussion: Lab Readings 1-5 + lecture readings</td>
<td>Discussion: Lab Readings 6-7 + lecture readings</td>
<td>Discussion: Lab Readings 8-10 + lecture readings</td>
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<td></td>
<td>Field Trip 1: Rapid Campus Appraisal</td>
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*Note: no lab on Nov. 11, which is Veteran's Day.
Beware of Guard Rooster
Meat Science Laboratory

CUSTOMER PARKING ONLY
All produce on the shelves below
ORGANICALLY
grown

Photo by
Mercedes de La Riva
Assignments/activities

- Assignments
  - Learning Style Assessment (VAK)
  - Team Projects 1 (on-campus) & 2 (off-campus)
  - Cross-Team Synthesis
  - Food Diary
  - Reading Journal
  - Learner Document - portfolio with reflective essay

- Activities (in-class)
  - Profile
  - Student interests: what do we want to learn about?
  - Food systems mind map (before & after)
  - Competency self-assessments (before, middle, after)
How did we get here?

Design process

Delphi study

Partial review of sustainability curricula using competencies (MSU)

Identification of skills, content, & experiences

Instructor reflection on important competencies

Example syllabus & activities from SAFS curriculum committee

Synthesis to identify specific competencies

Brainstorming of possible assignments & activities

Draft list of competencies

Consultation with Laurie Thorp (MSU)

Iterative refinement of competencies

Final list of competencies

Final course materials

Refinement of assignments, activities, & syllabus

Review of syllabus & some activities & assignments

LEGEND

Object/Action | Process | Result
---|---|---
Actor(s) | Galt | Parr et al. | Galt & Parr | Lickter & Beckett
Broad groupings of competencies for CRD 20

- Ways of Knowing and Learning
- Understanding Values
- The Inquiry Process
- Analysis
- Interpersonal Skills
- Writing
- Presenting
Ways of Knowing and Learning

- Understand your preferred learning style.
- Develop ideas for improving your individual and collaborative learning.
- Reflect on experiences learning as an individual and as a group, in the classroom and in the field.
- Identify differences between various epistemologies (a.k.a. research perspectives, theoretical lenses, paradigms).
Analysis

- Identify sections of the food system (production, processing, distribution, retail, consumption, disposal).
- Compare and contrast segments of the food system (conventional, organic, etc.).
- Assess multiple locations within the food system using questions related to social, economic, and environmental criteria.
- Demonstrate systems thinking, including identification of components, relations, and setting boundaries.
- Interpret food choices based on different cultural identities and positions in society.
- Describe the relationship between structure and agency.
Interpersonal Skills

- Understand small group processes.
- Practice group decision-making through dialogue and consensus.
- Co-manage fieldwork project logistics.
Writing

- Organize and express ideas clearly in outline and/or draft form.
- Connect concepts and ideas from class, labs, readings/videos, and your own ideas.
- Engage in the revision process as a necessary part of good writing.
Presenting

- Demonstrate understanding of principles of public speaking.

- Present research findings using visual, oral, and textual communication.
Implementation

- Activities and assignments served as the multifunctional tools to:
  - develop student competencies (certain assignments strongly focused on a few, while others assignments were built on many)
  - assess student learning
  - assess how we were doing as teachers
Outcomes

- Student self-assessment
- Course evaluations
  - UCD standard evaluation, with student-created additions
  - TRC end-of-quarter interview
- Rate My Professor
Figure 1.1. A Conceptual Learning Model


- Instructor assessment
- Student self-assessment
- Learning styles assessment
Student self-assessment #1, start of quarter

Competencies for Students to Develop, Start of Quarter Evaluation
CRD 20: Food Systems, UC Davis, Fall 2009  
Ryan E. Galt

A competency is “a combination of skills, abilities, and knowledge needed to perform a specific task” (U.S. Department of Education 2001:1, cited in Voorhees 2001). This sheet shows the specific competencies this class can help you develop. You will assess yourself on these competencies three times, and these assessments will be used for your Learner Document assignment. For the first self-assessment, focus on the level of development, and place a check mark in the box where you feel that you fit currently (the levels of development are found in the table footnote). Do the same for the second and third assessment, and add a check mark to the assignments that have helped you develop the competency.

