Significant, Backwards, and Systematic: An Integrated Approach to Course Design

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Overview

Innovative Course Design institute created in response to local context and needs

Broader takeaways for instructional designers, faculty, and faculty developers
Context

- Small, private, co-educational, master’s-level university
- Transformative educational experiences spanning liberal arts and professional programs
- Institutional scale
  - 2536 students
  - 131 full-time faculty
  - 173 adjunct faculty
  - 9:1 student-faculty ratio
  - Average class size of 14
Need

- History of individual assistance
- Complex curriculum
- Individual faculty teach many courses, on slow course rotations
- Varied course modalities
Delivery of the Course Design Institute

- 4 day-long, in-person sessions held weekly in June
- Supporting online learning platform
- Participants focus on (re)designing 1 course scheduled for next year
  - All modalities, levels, disciplines
## 3 Key Innovations

<table>
<thead>
<tr>
<th>Most Course Design Institutes</th>
<th>Queens Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on face-to-face courses</td>
<td>Design steps and principles relevant to <strong>all</strong> course modalities</td>
</tr>
<tr>
<td>Completed in 3-5 consecutive days</td>
<td>4 day-long sessions occurring weekly in 1 month</td>
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<tr>
<td>Draw on 1 design text</td>
<td>Integrates complementary elements of 3 approaches to course design</td>
</tr>
</tbody>
</table>
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Significant learning
• Fink

Backwards design
• Wiggins and McTighe

Systematic approach
• Dick and Carey

= Queens Course Design Institute
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Backwards design
• Wiggins and McTighe

Queens Course Design Institute

1. Identify Desired Results.
   - Big Ideas and Skills

2. Determine acceptable evidence.
   - Culminating Assessment Task

3. Plan learning experiences and instruction.
   - Learning Events

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- **Significant learning** • L. Dee Fink
- **Backwards design** • Grant Wiggins and Jay McTighe
- **Systematic approach** • Walter Dick, Lou Carey, James O. Carey

Equals: Queens Course Design Institute
An Integrated Approach to Course Design

- Significant learning: Fink
- Backwards design
- Systematic approach: Dick and Carey
- Queens Course Design Institute

6 Dimensions of Fink's Significant Learning:
- Learning How to Learn
- Foundation Knowledge
- Application
- Caring
- Human Dimension
- Integration

6 Dimensions of Fink's Significant Learning: Caring, Learning How to Learn, Foundation Knowledge, Application, Human Dimension, Integration
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- Significant learning → lasting change in learners’ lives.
- Content-centered paradigm → Learning-centered paradigm
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**FIGURE 4.4. CRITERIA FOR ASSESSING THE INITIAL PHASE OF A COURSE DESIGN.**

- Significant Learning
  - Fink

- Backwards design
- Wiggins and McTighe

- Systematic approach
  - Dickinson and Carey

- Queens Course Design Institute

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**CREATING SIGNIFICANT LEARNING EXPERIENCES**
An Integrated Approach to Designing College Courses
L. Dee Fink
An Integrated Approach to Course Design

**Initial Phase: Build Strong Primary Components**
1. Identify important situational factors.
2. Identify important learning goals.
3. Formulate appropriate feedback and assessment procedures.
4. Select effective teaching and learning activities.
5. Make sure the primary components are integrated.

**Intermediate Phase: Assemble the Components into a Coherent Whole**
6. Create a thematic structure for the course.
7. **Select or create a teaching strategy.**
8. Integrate the course structure and the instructional strategy to create an overall scheme of learning activities.

**Final Phase: Finish Important Remaining Tasks**
9. Develop the grading system.
10. Debug the possible problems.
11. Write the course syllabus.
12. Plan an evaluation of the course and of your teaching.
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Intermediate Phase: Assemble the Components into a Coherent Whole
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FIGURE 4.7. THE “CASTLE TOP” DIAGRAM: A GENERAL TEMPLATE FOR CREATING A TEACHING STRATEGY.

