Designing a Principles of Entrepreneurship Course
Daniel Michael Ferguson*, James Edwin Cawthorne Jr. and Ruth Streveler

Abstract - This paper describes the redesign of a course, Principles of Entrepreneurship (Principles), using education models to align the content, assessment, and pedagogy decisions for the course. The purpose of this paper is to demonstrate how to align “what we want the student to know” (course objectives) with “how can students demonstrate they understand it” (assessment) by selecting an approach to “how can I best teach the class” (pedagogy) that allows the student to be successful. The education models of Wiggins and McTighe for understanding content, Pelligrino’s assessment triangles, and Perkins’s learning experiences provides a means for grounding course design decisions in educational literature and research, as opposed to relying on one’s instinct. Wiggins and McTighe have defined a hierarchical model for identifying what learning outcomes should be the objectives of a student learning experience, and therefore allowing instructors to differentiate between enduring understandings and other objectives for the course. Pelligrino’s assessment triangle approach integrates the desired student outcomes with the student learning activities (Perkins) by asking the course designer to think through appropriate assessment activities considering what cognitive theory, or other learning theory, the student should be engaging. Finally, Perkins’s seven types of learning experiences provides a range of pedagogical-oriented opportunities for conducting the classroom learning experience that best aligns with the identified student learning objective and assessment activity. This paper demonstrates the process of course alignment among content selection, assessment and pedagogy using an introduction to an entrepreneurship course as the example.

1. Introduction

This paper describes a course alignment design approach using the educational models of Wiggins and McTighe and Perkins and the assessment triangle for measuring learning proposed by Pelligrino for assessing an introductory entrepreneurship course open to all majors across a university. A specific course, Principles of Entrepreneurship (Principles), is used to illustrate the methodology inherent in using Pellegrino's approach to course assessment, Wiggins and McTighe's methodology for determining 'what' should be learned and Perkins 'Learning by Wholes' curriculum design strategy for identifying 'how' students can best learn the course content. These two course design techniques are used to identify and organize Principles learning activities and knowledge gains which are then assessed using Pellegrino's methodology.

Principles is designed for students in any matriculation year (freshmen to senior) without prerequisites and for a student matriculating in any college across a university. Principles introduces students to entrepreneurial thinking and to two key entrepreneurial thinking skills: opportunity recognition (Shane and Venkataraman, 2000; Chung, 2004; Baron, 2006; Nixdorff, 2008; Kinghorn, 2008) and persuasive presentation skills (Bygrave and Hofer, 1991; Clark, 2008; Zafar, 2010; Hood and Young, 1993) as well as how to evaluate entrepreneurial opportunities through a feasibility analysis.

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2. Principles Course Content as defined by the Wiggins and McTighe's methodology

The 'enduring understandings' that a student should take away from Principles are the following (Wiggins and McTighe, 1998):

- Opportunity Recognition (Shane and Venkataraman, 2000).
- Presentation Skills (Hood and Young, 1993).
- Entrepreneurial Competencies (Mitchelmore and Rowley, 2010).

The ability to recognize and evaluate a new venture opportunity is cited as a dominant entrepreneurial thinking skill (Mitchelmore and Rowley, 2010; Fiet, 2001; Kuratko et al., 1993). Acquiring the resources to take advantage of the recognized opportunity is equally important to entrepreneurial successes (Shane and Venkataraman, 2000; Mitchelmore and Rowley, 2010) and this skill rests fundamentally on one's persuasive presentation skills, both oral and written (Hood and Young, 1993). Finally, many different entrepreneurial thinking skills or personal traits and skills are associated with successful entrepreneurs, like risk-taking propensity, decision making, motivation, leadership, exploitation and many other traits and skills along with the recognition of the unique combination of these skills resident in individual entrepreneurs (Mitchelmore and Rowley, 2010; Williams, 2010).

The understandings that are ‘important to know’ include (Wiggins and McTighe, 1998):

- Techniques for assessing a new venture idea: customer/value analysis, competition analysis, people and production strategies, and financial analysis (Barringer and Ireland, 2008; Vesper, 2010).
- Best practices for preparing persuasive presentations (Hood and Young, 1993; Brody, 2007).

Standard techniques for assessing a new venture idea (market analysis, competitor analysis, people and production strategies, and financial analysis) are identified in the leading entrepreneurship texts (Barringer and Ireland, 2008; Vesper, 2010; Kuratko, 2013) and skills incorporating this knowledge are cited as critical aspects of entrepreneurial behavior (Mitchelmore and Rowley, 2010; Fiet, 2001).

The understandings that are ‘good to know’ cover the following (Wiggins and McTighe, 1998):

- Where to find and how to use market, product, competitor, and customer data (Vesper, 2010)
- What kinds of tasks and decisions are made in starting a new venture (Vesper, 2010)
- The value of practice and feedback in preparing and making persuasive presentations (Brody, 2007)

The first two 'good to know' understandings are covered as key chapters in popular entrepreneurship textbooks (Barringer and Ireland, 2008; Vesper, 2010; Kuratko, 2013) as well as in the identification of entrepreneurial thinking traits and skills (Mitchelmore and Rowley, 2010). The value of practice is emphasized in texts on persuasive speaking, (Abrams and Vallone, 2005) and research in the development of skills has established that people move through several stages of skill development, from novice to expert, usually starting at a novice level, (Benner, 1982; Dreyfus and Dreyfus, 1980) which is where most students in Principles should start given the cross-university nature and multiple grade levels of the students.

