

Course Design Toolkit

Developed by the Division of Academic Effectiveness

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# Introduction to Backward Design

Backward design is research-supported, practical approach to enhance student engagement and learning. It is a student-centered, pedagogical technique in which the instructor begins with desired end goals by focusing on what the learner will learn, rather than what the teacher will teach.

Backward design is beneficial to instructors because it encourages intentionality and alignment during the course design process. It provides guidance for instruction, designing lessons, units, and courses. Backward design is a guiding principle and a research-based process. It is often helpful to think of backward design with parallels to the research process. First, ask a question. Then, collect data in the form of assessments. Last, analyze your assessment data by asking yourself if your students learned what they were supposed to. Keep in mind that it is not a strict flowchart or decision tree. It can be a fluid process. Backward design can be achieved through the following three stages.

1. Identify Desired Results
2. Determine Acceptable Evidence
3. Plan Learning Experiences and Instruction

**Stages of Backward Design**

1. Identify desired results.

* Big ideas and skills

2. Determine acceptable evidence.

* Culminating assessment task

1. Plan learning experiences and

instruction.

* + Learning events

Wiggins, G. P. & McTighe, J. (2005). *Understanding by design.* Association for Supervision and Curriculum Development.

**Stage 1: Identify Desired Results**

By the end of Stage 1, you will be able to identify at least one “Big Idea” and create at least one related “Essential Question” for your course and/or unit of study.

Below are some questions to consider as you plan your course and determine big ideas and skills you would like your students to learn:

* 1. What are the big ideas students should retain after taking your course?
  2. What is the purpose of this course in the grand scheme of education?
     + Is this course a general education requirement?
     + Is your course preparing students for specific careers?
  3. What is worthy of understanding? What enduring understandings are desired?
  4. What would you like students to be able to do by the end of the course (or unit)?

**Graphic to Categorize Big Ideas**

Use the graphic below to categorize the ideas that you would like your students to know by the end of your course. The three categories of big ideas inside the circles map to examples of knowledge in the rectangular table.

Ideas worth being familiar with

Ideas important to know and do

Big ideas and enduring understandings

|  |
| --- |
| Prior knowledge or peripheral knowledge that will help enrich understanding |
| Foundation of a deeper understanding  Subject matter of traditional quizzes and tests |
| Foundation upon which all lessons and activities are planned.  Idea that stays with student long after they have left the classroom |

After you have identified some big ideas and skills for your course, run your big ideas through the four filters below.

These four filters are designed to help you refine your big ideas before moving on to Stage 2.

Four filters to consider in Stage 1:

* Does the big idea have enduring value beyond the classroom?
* Does the big idea reside at the heart of the discipline?
* Does the big idea require uncovering of abstract or misunderstood ideas?
* Does the big idea offer potential for engaging students

Use the template on the next page to work through Stage 1 of Backward Design:

**Stage 1 Template**

|  |  |
| --- | --- |
|  | **Learning outcomes for the course** |
| What big ideas would you like students to remember after the course? | |
| What is worthy of understanding? What enduring understandings are desired? | |
| What is the purpose of this course in the grand scheme the program of study or general education? | |

After you have determined the big ideas that you would like students to retain, create essential questions to guide your learning outcomes. Essential questions are not learning outcomes; they focus on the big questions you want students to consider throughout the course. They guide the unit/lesson and course learning outcomes. See the table below for guidelines on how to create an essential question.

|  |  |
| --- | --- |
|  | **Creating an Essential Question** |
| **Essential questions…**  Focus on what students will be working towards Frame the course/unit  Anchor the students’ work  Provide context for learning  Require thorough evaluation – engaging, provocative, multilayered Go to the heart of the discipline  Recur naturally in the field  Raise other important questions Have no obvious right answer  Are deliberately framed to provoke and sustain student interest  **Essential question examples:**  Is there “enough” to go around? Does art reflect culture or shape it? When is a law unjust? | |
| Draft 1-2 of your own essential questions for your course: | |

**Stage 2: Determine Acceptable Evidence**

At the end of Stage 2, you will be able to identify one student learning objective that maps to your traditional and performance assessments. You will also create one new traditional assessment and one new performance assessment for your course/unit of study.