<table>
<thead>
<tr>
<th>Ways of Knowing and Learning</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LS</td>
<td>RN</td>
<td>FD</td>
</tr>
<tr>
<td>Understand your preferred learning style.</td>
<td>6</td>
<td>12</td>
<td>8.5</td>
</tr>
<tr>
<td>Develop ideas for improving your individual and collaborative learning.</td>
<td>9</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Reflect on experiences learning as an individual and as a group, in the classroom and in the field.</td>
<td>5</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Identify differences between various epistemologies (a.k.a. research perspectives, theoretical lenses).</td>
<td>14</td>
<td>10</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Understanding Values</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>LS</td>
<td>RN</td>
<td>FD</td>
</tr>
<tr>
<td>Examine personal values as they relate to food and the food system.</td>
<td>4</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>Identify values underlying peer and popular conceptions of sustainable food and food systems.</td>
<td>7</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Explain the differences between one’s own values and the values of others concerning the sustainability of food and food systems.</td>
<td>7</td>
<td>12</td>
<td>11</td>
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<table>
<thead>
<tr>
<th>The Inquiry Process</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>LS</td>
<td>RN</td>
<td>FD</td>
</tr>
<tr>
<td>Pose research questions that address your interests and correspond to a theoretical lens used in agri-food studies.</td>
<td>14</td>
<td>9</td>
<td>6</td>
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<tr>
<td>Create interview questions to answer research questions.</td>
<td>11</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Use field-based research methods (interviews and observation) involving food system actors and locations.</td>
<td>13</td>
<td>9</td>
<td>7</td>
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<tr>
<td>Perform collaborative learning in teams through field research and analysis.</td>
<td>8</td>
<td>13</td>
<td>8</td>
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<tr>
<td>Identify gaps in current knowledge and perspective.</td>
<td>12</td>
<td>36</td>
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<table>
<thead>
<tr>
<th>Analysis</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
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<tbody>
<tr>
<td></td>
<td>LS</td>
<td>RN</td>
<td>FD</td>
</tr>
<tr>
<td>Identify sections of the food system (production, processing, distribution, retail, consumption, disposal).</td>
<td>11</td>
<td>12</td>
<td>4.5</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Assignments &amp; Activities</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
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<tbody>
<tr>
<td></td>
<td>LS</td>
<td>RN</td>
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</tr>
<tr>
<td>Compare and contrast segments of the food system (conventional, organic, etc.).</td>
<td>5.5</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Assess multiple locations within the food system using questions related to social, economic, and environmental criteria.</td>
<td>5</td>
<td>12</td>
<td>2.5</td>
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<tr>
<td>Demonstrate systems thinking, including identification of components, relations, and setting boundaries.</td>
<td>15</td>
<td>9.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Interpret food choices based on different cultural identities and positions in society.</td>
<td>14</td>
<td>11</td>
<td>5.5</td>
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<tr>
<td>Describe the relationship between structure and agency.</td>
<td>18</td>
<td>6.5</td>
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</table>

<table>
<thead>
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<th>Interpersonal Skills</th>
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<th>Increase/Decrease</th>
<th>Changed Understanding</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>LS</td>
<td>RN</td>
<td>FD</td>
</tr>
<tr>
<td>Understand small group processes.</td>
<td>3</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>Practice group decision-making through dialogue and consensus.</td>
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<td>14</td>
<td>9.5</td>
</tr>
<tr>
<td>Co-manage fieldwork project logistics.</td>
<td>9</td>
<td>8.5</td>
<td>8.5</td>
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</table>