Figure 1 displays these levels of understanding in the Wiggins and McTighe (1998) egg diagram and Table 1 displays the top three 'understandings' given a value rating based on importance according to the filters suggested by Wiggins and McTighe.
Table 1. Evaluating Enduring Understandings According to the Wiggins and McTighe's (1998) Filters

<table>
<thead>
<tr>
<th>Understandings /Filters</th>
<th>Big idea beyond the classroom</th>
<th>Heart of discipline</th>
<th>Require uncoverage</th>
<th>Engage students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluate a new venture opportunity</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Deliver a persuasive presentation</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Know entrepreneurial competencies</td>
<td>Medium</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

Figure 1. Wiggins-McTigue’s Concept of Value Model Applied to Principles

3. Learning Objectives of Principles

The learning objectives or goals of Principles are shown in Figure 2 and are organized in terms of the three levels of Wiggins & McTighe’s understandings.
• Opportunity Recognition: Student will be able to:
  o Recall or locate data in the text for quizzes
  o Create ideas for the idea pitch and new venture analysis
  o Acquire customer/market data
  o Analyze customer/market data
  o Prepare a customer/market analysis
  o Acquire competition data
  o Analyze competitor data
  o Prepare a competitor analysis
  o Acquire data for a product design and/or production plan/team plan/organization plan
  o Prepare a product design and/or production plan/team plan/organization plan
  o Construct a scenario-based financial analysis
  o Integrate the four feasibility analysis components into a final report

• Presentation Skills: Student will be able to:
  o Develop a two minute persuasive Idea Pitch
  o Deliver a two minute persuasive Idea Pitch
  o Develop a 10-minute feasibility analysis presentation
  o Deliver a 10-minute feasibility analysis presentation
  o Assess the quality of idea pitches given a rubric

• Entrepreneurial competencies: Student will be able to:
  o Create a reflection analyzing entrepreneurial competencies
  o Create a reflection that compares entrepreneurial competencies
  o Appraise strengths and weaknesses in entrepreneurial competencies
  o Assess their personal entrepreneurial competencies

Figure 2: Learning Objectives of Principles

4. How do the learning objectives fit into a cognitive skill taxonomy?

Bloom and the revised Bloom matrix of Anderson and Krathwohl have 6 levels of cognitive difficulty ranging from remembering to creating/synthesizing (Anderson et al., 2001). Table 2 places these learning objectives in the cognitive taxonomy of Anderson and Krathwohl's revised Bloom matrix. Xs in the matrix of Table 2 indicate the anticipated cognitive requirement of the learning objective.

Table 2 was created based upon the cognitive difficulty of the tasks and the desired student engagement in the task. The table illustrates that the cognitive requirements of Principles are set at high levels for the final course deliverables. These cognitive challenges may require significant scaffolding for freshmen and non-business majors in terms of their cognitive development and further suggests that a mastery approach and substantial peer interaction between business and non-business majors and freshmen and seniors may level out any preparation or cognitive maturity disparities in the students. In this course design, assessing entrepreneurial competencies, presentation skills and the feasibility analysis components are scaffolded towards increasingly difficult cognitive challenges that the student can move toward at differentiated paces.
### Table 2. Levels of Cognitive Difficulty for the Learning Objectives of Principles

<table>
<thead>
<tr>
<th>Principles Learning objective/Conceptual levels</th>
<th>Remembering</th>
<th>Understanding</th>
<th>Applying</th>
<th>Analyzing</th>
<th>Evaluating</th>
<th>Creating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Evaluate new venture opportunities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recall or locate data in the text for quizzes</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create ideas for the idea pitch and new venture analysis</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquire customer/market data</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analyze customer/market data</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare a customer/market analysis</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquire competition data</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analyze competitor data</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare a competitor analysis</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquire data for a product design and/or production plan/team plan</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare a prototype product design and/or initial production plan/team plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Decide what data and acquire financial data</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create financial models for their new venture idea</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construct a scenario-based financial analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Integrate the four feasibility analysis components into a final report</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exhibit and Assess presentation skills</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop a two minute persuasive Idea Pitch</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deliver a two minute persuasive Idea Pitch</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop a 10 minute feasibility analysis presentation</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deliver a 10 minute feasibility analysis presentation</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assess the quality of idea pitches, given a rubric/ Self Assess idea pitch</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Assess entrepreneurial competencies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create a reflection analyzing entrepreneurial competencies</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create a reflection that compares entrepreneurial competencies</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appraise strengths and weaknesses in entrepreneurial competencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Assess their personal entrepreneurial competencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

### 5. Assessment Triangle for Entrepreneurial Competencies

The Pelligrino assessment triangle for entrepreneurial competencies is shown in Figure 3. The cognitive corner is based on students learning entrepreneurial competencies through experiential learning, being guided towards mastery by apprentice modeling and through social construction of their knowledge. The assessment evidence is gathered through submission of student reflections on guest speakers and themselves. Interpretation of the reflections is done by reference to rubrics developed for the assessment.
of the reflections. Observations of the student’s in-class discussions can also confirm insight or lack of insight and understanding of entrepreneurial competencies.