Now that you have established your big ideas and essential questions, the product at the end of Stage 2 will be your performance tasks and other assessments of knowledge. Keep the following questions in mind as you work through Stage 2:

* How will students demonstrate knowledge (performance tasks or quizzes, tests, or homework)?
* How will you know if students have achieved the desired results?
* What will you accept as evidence of student understanding and proficiency?
* Can your students:
  + Teach it?
  + Use it?
  + Prove it?
  + Explain it?
  + Defend it?
  + Read between the lines?

The first step in Stage 2 is to become aware of, or create new, learning objectives that will guide what you determine as acceptable evidence of learning. Learning objectives are specific, measurable and definable outcomes that students should be able to achieve at the conclusion of a course.

*Example learning objectives:*

After completing this course, students will be able to:

* Apply basic research methods in psychology to an original research project.
* Articulate the diversity of human experience in a cumulative portfolio.
* Integrate evidence from peer-reviewed journal articles to create a cohesive literature review.

Use the table on the next page to help you think through learning outcomes.

**Draft or Revise Learning Objectives**

|  |  |
| --- | --- |
|  | **What are the mandated or existing learning outcomes for this course?** |
|  | |

If there are no existing learning objectives (or if you would like to add learning objectives of your own), draft 2-3 measurable learning objectives using your big ideas and what you will accept as evidence of learning. Are there other learning objectives that might map nicely to your big ideas?

|  |  |
| --- | --- |
|  | **What other learning objective might map nicely to that big idea or overall task?** |
|  | |

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Use the template below to map your learning objectives to your assessments. First, list your big ideas and learning objectives. Next, list your traditional assessments and your performance assessments. Traditional assessments include quizzes, tests, or essays.

Performance assessments, including projects, portfolios, and presentations, require students to demonstrate specific skills and competencies. You may also include formative assessments such as in-class polls, discussions, collaboration, teamwork and confidence. Ask yourself, what will your students be able to do and know by the end of your unit or course?

|  |  |  |  |
| --- | --- | --- | --- |
| **Big Ideas** | **Student Learning Outcomes (SLOs)** | **Traditional Assessments** | **Performance Assessments** |
| Big ideas from Stage 1 | Existing SLOs  New SLOs | Existing Traditional Assessments (it is okay to let go of some of these if they do not map to your big ideas).  New Traditional Assessments | Existing Performance Assessments  New Performance Assessments |

**Stage 3: Plan learning experiences and instruction**

By the end of Stage 3, you will be able to identify at least one specific learning activity for your course. This learning activity will map to your student learning objective and your traditional and/or performance assessment.

In Stage 1, you determined your big ideas, essential questions, and what students should be able to do after taking your course. In Stage 2, you used your essential questions and big ideas to determine assessments and performance tasks that would provide evidence of learning. In Stage 3, you will determine specific learning activities that will help achieve learning including course content, formative assessments, and how you will deliver the content.

Use these guiding questions to help you plan your instruction:

* What enabling knowledge (facts, concepts, principles) and skills (processes, procedures, strategies) will students need in order to perform effectively and achieve desired results?
* What activities will equip students with the needed knowledge and skills?
* How should content best be taught in light of performance goals?
* What materials, technology, and resources are best suited to accomplish these goals?
* How can learning be engaging and effective?
* What is the best use of time spent in and out of the classroom, given the performance goals?
* What are your strengths and weaknesses in teaching?
* What is your preferred method of teaching?
* How might content best be communicated to students?

**Effective and Engaging Instruction**

Typically, instruction is most effective when:

* It is hands-on
* It involves mysteries of problems
* It provides variety
* It offers opportunity to adapt, modify, or personalize the challenge
* It is built upon a real-world or meaningful issue
* It involves real audiences or other forms of authentic accountability for results

Instruction is most engaging when:

* It is focused on clear and worthy goals
* Students understand the purpose for the work
* Models and exemplars are provided
* Criteria is given to allow students to monitor their progress
* There are many opportunities to self-assess
* Learning objectives, assessments, and learning experiences are aligned

Answer the questions on the next page based on your experience with this course or other courses.