<table>
<thead>
<tr>
<th>In-Class Activities:</th>
<th>Class Session</th>
<th>Class Session</th>
<th>Between Classes</th>
<th>Between Classes</th>
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<tbody>
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Significant learning
• Fink
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Significant learning
- Fink

Backwards design
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Queens Course Design Institute
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- Subordinate skills analysis
- Mager’s tripartite model for writing instructional objectives
- Instructional strategy based on Gagne’s (1985) *Conditions of Learning*
- Keller’s (2010) ARCS model of student motivation
5-Part Instructional strategy based on Gagne’s *Conditions of Learning*

1. **Pre-instructional activities**
   - Gain attention and motivate learners
   - Describe objectives
   - Describe and promote recall of prerequisite skills

2. **Content presentation**
   - Content, interwoven with
   - Learning guidance (e.g., examples)

3. **Learner participation**
   - Practice
   - Feedback
   - Integration of skills

4. **Measure learning**
   - Practice test(s)
   - Posttest

5. **Follow-through activities**
   - Memory aids for retention
   - Transfer considerations
   - Can also be incorporated in parts 1-4
- Share objectives, criteria
- Give supportive feedback
- Give learners control
- Avoid excess difficulty
- Show overconfident learners that they have things to learn
- Channel those with mastery into advanced instruction

- Intrinsic rewards
- Extrinsic rewards
- Immediate application
- Equity: Apply consistent standards in assessing learning and share them with learners

- Real world examples/human interest examples
- Conflict/paradox
- Puzzle/mystery/mental challenge
- Humor
- Active participation
- Variety
- Questioning something

- Show how learning aligns with their personal goals
- Link to previous experience
- Perceived present worth
- Perceived future usefulness
- Role models using the learning
- Give learners choice

- Attention
- Relevance
- Satisfaction
- Confidence

- Attention
- Relevance
- Satisfaction
- Confidence
<table>
<thead>
<tr>
<th>5 Parts</th>
<th>Intellectual skills</th>
<th>Verbal information</th>
<th>Attitudinal skills</th>
<th>Motor skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pre-instructional activities</td>
<td>• ARCS&lt;br&gt;• Share learning objectives&lt;br&gt;• Promote recall of prerequisite knowledge/skills&lt;br&gt;• Link new content to existing knowledge/skills</td>
<td>• ARCS&lt;br&gt;• Share learning objectives&lt;br&gt;• Share value of info and how it is used</td>
<td>• ARCS&lt;br&gt;• Share learning objectives&lt;br&gt;• Show benefits and problems/consequences of an attitude&lt;br&gt;• Evoke empathy for character in an illustration&lt;br&gt;• Provide for reflection or discussion of similar situations or people in learners’ lives</td>
<td>• ARCS&lt;br&gt;• Illustrate the skill&lt;br&gt;• Promote recall of prerequisite knowledge/skills&lt;br&gt;• Give information on benefits</td>
</tr>
<tr>
<td>2 Content presentation</td>
<td>• Subordinate skills first&lt;br&gt;• Share distinguishing characteristics of concepts (vs. irrelevant characteristics)&lt;br&gt;• Show common errors (e.g., in classifying)&lt;br&gt;• Show organizing structures (headings, graphics)&lt;br&gt;• Give examples and nonexamples&lt;br&gt;• Give ways of organizing new skills with pre-existing ones&lt;br&gt;• Review steps before full performance of a goal</td>
<td>• In small doses&lt;br&gt;• Link new info to existing knowledge/skills&lt;br&gt;• Place new info near skills it supports&lt;br&gt;• Show organizing structures (subsets, location, order)&lt;br&gt;• Share distinguishing characteristics&lt;br&gt;• Introduce mnemonics and other memory aids</td>
<td>• Give a respected human model to display the behaviors sought and describe/show why they are important&lt;br&gt;• Show model being rewarded for behavior&lt;br&gt;• Show model having feelings/satisfaction for that behavior&lt;br&gt;• Show undesirable consequences for the model of behaving in an alternative way</td>
<td>• Plan organization of presentation (skills as a whole or in parts)&lt;br&gt;• Tell/illustrate what to do and how to do it&lt;br&gt;• Illustrate physical characteristics and qualities of successful performance&lt;br&gt;• Show master performances for age and ability of learner group</td>
</tr>
<tr>
<td>3 Learner participation</td>
<td>• Ensure that practice is congruent with conditions and behaviors in objective&lt;br&gt;• Progress from less to more difficult&lt;br&gt;• Use familiar contexts for practice at first&lt;br&gt;• Provide conditions similar to performance context near the end&lt;br&gt;• Give balanced feedback (strengths, weaknesses, process)</td>
<td>• Practice generating new examples&lt;br&gt;• Strengthen elaborations and cues&lt;br&gt;• Use meaningful context and relevant cues&lt;br&gt;• Provide feedback for accuracy of answers</td>
<td>• Give opportunities for choose appropriate behaviors within the context of the information or skills&lt;br&gt;• Give roleplaying opportunities&lt;br&gt;• Give consistent feedback regarding rewards, consequences, rationales&lt;br&gt;• Encourage learners’ verbal testimonials of behaviors linked to rewards or consequences</td>
<td>• Plan for repetitious practice&lt;br&gt;• Include relevant equipment and environment&lt;br&gt;• Give immediate feedback illustrate strengths and areas for improvement&lt;br&gt;• Give targeted information for performance improvement</td>
</tr>
<tr>
<td>4 Measure learning</td>
<td>• Ensure learners’ readiness for testing&lt;br&gt;• Accommodate the hierarchical nature of the skills&lt;br&gt;• Apply appropriate criteria for learner age, ability</td>
<td>• Ensure relevance to the performance context&lt;br&gt;• On a test, put these test items near the test items on skills that the verbal info supports</td>
<td>• Create scenarios where learners tell their choices and behaviors&lt;br&gt;• Test learners’ knowledge of desired ways of behaving, rewards and consequences of doing so&lt;br&gt;• Create situations for learners to choose to behave in the desired way and then do so&lt;br&gt;• Observe learners’ choices and behaviors when they are unaware they are being observed</td>
<td>• Learner demonstrates the skill with the intended equipment and in the intended environment&lt;br&gt;• Consider impact of bystander learners</td>
</tr>
<tr>
<td>5 Follow-through</td>
<td>• Promote transfer&lt;br&gt;• Consider memory requirements&lt;br&gt;• Consider need for job aid&lt;br&gt;• Reflect on learning experience, strategies, and future applications</td>
<td>• Give more strategies for organizing information ad connecting it to preexisting knowledge&lt;br&gt;• Give recall puzzles or contests as extra motivation</td>
<td>• Give practice contexts similar to those where the attitude should be displayed</td>
<td>• Incorporate performance conditions in instruction and practice&lt;br&gt;• Encourage more practice after instruction</td>
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</tbody>
</table>
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This synthesis supports the types of deep learning valued at Queens and similar institutions while ensuring that faculty members identify and address the subordinate skills that students need the most support in developing.
What are the top 3 things you learned in this institute?