**Figure 3. Assessment Triangle for Entrepreneurial Competencies**

6. **Assessment Triangle for Presentation Skills...**

The assessment triangle for presentation skills is shown in Figure 4. The cognitive corner indicates that students learn presentation skills through experiential learning experiences working towards mastery in an apprentice learning model and through social construction of their knowledge. The assessment evidence is class videos, class ratings by peers, ratings by external judges, scripts and slides that students create and the actual development and delivery of their two minute and ten minute presentations. Interpretation and evaluation of the evidence is done based upon a presentation rubric by the student’s peers, the instructor, and external judges.
7. Assessment Triangle for Feasibility Analysis of a New Venture

The assessment triangle for the evaluation of new opportunities is shown in Figure 5. The cognitive corner of Figure 5 indicates students are learning in an apprentice learning model and in an experiential learning framework. Their knowledge is being socially constructed by the feedback from peers and the instructor. The junior games support the experiential learning process that is the underlying theme for this introductory course (Perkins, 2009). The assessment evidence is iterative submissions for each of four analysis models along with a final integrative report which combines the four analysis elements and is the content basis for the final exam presentation. Interpretation of the evidence is accomplished by application of rubrics at formative and summative stages designed for each of the feasibility components. The final report (and final report presentation) can also be evaluated by external judges as is common in many entrepreneurship courses.
Writing for grammar and spelling criteria apply to all reflections. Requirements for the assessment of entrepreneurial competencies vary depending on the assignment. The writing mastery goal is no spelling errors and no grammatical errors. Also, a good writing style must be used for the paragraph or paragraphs that are submitted. The third and fourth criteria for each reflection relate to the content as the reflection must identify competencies and address the assigned analysis question(s). Scaffolded scoring for evaluating the reflections is shown in Table 3. Rating is on a Likert 1-5 scale: 1 is poor, 3 is expected, and 5 is excellent.
Table 3. Grading Criteria for Reflection Assignments and Expectations

<table>
<thead>
<tr>
<th>Reflection Assignment</th>
<th>1. Spelling and grammar</th>
<th>2. Writing quality</th>
<th>3. Analysis task completion</th>
<th>4. Overall quality of analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflection 1 Identifies competencies</td>
<td>&lt;3 errors</td>
<td>ok</td>
<td>complete</td>
<td>fair</td>
</tr>
<tr>
<td>Reflection 2 Compare competencies</td>
<td>&lt;2 errors</td>
<td>better</td>
<td>complete</td>
<td>good</td>
</tr>
<tr>
<td>Reflection 3 Ranks strength and weaknesses of two speakers</td>
<td>&lt;1 errors</td>
<td>better</td>
<td>complete</td>
<td>very good</td>
</tr>
<tr>
<td>Reflection 4 compare all 4 speakers</td>
<td>no errors</td>
<td>good</td>
<td>complete</td>
<td>excellent</td>
</tr>
<tr>
<td>Reflection 5 Assesses own entrepreneurial competencies</td>
<td>no errors</td>
<td>very good</td>
<td>complete</td>
<td>excellent</td>
</tr>
</tbody>
</table>

8. Assessment Worksheet for Entrepreneurial Competencies

The Entrepreneurial Competencies assessment worksheet in Table 4 discusses how to determine if the student has attained the cognitive skill of assessing entrepreneurial competencies and to what level this cognitive skill was developed. The primary evidence will be contained in reflections scaffolded across multiple exercises culminating in a self-assessment of entrepreneurial competencies. The interpretation of the evidence will be based on a grading rubric for the reflection (see Table 3) which is shared with the students. Pedagogical changes should be made based upon the evidence in the reflections and from observations of in-class think/pair/share exercises discussing the guest speaker reflections. The grading of reflection criteria 3 and 4 in Table 3 determine the student's progress and guide class discussions.

9. Assessment Worksheet for Presentation Skills

The assessment worksheet in Table 5 discusses how to determine the level of presentation skills the student has exhibited. The primary evidence is presentation rating sheets prepared at different times during the term by peers and external judges and videos of class practices, idea pitch competitions and final exam presentations for each student. The interpretation of this evidence is done using the presentation rubrics and adjusting for the prior knowledge and experience of each student. Pedagogical changes are made during the development of the skill based upon the evidence in the videos, competition judging, and feedback from the students who are assessing their peers' presentation skills.

The example grading criteria for presentation skills in Table 6 are focused on preparation and delivery techniques not the content of the presentation, which is also evaluated. Content creation tasks are also reinforcing the learning of opportunity recognition skills and students are emulating the entrepreneurial guest speakers that they observed (Svinicki, 2004; Fry and Kolb, 1979).