<table>
<thead>
<tr>
<th>Writing</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
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<tbody>
<tr>
<td></td>
<td>LS</td>
<td>RN</td>
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<tr>
<td>Organize and express ideas clearly in outline and/or draft form.</td>
<td>3.5</td>
<td>13</td>
<td>8.5</td>
</tr>
<tr>
<td>Connect concepts and ideas from class, labs, readings/videos, and your own ideas.</td>
<td>5</td>
<td>9.5</td>
<td>12</td>
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<tr>
<td>Engage in the revision process as a necessary part of good writing.</td>
<td>6</td>
<td>9.5</td>
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<table>
<thead>
<tr>
<th>Presenting</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
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<tr>
<td></td>
<td>LS</td>
<td>RN</td>
<td>FD</td>
</tr>
<tr>
<td>Demonstrate understanding of principles of public speaking.</td>
<td>8.5</td>
<td>12</td>
<td>6.5</td>
</tr>
<tr>
<td>Present research findings using visual, oral, and textual communication.</td>
<td>8</td>
<td>13</td>
<td>6.5</td>
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</tbody>
</table>

Note: activities that we do in lecture and lab will help develop these competencies, but they are not included for the sake of simplicity.

1 Preparatory (am able to explore and experiment with the activity), I=intermediate (can perform the activity successfully and correctly complete it), A=advanced (can demonstrate versatility with the activity, including adaptation in new contexts), M=mastery (possess full versatility and is no longer challenged by the activity, regardless of context)

2 LS=VAK Learning Style Activity, RN=Reading Notebooks, FD=Food Diary, TP1=Team Project 1, E1=Midterm Exam, TP2=Team Project 2, CTP=Cross-Team Project, E2=Final Exam, LD=Learner Document.
### Student self-assessment #2, mid-quarter

#### Competencies for Students to Develop, Mid-Quarter Evaluation

CRD 20: Food Systems, UC Davis, Fall 2009
Ryan E. Galt

A competency is “a combination of skills, abilities, and knowledge needed to perform a specific task” (U.S. Department of Education 2001:1, cited in Voorhees 2001). This sheet shows the specific competencies this class can help you develop. You will assess yourself on these competencies three times, and these assessments will be used for your Learner Document assignment. For the first self-assessment, focus on the level of development, and place a check mark in the box where you feel that you fit currently (the levels of development are found in the table footnote). Do the same for the second and third assessment, and add a check mark to the assignments that have helped you develop the competency.

<table>
<thead>
<tr>
<th>Ways of Knowing and Learning</th>
<th>Assignments &amp; Activities</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
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</thead>
<tbody>
<tr>
<td>Understand your preferred learning style.</td>
<td>2 6 4 1</td>
<td>1 8 17 25 19 9 0 2</td>
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<tr>
<td>Develop ideas for improving your individual and collaborative learning.</td>
<td>10 7 15 4 3</td>
<td>1 15 12 1 14 14 0 8</td>
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<tr>
<td>Reflect on experiences learning as an individual and as a group, in the classroom and in the field.</td>
<td>8 6 18 10 7</td>
<td>1 9.5 14 4 18 10 0 3</td>
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<tr>
<td>Identify differences between various epistemologies (a.k.a. research perspectives, theoretical lenses).</td>
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<td>3.5 17 6.5 1 17 10 1 6</td>
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#### Understanding Values

- Examine personal values as they relate to food and the food system. | 1 16 19 10 12 3 |
- Identify values underlying peer and popular conceptions of sustainable food and food systems. | 2 18 13 12 12 8 |
- Explain the differences between one’s own values and the values of others concerning the sustainability of food and food systems. | 4 9 13 15 13 10 |

#### The Inquiry Process

- Pose research questions that address your interests and correspond to a theoretical lens used in agri-food studies. | 2 3 8 23 12 15 |
- Create interview questions to answer research questions. | 2 1 7 27 4 17 |
- Use field-based research methods (interviews and observation) involving food system actors and locations. | 1 0 8 25 2 17 |
- Perform collaborative learning in teams through field research and analysis. | 2 0 3 27 0 17 |
- Identify gaps in current knowledge and perspective. | 5 12 12 21 13 14 |