- Component skills analysis
- Backwards design
- Supporting students’ development of metacognitive skills.
- “Realizing there are skills so inherent in my process that I've never stopped to consider them as individual skills, let alone teachable moments.”
- “Focusing on skill components rather than jumping into instructional strategies.”
Participants’ plans for applying knowledge gained in the institute

- Resequencing the target course
- Creating a different timeline or schedule for the course
- Redesigning PowerPoint presentations, lectures, and in-class activities.
What are some specific ways that you will apply what you learned in this institute?

- “I will go back and really structure instructional time in the classroom focusing on the specific skill components I need to prioritize. Think through the 5 step process that will help me be more intentional and planful :) rather than simply implementing an instructional strategy because I learned about it. The 5 step process allows me to be more aware of why I am doing something and when (and how).”
<table>
<thead>
<tr>
<th>Day 1 (Week 1)</th>
<th>Day 2 (Week 2)</th>
<th>Day 3 (Week 3)</th>
<th>Day 4 (Week 4)</th>
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</thead>
<tbody>
<tr>
<td>1. Understand how backwards design process differs from a common faculty process for creating a course</td>
<td>7. Conduct component (subordinate) skills analysis</td>
<td>13. Design-in enhancement of learner motivation</td>
<td>17. Sequence instruction effectively</td>
</tr>
<tr>
<td>2. Analyze the context in which learning will occur</td>
<td>8. Identify differences in how novices and experts perform the same task</td>
<td>14. Design-in support for student metacognition</td>
<td>18. Map instructional strategy to the context</td>
</tr>
<tr>
<td>3. Analyze learner characteristics</td>
<td>9. Write component skills objectives</td>
<td>15. Identify any major disconnect you may have introduced</td>
<td>19. Select suitable instructional materials and deliver them effectively</td>
</tr>
<tr>
<td>4. Clarify how your course will foster significant learning</td>
<td>10. Distinguish the uses of 4 types of “tests”</td>
<td>16. Remedy the disconnect(s)</td>
<td>20. Schedule instruction into semester structure, consistent with course modality</td>
</tr>
<tr>
<td>5. Articulate a major “end of course” performance to assess that learning</td>
<td>11. Outline a 5-part instructional strategy for component skill objectives using the ARCS model of motivation</td>
<td>21. Create syllabus</td>
<td>22. Develop plan for completing re/design project</td>
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<tr>
<td>6. Conduct a goal analysis based on that performance</td>
<td>12. Check for alignment between skills, objectives, and instructional strategy</td>
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### 3-Day Course Design Institute