10. Assessment Worksheet for Feasibility Analysis of a New Venture

The assessment worksheet in Table 8 discusses how to evaluate the new venture opportunity skill. The summative evidence is the final exam report, and grading is facilitated by the judge's evaluation of the final presentation's content. Formative evidence is provided during the term and in-class discussions of their work. The interpretation of this evidence is done using the final report content rubric as indicated in the grading criteria. Pedagogical changes are made based upon the interim reports provided for each component and feedback from the students about difficulties with the four component reports.
The grading criteria and rubrics are shown in Table 7 and are specific to each category of feasibility analysis. The analysis quality expected of all non-business majors or freshmen in business is that of a novice in business concepts but sufficient to evaluate a new venture opportunity. Text and class lectures demonstrate how to acquire the data, frame the analysis and give direction to the learning of how to assess new venture opportunities.

**Table 4. Assessment Worksheet: Assess Entrepreneurial Competencies**

<table>
<thead>
<tr>
<th>Learning Goal</th>
<th>Assessment</th>
<th>Instructor Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student will be able to assess and compare entrepreneurial competencies evidenced by the entrepreneur guest speakers and appraise their own entrepreneurial competencies</td>
<td><strong>General:</strong> Four written reflections of increasing difficulty, in class discussions of guest speakers, final self-assessment of entrepreneurial competencies</td>
<td>1. Share reflection examples and reflection rubrics 2. View entrepreneur videos in class and practice assessment through think/pair/share exercises</td>
</tr>
<tr>
<td><strong>Claim:</strong> 1. Students will recognize and evaluate the entrepreneurial competencies evidenced by the entrepreneur guest speakers. 2. Students will discuss their insights in class and deepen their understanding through social construction of the analysis. 3. Students will appraise their own entrepreneurial competencies as a summative learning exercise.</td>
<td>3. Give comments back to each student on each reflection regarding their analysis of significant entrepreneurial skills or characteristics of guest speakers 4. Comment back to students after course is complete on their final reflection</td>
<td></td>
</tr>
<tr>
<td><strong>Task:</strong> 1. Attend talks or watch videos of four guest entrepreneur speakers. 2. Write reflections about what they thought were important characteristics displayed in the 4 entrepreneurs’ talks. 3. Write final reflection assessing their own entrepreneurial skills</td>
<td><strong>Formative evidence:</strong> Scaffold the reflections across the speakers to deepen learning: Reflections: 1. identify competencies 2. compare competencies 3. assess competencies</td>
<td></td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td>1. Four written one-page guest speaker reflections. 2. Quiz results from Barringer text chapter on traits and beliefs of entrepreneurs which also deals with myths and misconceptions. 3. One written one-page personal assessment of entrepreneurial skills.</td>
<td><strong>Summative Evidence</strong> 1. Fourth reflection summarizing across all four guest speakers 2. Personal assessment of entrepreneurial competencies <strong>Passing Grade:</strong> 3 out of 5 average on rubric criteria, assignments handed-in on timely basis</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>Misconceptions about entrepreneur behavior or beliefs are addressed in the text, readings, and in quiz questions.</td>
<td></td>
</tr>
<tr>
<td><strong>Speakers</strong> address other behaviors and beliefs or reinforce the corrections, e.g., entrepreneurs don't do it for money</td>
<td><strong>Evidence</strong></td>
<td>1. Spelling and grammar 2. Writing quality 3. Question(s) in assignment addressed 4. Overall quality of reflection.</td>
</tr>
</tbody>
</table>
### Designing a Principles of Entrepreneurship Course

#### Table 5. Assessment Work Sheet: Exhibit Presentation Skills

<table>
<thead>
<tr>
<th>Learning Goals</th>
<th>Assessment</th>
<th>Instructor Guidance</th>
</tr>
</thead>
</table>
| Students will be able to exhibit and critique persuasive presentation skills | **General:**  
1. Written script evidence  
2. Video and observation evidence from idea pitch competition and final exam presentation  
2. Provide presentation rubrics. |
| | **Claim:**  
1. Students will create and select ideas for their idea pitch and feasibility analysis of new venture  
2. Students will be able to prepare and deliver a two minute and a ten minute presentation  
3. Students will appraise the presentations of their peers | 3. Schedule class presentation practice.  
4. Use peer evaluation with rubrics in class.  
5. Use video feedback- peer & self-appraisal. |
| | **Task:**  
1. Use creativity/idea generation techniques for finding and selecting their course project topics  
2. read text: Winning Presentations in a Day  
3. Provide script drafts and practice in/out of class their two minutes and ten minute pitches  
4. Review and critique videos of previous classes and winning two minute Idea Pitches  
5. Reflect on and assess their idea pitch performance | 6. Pair up students in class practices to get more individual attention through peer feedback.  
7. Video tape and post idea pitch and final exam presentations.  
8 Arrange external judges. |
| **Comments** |  
Misconceptions about presentation skills and best practices in presentations are covered in the text and in readings. | |

#### Grading Criteria

3. How effectively and passionately does the presenter articulate the problem, solution and call to action?  
4. How effective or accomplished are the speaker’s skills? Did the presenter use movement, props, gestures or staging/dress to communicate his/her message?  
5. How well did the speaker answer the questions from the judges? Did the Q/A period strengthen the case for the idea?  