#### Analysis

- Identify sections of the food system (production, processing, distribution, retail, consumption, disposal). | 1 15 16 21 15 15 |

#### Assignments & Activities

<table>
<thead>
<tr>
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<tbody>
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<td>2.5</td>
<td>12</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>3.5</td>
<td>15</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>3.5</td>
<td>10</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
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<td>9</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>1</td>
<td>23</td>
</tr>
</tbody>
</table>

#### Interpersonal Skills

- Understand small group processes. | 2 1 2 24 | 1 16 | 1.5 | 7.5 | 14 | 4 | 15 | 13 | 0 | 3 |
- Practice group decision-making through dialogue and consensus. | 1 1 2 23 | 1 16 | 0 | 11 | 14 | 4 | 15 | 13 | 0 | 5 |
- Co-manage fieldwork project logistics. | 0 1 1 18 | 1 13 | 2 | 2 | 9 | 11 | 3 | 11 | 17 | 0 | 3 |

#### Writing

- Organize and express ideas clearly in outline and/or draft form. | 7 | 10 | 3 | 23 | 2 | 4 | 9.5 | 11 | 3 | 12 | 13 | 3 | 3 |
- Connect concepts and ideas from class, labs, readings/videos, and your own ideas. | 3 | 12 | 9 | 8 | 25 | 3 | 11 | 12 | 3 | 17 | 11 | 0 | 4 |
- Engage in the revision process as a necessary part of good writing. | 0 | 3 | 7 | 3 | 17 | 2 | 3 | 12 | 6 | 4 | 6 | 20 | 2 | 4 |

#### Presenting

- Demonstrate understanding of principles of public speaking. | 3 | 0 | 1 | 23 | 1 | 14 | 1 | 12 | 9.5 | 3 | 15 | 13 | 0 | 2 |
- Present research findings using visual, oral, and textual communication. | 1 | 2 | 5 | 22 | 3 | 15 | 2 | 11 | 9 | 3 | 13 | 15 | 0 | 3 |

<table>
<thead>
<tr>
<th>Estimated Level of Development</th>
<th>Assignments &amp; Activities</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st quartile</td>
<td>4th quartile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st quartile</td>
<td>4th quartile</td>
<td></td>
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<tr>
<td>1st quartile</td>
<td>4th quartile</td>
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</tr>
<tr>
<td>1st quartile</td>
<td>4th quartile</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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1. LS=VAK Learning Style Activity, RN=Reading Notebooks, FD=Food Diary, TP1=Team Project 1, E1=Midterm Exam, TP2=Team Project 2, CTP=Cross-Team Project, E2=Final Exam, LD=Learner Document. NOTE: other activities that we do in lecture and lab will help develop these competencies, but they are not included for the sake of simplicity.

2. P=preparatory (am able to explore and experiment with the activity), I=intermediate (can perform the activity successfully and correctly complete it), A=advanced (can demonstrate versatility with the activity, including adaptation in new contexts), M=mastery (possess full versatility and is no longer challenged by the activity, regardless of context).

---

**Legend**

- **1st quartile**
- **2nd quartile**
- **3rd quartile**
- **4th quartile**
### Competencies for Students to Develop, End-of-Quarter Evaluation

**CRD 20: Food Systems, UC Davis, Fall 2009**

Ryan E. Galt

A competency is “a combination of skills, abilities, and knowledge needed to perform a specific task” (U.S. Department of Education 2001: 1, cited in Voorhees 2001). This sheet shows the specific competencies this class can help you develop. You will assess yourself on these competencies three times, and these assessments will be used for your Learner Document assignment. For the first self-assessment, focus on the level of development, and place a check mark in the box where you feel that you fit currently (the levels of development are found in the table footnotes). Do the same for the second and third assessment, and add a check mark to the assignments that have helped you develop the competency.