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
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<tbody>
<tr>
<td><strong>Main Topic: Student Learning Objectives</strong></td>
<td></td>
<td></td>
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<tr>
<td>• Course constraints and challenges</td>
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<td></td>
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<tr>
<td>• Syllabus template</td>
<td></td>
<td></td>
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<tr>
<td>• Draft and revise learning objectives</td>
<td></td>
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<tr>
<td>• Draft a course description</td>
<td></td>
<td></td>
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<tr>
<td>• Begin organizing course schedule</td>
<td></td>
<td></td>
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<tr>
<td><strong>Main Topic: Assessments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Aligning learning objectives and assessments</td>
<td></td>
<td></td>
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<tr>
<td>• Student-centered assessments</td>
<td></td>
<td></td>
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<tr>
<td>• Types of feedback</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Draft and revise draft an assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Add to course schedule</td>
<td></td>
<td></td>
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<tr>
<td><strong>Main Topic: Teaching and Learning Activities</strong></td>
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<tr>
<td>• Passive vs. active learning</td>
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<tr>
<td>• Active learning strategies and tools</td>
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<td></td>
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<tr>
<td>• Getting students to success on an assignment</td>
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<tr>
<td>• Refine learning activities</td>
<td></td>
<td></td>
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<tr>
<td>• Refine course schedule</td>
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<tr>
<td>• Begin to assemble full syllabus</td>
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*(Derived from Duke University, 2019)*
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<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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</thead>
<tbody>
<tr>
<td>• CDI Overview</td>
<td>• Design</td>
<td>• Feedback &amp; assessing student learning</td>
<td>• Creating the schedule</td>
<td>• Exchange syllabi</td>
</tr>
<tr>
<td>• Understanding student motivation</td>
<td>• Principles of gauging student learning</td>
<td>• Principles of active learning</td>
<td>• Feedback &amp; grading</td>
<td>• Implementing the design</td>
</tr>
<tr>
<td>• Principles of course design</td>
<td>• Assessing &amp; getting feedback on learning</td>
<td>• Explore and develop learning activities</td>
<td>• Individual work &amp; consultations</td>
<td>• Turn in paper copy of near-final or final syllabus</td>
</tr>
<tr>
<td>• Backward designing from learning goals &amp; objectives</td>
<td>• Developing learning assessments</td>
<td>• Individual work &amp; consultations</td>
<td>• Exchange syllabi</td>
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</tr>
<tr>
<td>• Defining what you most want students to get out of your class</td>
<td>• Individual work &amp; consultations</td>
<td>• Optional mini-workshop on technology</td>
<td>• Individual work &amp; consultations</td>
<td></td>
</tr>
<tr>
<td>• Individual work &amp; consultations</td>
<td>• Refine your learning objectives</td>
<td>• Refine assessments</td>
<td>• Exchange syllabi</td>
<td></td>
</tr>
<tr>
<td>• Determining your learning goals &amp; objectives</td>
<td>• Develop overall assessment strategy</td>
<td>• Determine overall instructional strategy</td>
<td>• Individual work &amp; consultations</td>
<td></td>
</tr>
<tr>
<td>• Create a new learner-centered course description</td>
<td>• Develop 1-2 specific assessments</td>
<td>• Develop 1-2 specific activities</td>
<td>• Refine learning activities</td>
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<tr>
<td>(Derived from George Washington University, 2016).</td>
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</table>
1. Give learners choices and autonomy
2. Use images and interaction for memorable learning
3. Leverage colleagues’ knowledge and experience
4. Ask questions to promote reflection and shared responsibility for learning
5. Deliver good design elastically
6. Model sound practices
7. Foster mutual respect and trust
8. Promote learning opportunities in relationships as much as “training”
9. Advocate the connection of learning to performance management
Influences on the Institute’s Design

- Andragogy
- Social learning
- Josh Bersin’s “learning in the flow of work”
- 70-20-10 model
- Project management
## Conclusion

- **Overall**
  - Value in integrating perspectives on course design
  - Collaborative approach to the design of institutes

<table>
<thead>
<tr>
<th>For instructional designers</th>
<th>For faculty</th>
<th>For faculty developers</th>
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<tbody>
<tr>
<td>• Adapt terminology to the audience</td>
<td>• Be open to learning new techniques</td>
<td>• Explore course design resources beyond Fink’s <em>Creating Significant Learning Experiences</em></td>
</tr>
</tbody>
</table>
References


References


Steinhardt, R. (2015, June 1). Rethinking course design. *GWToday*. [https://gwtoday.gwu.edu/rethinking-course-design](https://gwtoday.gwu.edu/rethinking-course-design)