#### Evidence:

1. Bug lists and idea lists homework  
2. Presentation scripts and videos of practice in class of their own pitch  
3. In class use of rubrics to critiques of idea pitch practices  
4. Judges ratings from idea pitch competition and final exam presentation  
5. Students reflection on their idea pitch performance

**Formative Evidence**  
In class ratings of idea pitches using presentation rubrics.  
In class practice observations.  
In class peer reviews of feasibility analysis presentations using presentation rubrics.

**Summative evidence:**  
Video of their two presentations and external judge’s ratings of both presentation performances based upon presentation rubrics.

**Passing Grade**  
3 out of 5 on presentation skills in final exam
### Table 6: Criteria for Idea Pitch and Final Exam Presentation Delivery Skills

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Very poor = 1</th>
<th>Good = 3</th>
<th>Excellent = 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>How effectively and passionately does the presenter articulate the problem, solution and call to action?</td>
<td>Stated case is disorganized and not persuasive, no passion, no obvious commitment</td>
<td>Some conviction, good evidence included, and presentation has interesting if not convincing content and delivery.</td>
<td>Clearly passionate about opportunity, excited and committed to solution/idea. Convincing case and call to action.</td>
</tr>
<tr>
<td>How effective or accomplished are the speaker’s skills? Did the presenter use movement, props, gestures or staging/dress to communicate his/her message?</td>
<td>No time control, no eye contact, poor articulation, no vocal emphasis, no enhancement of delivery through props, dress or creative delivery techniques...</td>
<td>Acceptable pitch and delivery, obviously practiced timing. Professionally presented. Helped the audience understand the problem or solution with creative delivery or speaking techniques.</td>
<td>Solid eye contact, very persuasive, proper tone, proper dress and facial expressions, timing great. Used creative speaking or message delivery techniques to significantly enhance presentation.</td>
</tr>
<tr>
<td>How well did the speaker answer the questions from the judges? Did the Q/A period strengthen the case for the idea?</td>
<td>Speaker did not answer questions or provided answers which were not relevant to the judge's questions or defensive.</td>
<td>Speaker understood the questions and helped clarify points in the presentation to which the judge referred. Speaker repeated the question and made sure the question was answered.</td>
<td>Speaker's answers to judge's questions strengthened the case for the idea and speaker repeated the question. Speaker clarified the questions points effectively and added evidence to an already well-stated case.</td>
</tr>
</tbody>
</table>

### Table 7: Grading Rubrics for Learning of Opportunity Evaluation

<table>
<thead>
<tr>
<th>Grading Criteria</th>
<th>1 = poorly done</th>
<th>3 = well done</th>
<th>5 = very well done</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer /market-must identify who customer is and size of market, initial and potential market share and use market research course site.</td>
<td>No data collected, no evidence, did not think about customers or market</td>
<td>Framed answer/analysis based on some data and assumptions about market and customer penetration initially and longer term which are reasonable</td>
<td>Located or created market research that addressed important customer and market questions, realistic market share, used market research course site</td>
</tr>
<tr>
<td>Competition- must identify three competitors and five features of how they will compete, rating the competitors</td>
<td>Missed either or both competitors or features data in their analysis or data is not believable</td>
<td>Included both competitors and features in an analysis but did not assume or find reasonable data</td>
<td>Conducted research or located some competitive analysis that assisted the ranking and identification of three competitors and five features</td>
</tr>
<tr>
<td>Product/process/team-must identify the resources needed and how they will acquire and use these resources over time.</td>
<td>Did not cover two of three types of the resources needed</td>
<td>Discussed all the types of resources needed and has realistic assumptions about what can be accomplished in near term</td>
<td>Has a plan that appears feasible and well thought out in terms of all resources needed and how to integrate and implement them</td>
</tr>
<tr>
<td>Financial Scenarios- must do three income statements, worst and best case and go-to-hell case when nothing goes right, how will they survive?</td>
<td>Do not have one complete financial statement</td>
<td>Did the three required scenarios using realistic data</td>
<td>Have used data from other parts of feasibility analysis to create the three financial scenarios and a financial plan that appears realistic</td>
</tr>
</tbody>
</table>
Table 8. Assessment Work Sheet: Evaluate New Venture Opportunities