#### Ways of Knowing and Learning

<table>
<thead>
<tr>
<th>Assignment &amp; Activities</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand your preferred learning style.</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Develop ideas for improving your individual and collaborative learning.</td>
<td>8</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Reflect on experiences learning as an individual and as a group, in the classroom and in the field.</td>
<td>4</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Identify differences between various epistemologies (a.k.a. research perspectives, theoretical lenses).</td>
<td>2</td>
<td>8</td>
<td>5</td>
</tr>
</tbody>
</table>

#### Understanding Values

<table>
<thead>
<tr>
<th>Assignment &amp; Activities</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examine personal values as they relate to food and the food system.</td>
<td>3</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Identify values underlying peer and popular conceptions of sustainable food and food systems.</td>
<td>1</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Explain the differences between one's own values and the values of others concerning the sustainability of food and food systems.</td>
<td>2</td>
<td>14</td>
<td>13</td>
</tr>
</tbody>
</table>

#### The Inquiry Process

<table>
<thead>
<tr>
<th>Assignment &amp; Activities</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pose research questions that address your interests and correspond to a theoretical lens used in agri-food studies.</td>
<td>1</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Create interview questions to answer research questions.</td>
<td>0</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Use field-based research methods (interviews and observation) involving food system actors and locations.</td>
<td>0</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Perform collaborative learning in teams through field research and analysis.</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Identify gaps in current knowledge and perspective.</td>
<td>4</td>
<td>13</td>
<td>11</td>
</tr>
</tbody>
</table>

#### Analysis

<table>
<thead>
<tr>
<th>Assignment &amp; Activities</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify sections of the food system (production, processing, distribution, retail, consumption, disposal).</td>
<td>2</td>
<td>13</td>
<td>9</td>
</tr>
</tbody>
</table>

### Interpersonal Skills

#### Understanding Values

<table>
<thead>
<tr>
<th>Assignment &amp; Activities</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand small group processes.</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Practice group decision-making through dialogue and consensus.</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Co-manage fieldwork project logistics.</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Writing

<table>
<thead>
<tr>
<th>Assignment &amp; Activities</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organize and express ideas clearly in outline and/or draft form.</td>
<td>1</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Connect concepts and ideas from class, labs, readings/videos, and your own ideas.</td>
<td>2</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Engage in the revision process as a necessary part of good writing.</td>
<td>0</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

### Presenting

<table>
<thead>
<tr>
<th>Assignment &amp; Activities</th>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate understanding of principles of public speaking.</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Present research findings using visual, oral, and textual communication.</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

---

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---

**LEGEND**

- **Assignments & Activities**
- **Level of Development**
- **Increase/Decrease**
- **Changed Understanding**

<table>
<thead>
<tr>
<th>Level of Development</th>
<th>Increase/Decrease</th>
<th>Changed Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st quartile</td>
<td>2nd quartile</td>
<td>3rd quartile</td>
</tr>
</tbody>
</table>

---

**Student self-assessment #3, end-of-quarter**
What to conclude from the self-assessments?

- Students’ analyses of their own learning suggested that they felt they were developing most of these competencies.
- Students changed their conceptualization of the specific competencies as they developed them.
- The course did a good job facilitating many competencies, & a poor job on some.
- Competency self-assessments get to a deeper and broader level of learning than just assessing demonstrations (turned-in materials).
Course evaluations

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know what is expected of me in this class</td>
<td>3.5</td>
<td>4.0</td>
</tr>
<tr>
<td>There is sufficient time in class for questions and discussion</td>
<td>3.9</td>
<td>4.2</td>
</tr>
<tr>
<td>Course assignments are valuable components of this course</td>
<td>3.0</td>
<td>4.1</td>
</tr>
<tr>
<td>I learned a great deal in this course</td>
<td>4.4</td>
<td>4.8</td>
</tr>
<tr>
<td>This is an excellent course</td>
<td>4.0</td>
<td>4.4</td>
</tr>
<tr>
<td>The instructor is an excellent teacher, overall</td>
<td>4.6</td>
<td>4.9</td>
</tr>
</tbody>
</table>