<table>
<thead>
<tr>
<th>Learning Goals</th>
<th>Assessment</th>
<th>Instructor Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will be able to construct and integrate customer/ market, competitor, organization/ product and financial analysis</td>
<td>General: 1. Class quizzes on text content 2. Interim reports submitted on each of four components 3. Written evidence in interim and final reports 4. Verbal evidence in final presentation</td>
<td>1. Provide samples of previous feasibility analysis reports.</td>
</tr>
<tr>
<td>Grading Criteria</td>
<td>Claim: 1. Students select an idea for a new product or service that they use for feasibility analysis 2. Students take quizzes on text chapters models, definitions and processes 3. Students prepare and discuss in class interim reports for feedback from peers and instructor</td>
<td>2. Discuss instructions for accessing information sources and use of analysis models 3. Critique and give feedback on interim reports</td>
</tr>
<tr>
<td>Customer /market-must identify who customer is and size of market, and use market research course site.</td>
<td>Task: 1. Read text and take quizzes 2. Research their ideas to provide the data required four component analysis 3. Use information sources and analysis matrices for component analysis 4. Discuss interim reports in class sessions 5. Deliver a presentation on feasibility analysis</td>
<td>4. Adjust final two weeks of classes based on student feedback to address their weak points in feasibility analysis process Formative data.</td>
</tr>
<tr>
<td>Competition- must identify three competitors and five features of how they will compete, rating the competitors</td>
<td>Evidence: 1. Text quiz results 2. Drafts of report sections as formative data 3. Class discussions on individual report sections, 4. Final written report and/or presentation slides and final presentation.</td>
<td>Summative data Final report and final presentation</td>
</tr>
<tr>
<td>Product/process/team-must identify the resources needed and how they will acquire and use these resources.</td>
<td></td>
<td>Passing Grade All four component analysis parts completed with level three average required content.</td>
</tr>
<tr>
<td>Financial Scenarios- must do three income statements, worst case, best case and go-to-hell case-when nothing goes right how will they survive? using excel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Alignment of Cognition and Assessment

Student learning is built around the learning frameworks that students experience, mainly experiential learning based upon the Kolb learning cycle and inserted in an apprentice frame-meaning they practice, get feedback, try again, and continue to observe, reflect, experiment and perform the skills as they build their entrepreneurial knowledge in each of the three principal enduring understandings.

12. Pedagogy Statement

This course is designed to be an experiential learning and project-based learning course fashioned to improve understanding of entrepreneurial competencies, presentations skills and evaluation of new venture opportunities. Kolb's learning cycle for experiential learning embodies the pedagogical strategies used to achieve each of the enduring understandings which are at the heart of the course, that is, the students conceptualize, experiment, experience and reflect on each of the enduring understandings central
to the learning experience (Fry and Kolb, 1979; Deakins and Wyper, 2010). The project-based learning in Principles emphasizes applying and integrating knowledge and skills for each of the enduring understandings (Cope and Watts, 2000). The curriculum design of the course is also guided by the approach of Perkins's seven principles for the design of curriculum (Perkins, 2009).

Figure 6 shows how the experiential student learning tasks and individual and group projects in Principles are related and sequenced. Circles capture assessing entrepreneurial competencies, doing a feasibility analysis and the presentation skill training. The boxes represent the starting events and the programmed activities in Principles.

13. Design of course activities - Pedagogy

Perkins's first design principle is to have students 'Play the whole game' to "understand the larger context of what they are learning." (Perkins, 2009) Principles has two project experiences that help the students play a junior version of the whole game. The first junior experience is playing a computer simulation game for one week, for example a computer simulation called Johnny Money. This business game involves starting a business and making the types of initial marketing, sales, competition, product, people, and financial decisions that any new business has to make. It is also a competitive game which synchs with the leisure activities of many college students (Nathan, 2006). You score points against the game but can compare your score nationally to other players and locally to everyone in your class. These types of learning games have proven effective in supporting learning in many venues (Tan and Ng, 2004).

A second junior game experience is the $5.00 student team game. This game requires each student to invest $5.00 and figure out a way, by creating a small business and delivering a product or service, to create revenue equal to ten times their investment in three weeks. There are simple rules for the $5.00 game, like not just writing a check or not doing anything unethical or illegal. In the $5.00 game students experience many of the innovation, communication, coordination and financial problems of a real
business involving multiple people. Most teams succeed in reaching their goals and usually target the stakeholders they know best—students on their campus. Student reports include financial, marketing, peer reviews and reflections. The $5.00 game emulates entrepreneurial startups, can be considered a junior experiential project, and is popular in similar forms in many entrepreneurship programs (Everett, 2003; Mullis and Orloff, 2008).

In addition, students have their own version of 'Shark Tank' in the Idea Pitch competition and final exam feasibility analysis presentation in front of external judges. Students are also asked to judge the entrepreneurial competencies of successful entrepreneurs who most often talk about both their successes and failures, thereby casting judgment on 'The Whole Game' of the guest speakers. Perkins's second design principle is 'to make the game worth playing' by including practices that help the students experiment with fear of failure and connect what they are learning to their lives in a way that helps generate deeper learning. Perkins calls this latter point generative learning (Svinicki, 2004).

Generative learning is included by having the students select the ideas for their two-minute idea pitches from bug lists or idea generation lists that they create. Their ideas are fun, personal, and talking about them passionately in an idea pitch helps deepen the memory of the presentation techniques that they learn along with 'talking about something that bugs them.' (Couger et al., 1993; Vijayaraghavan and Kaner, 2003; Gray and Choi, 2004).

In their multi-part feasibility analysis project they select the case topic, the strategies they believe worth pursuing, and shape the feasibility analysis to their interests and capabilities. This process builds student confidence and gives the students more control of their learning. Every student pitches his/her own idea and selects and builds his/her own case, an inherently motivating step (Perkins, 2009; Radenski, 2009).

Finally, in terms of the level of their cognitive development (Perry, 1968, 2-4), the instructor must provide structure and guidance suitable to students’ cognitive levels. Rubrics are provided for each of the major learning goals and the course map (as in Figure 5) and Principles's learning goals are shared with students. Feedback from peers and the instructor also occurs many times throughout the course and weekly from peers, the instructor, or the business game software.

Perkins's third design principle is to work on the hard parts. Breaking down a problem into component pieces and having students reconstruct the whole is the primary strategy for dealing with hard parts (Perkins, 2009). Breaking a cognitive skill into component pieces is done by identifying possible entrepreneurial competencies (Mitchelmore and Rowley, 2010) and providing detailed steps for preparing good presentations (Abrams and Vallone, 2005). For the feasibility analysis, the Barringer text (Barringer and Ireland, 2008) provides analysis models and techniques for each required analysis and is supplemented by instructions and examples for access to data sources provided by the instructor (e.g., US Census data).

The second strategy for working on the hard parts is to give students timely feedback through in-class peer and instructor feedback on each assignment based on the rubric shared with them. This feedback, however, needs to come with some training for peers so it has the desired positive effect and therefore the instructor must train his/her student peers to give "clarification, appreciation, and suggestive feedback." (Perkins, 2009) The opposite side of this coin, however, is to ask the students periodically to identify the hard parts for themselves and to shift class activities to specifically address their difficulties (Wankat and Oreovicz, 1993).

Perkins's fourth design principle is to 'play out of town,' which relates to transferring knowledge from what they are sensing to a new situation. Perkins describes two situations of transfer: surface transfer and deep transfer (Perkins, 2009). In Principles there are multiple opportunities for surface transfer: 1.
Listening to the entrepreneur guest speakers provides a chance to use their strategies in their idea pitch or feasibility analysis; 2. Every student in the class has a different new venture idea in his/her idea pitch or feasibility analysis idea so the students are constantly confronted with transferring their entrepreneurial thinking knowledge to a different topic, and 3. Cases and examples in every chapter in the Barringer text are also based on different facts and assumptions, which students must transfer to their own work (Barringer and Ireland, 2008).

In terms of deeper knowledge transfer there are two key opportunities designed into Principles: 1. Reflecting on your own entrepreneurial competencies provides a chance to appraise your own skills and knowledge compared to that of the guest speakers and reflect on all that you learned about entrepreneurial competencies leading to deeper retention of knowledge (Schön, 1987) and 2. Integrating the four types of feasibility analysis tools into one final report requires a level of mastery of those skills that may lead to longer retention of these models and analysis heuristics (Svinicki, 2004; Wankat and Oreovicz, 1993).

Perkins's fifth design principle is 'to uncover the hidden game.' (Perkins, 2009) There are three junior games in Principles: Johnny Money, the $5.00 game, and the student's idea for their feasibility analysis gives students junior experiences in playing the real game. There are also using four actual case stories about the hidden game in entrepreneurship in the form of four entrepreneurial speakers who talk about how they play their game. Finally sharing with the students the entrepreneurial myths raised by Kuratko (2013), the false presentation assumptions identified by Brody (2007), and encouraging the students to recognize and assess the diverse combinations of skills possessed by entrepreneurs (Michelmore and Rowley, 2010) uncovers the hidden game. In the student's final report a key section of their conclusion is whether they would choose to play the game they have analyzed. The purpose of asking them to address this question and do their final personal reflection on their own entrepreneurial competencies is asking them whether they have seen inside the hidden game of entrepreneurship.

Perkins's sixth design principle is 'to learn from the team.' (Perkins, 2009) Principles has two significant team learning experiences built into the curriculum strategy. First there is considerable time devoted to think/pair/share exercises in entrepreneurial competency investigation, presentation skill development, and learning of feasibility analysis techniques and processes. Second the $5.00 game is a team adventure where the student team finds an opportunity, creates its product or service, performs the work, earns the money, reports results and reflects on and evaluates the team’s performance. Grading for the $5.00 game is not based on the financial results but on the playing of the game, and each team in the class has a different business idea and most likely a business model so that students learn about the game not only just from their own team experience but from observing the experiences of other teams in the class (Fry and Kolb, 1979).

Perkins's final design principle is 'to put the students in the driver's seat.' (Perkins, 2009) In Principles students start in the driver's seat in the 2nd class coming up with things that bug them which lead them to thinking about possible innovations in their life (I can't stand my roommate's loud radio says one student--another student says: "so buy head phones.") Raviv at Florida Atlantic uses creativity exercises about things on campus that bug people--like speed bumps--and finds that students can quickly come up with scores of ideas to address common problems. 39 Students select their idea pitch topic, their feasibility analysis topic and do their own case research, analysis, writing, and presenting--all driver seat positions.