- Differences: we substantially changed labs 4-9 & I made the competencies explicit from the start; most feel I ask too much of them
### CRD 20

**Section**

<table>
<thead>
<tr>
<th>Enrollment</th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td>% responding</td>
<td>76%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>strongly agree</th>
<th>agree</th>
<th>mixed feelings</th>
<th>disagree</th>
<th>strongly disagree</th>
<th>X</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. I gained incentives and abilities to continue life-long learning.</td>
<td>24 (75%)</td>
<td>6 (19%)</td>
<td>2 (6%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>4.7</td>
<td>0.6</td>
<td>32</td>
</tr>
<tr>
<td>17. This class provided opportunities for experiential learning.</td>
<td>26 (81%)</td>
<td>6 (19%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>4.8</td>
<td>0.4</td>
<td>32</td>
</tr>
<tr>
<td>18. I felt engaged and involved in the learning process.</td>
<td>20 (63%)</td>
<td>9 (26%)</td>
<td>3 (9%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>4.5</td>
<td>0.7</td>
<td>32</td>
</tr>
<tr>
<td>19. This form inadequately measures my learning experience.</td>
<td>21 (70%)</td>
<td>4 (13%)</td>
<td>3 (10%)</td>
<td>1 (3%)</td>
<td>1 (3%)</td>
<td>4.4</td>
<td>1.0</td>
<td>30</td>
</tr>
<tr>
<td>20. The learning style used in this class helped me learn more, and more deeply.</td>
<td>20 (63%)</td>
<td>11 (34%)</td>
<td>1 (3%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>4.6</td>
<td>0.6</td>
<td>32</td>
</tr>
</tbody>
</table>
Most enriching class I have taken here at UC Davis. I have never had a professor that cared so deeply about the learning process than Ryan. He, and this class, are an asset to this University.
Comments related to competencies

1. What do you appreciate most about this section/this instructor’s teaching?
   * He was very passionate and knowledgeable.
   * The curriculums were really designed by professor.
   * There are lots of learning methods. (lecture, field trip, writing, group discussion...)
   * I learned theory as well as real world, reading.

2. What do you appreciate least about this section/this instructor’s teaching?
   I really appreciate the thoroughness and care of Ryan’s methods. I appreciate so much that he has a care about students learning, and I want to see much more of teaching styles like his at this university.
Most-liked assignments/activities

- For the TRC EQI we added questions, including: “What was the most valuable learning experience or assignment, and why?”

- Field trips - 15 of 32
- Exams (!) - 9 of 32
- Food Diary - 9 of 32
- Readings - 5 of 32
How to start, if you’re interested?

- I started with becoming explicit about the goals of my class, asking: “What do I want my students to be able to do after finishing this class?”
- worked toward specific goals and larger headings of competencies
- consultation with Laurie Thorp at MSU to go from general thoughts to finer-grain competencies
- This list then informs each activity/assignment
Acknowledgements

We gratefully acknowledge the help and support of the following people and institutions:

- Damian Parr, Ph.D. student in education/postdoc in the Agricultural Sustainability Institute
- UIIP grant & Chancellor’s Fellow Course Development Award from the Teaching Resource Center
- Maggie Lickter, B.Sc. student, independent major in sustainable agriculture and food systems
- Laurie Thorp, coordinator of the Residential Initiative on the Study of the Environment, Michigan State University
- Libby O’Sullivan, Julia Van Soelen Kim, & Aubrey White, M.Sc. students in Community Development and past TAs of CRD 20
- Leslie Madsen-Brooks, Coordinator of Faculty and TA Programs, Teaching Resource Center
- Mark Van Horn, Student Farm Director & Heidi Ballard, School of Education
- CRD 20 students, wherever you are, for being such good sports
Research informing SAFS major


References