Helping students become proactive learners in the game of entrepreneurship and motivating them to make that decision (Raviv et al., 2005; Fayolle and Gailly, 2008; Raffo et al., 2000) is at the heart of putting the student in the entrepreneurship driver's seat, a goal that many educators in the field of entrepreneurship have as their goal. (Zafar, 2010; Campbell, 2011; Bager, 2011; Cone, 2012; Oosterbeek et al., 2010).
Table 9. Summary of Perkins 'Learning by Wholes' Curriculum Strategy for Principles

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>Perkins 7 Principles of learning by wholes</th>
<th>Learning Activity</th>
<th>Assess Entrepreneurial Competencies</th>
<th>Assess Entrepreneurial Competencies</th>
<th>Exhibit Presentation Skills</th>
<th>Exhibit Presentation Skills</th>
<th>Evaluate the feasibility of new ventures</th>
<th>Evaluate the feasibility of new ventures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Play the whole game</td>
<td>1. Reflect on four entrepreneur guest speakers</td>
<td>2. Reflect on their own entrepreneurial competencies</td>
<td>1. Compete in Idea Pitch competition</td>
<td>2. Present to external judges the new venture feasibility analysis as the final exam</td>
<td>1. Play the Johnny Money game</td>
<td>2. Play the $5.00 game</td>
<td>1. reflecting whether they are or want to be more entrepreneurial is inherently satisfying</td>
<td>1. choosing the idea they pitch is motivating.</td>
</tr>
<tr>
<td>2. Make the activity worth pursuing</td>
<td>1. recognizing their own entrepreneurial competencies</td>
<td>1. preparing and delivering presentation broken down and reconstructed</td>
<td>2. practice and compete with peers, receive peer feedback, and share the success/failures</td>
<td>1. choose the case that they evaluate for the feasibility analysis is motivating</td>
<td>2. receive peer help and feedback in improving their analysis.</td>
<td></td>
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<tr>
<td>3. Work on the hard parts</td>
<td>1. we will read and discuss articles identifying the entrepreneurial competencies</td>
<td>2. we will discuss each reflection in class in a think/pair/share mode</td>
<td>1. preparing and delivering presentation broken down and reconstructed</td>
<td>2. emphasis will be on learning through trial and error with 'trained' peer feedback</td>
<td>1. feasibility analysis broken into smaller parts and reconstructed</td>
<td>2. students will guide the class focus onto hard parts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Help students transfer their learning</td>
<td>1. understand entrepreneurial competencies in four different settings/guest speakers</td>
<td>2. reflect on whether they or want to be more entrepreneurial</td>
<td>1. do a two minute persuasive talk and rate your peers</td>
<td>2. present an analysis of a new venture in ten minutes and rate your peers</td>
<td>1. prepare their own new venture analysis based upon analysis models</td>
<td>2. critique their peer's analysis with the criteria to be applied to all new venture analysis</td>
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</tr>
<tr>
<td>5. Uncover the hidden rules</td>
<td>1. uncover Kuratko's myths</td>
<td>2. explain how to use personality and preferences data</td>
<td>1. reveal Brody's false-hoods</td>
<td>2. rate your peers with rubrics and discuss with peers</td>
<td>1. use Vesper's guidelines</td>
<td>2. use peer reviews based on rubrics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Help students learn from each other and the team</td>
<td>1. share speaker reflections with peers</td>
<td>2. use peer review feedback and reflection</td>
<td>1. design and practice idea pitch with peers</td>
<td>2. fill out rubrics as peer feedback in class</td>
<td>1. share each deliverable with peers</td>
<td>2. use $5.00 game as jr game</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Foster proactive self-regulated learning in students</td>
<td>1. start with creativity exercises to build confidence in creativity skills</td>
<td>2. ask students to assess themselves in entrepreneurial competency as a final exercise</td>
<td>1. ask for self-assessed Idea Pitch based on rubrics</td>
<td>2. the idea pitch competition is fun and motivating</td>
<td>1. working on your own case idea is more fun and self-motivating</td>
<td>2. reflecting on your case idea is asking for visionary thinking</td>
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</tr>
</tbody>
</table>
14. Principles Course Synthesis and Alignment Examples

The Principles class is built around experiential learning, and assessments are aligned and pedagogies adjusted according to the learning that students exhibit (Fry and Kolb, 1979). Student learning is scaffolded using an apprentice learning model and the varying levels of cognitive ability and prior knowledge that the students possess (Svinicki, 2004; Perry, 1968). Students construct their cases, assess their skills, create and deliver their strategies, and determine the pace of their learning process. Student's prior knowledge, cognitive development levels and learning styles are reflected in their assessments and the pedagogy. Students are motivated by the active learning processes, their degree of choice, and the individual and group competitions.

References


Designing a Principles of Entrepreneurship Course

Vijayaraghavan, G., & Kaner, C. (2003). Bug taxonomies: Use them to generate better tests. In STAR EAST.