Under what conditions are students most productive?

|  |
| --- |
| Under what conditions is the highest-quality work produced? |
| What makes students engaged?  What keeps them engaged? |

**Mapping SLOs to Performance Assessments and Learning Activities**

Next you will review your performance assessment and learning outcomes to determine which learning activities you will implement in this course. Example of activities and instructional methods that can be used to help achieve learning are:

* Attending lectures (lecture dates, topics, duration)
* Reading the textbook (specific textbook chapters and topics)
* Reading other sources of information (scans or PDFs)
* Completing practice questions for homework (specific practice questions)
* Quizzes
* Class Discussions (Think/Pair/Share)
* Group assignments or activities

In Stage 3 you are selecting formative assessments (quizzes, reflections, etc.) and determining the content you will cover and how you will cover it. Formative assessment is an instructional technique used to monitor student learning and provide ongoing feedback to improve teaching and learning. It provides students with an opportunity to reflect upon what they know and concepts they still need to master in a low-stakes assessment. Formative assessment also helps the instructor identify which students are ready for enrichment, which students require additional practice, and which students require remediation.

Use the template below to determine which instructional methods and activities you will use for each learning outcome and performance assessment.

Map your SLOs from Stage 1 to the performance assessments you created in Stage 2. Then plan some learning activities (using the examples above) that will help your students achieve learning.

|  |  |  |
| --- | --- | --- |
| **SLO (Stage 1)** | **Performance Assessment (Stage 2)** | **Activities /Instructional Methods (Stage 3)** |
| SLO 1 |  |  |
| SLO 2 |  |  |
| SLO 3 |  |  |
| SLO 4 |  |  |
| SLO 5 |  |  |

Stage 3 is where you should consider whether you are working with existing content or designing a completely new course. Mapping learning activities to performance tasks and other evidence of learning will be different for new courses than course redesigns.

Refer to Appendix A and Appendix B for specific guidelines on new course designs and redesigns, respectively.

**Appendix A: Designing a New Course**

The WHERETO framework can be used to structure planning of instruction for new course designs or for designing new activities.

|  |  |
| --- | --- |
| **W** | **How can you help students know where the unit is going and what is expected? How will you assess prior knowledge?** |
| Help the students know **where** the unit is going and what is expected. Help the teacher know **where** the students are coming from (prior knowledge and interests). |  |
| **H** | **How can you hook students to keep them engaged?** |
| **Hook** all students and hold their interest |  |
| **E** | **How can you equip students by helping them experience key ideas and explore key issues?** |
| **Equip** students, help them **experience** key ideas, and **explore** issues |  |
| **R** | **How can you provide opportunities for students to rethink and revise their work?** |
| Provide opportunities to **rethink**  and **revise** their work |  |
| **E** | **How can you allow students to evaluate their own work and its implications?** |
| Allow students to **evaluate** their work and its implications |  |
| **T** | **How can you tailor learning activities to different needs, interests, and abilities of learners?** |
| **Tailor (personalize)** learning activities to different needs, interests, and abilities of learners |  |
| **O** | **How can you organize activities to maximize engagement?** |
| **Organize** activities to maximize initial and sustained engagement |  |

**Appendix B: Redesigning an Existing Course**

Below are examples of how students may provide evidence of each of the six facets of understanding (Wiggins & McTighe, 2005). This chart is useful for redesigning learning experiences and performance assessments in existing courses. Not all of the six facets of understanding will be applicable to every course or unit. Use this worksheet to plan how your students might demonstrate any or all of the six facets of understanding in your course.

|  |  |  |
| --- | --- | --- |
|  | **The Six Facets of Understanding** | |
| **Explanation**   * Provide complex, insightful, credible reasons * Substantiate views with sound argument and evidence * Avoid or overcome common misunderstandings | | How might students explain their reasoning or provide evidence to support their arguments? |
| **Interpretation**   * Make connections to subject matter * Tell meaningful stories * Read between the lines * Provide context to a complex situation | | How might students interpret the content? |
| **Application**   * Employ and adapt knowledge in a diverse situation * Invent or innovate * Self-adjust through a performance task | | How might students apply their knowledge? |

|  |  |
| --- | --- |
| **Perspective**   * Recognize another point of view * See the big picture * Display skepticism and test theories * Know context or significance of an idea * Recognize limitations to an idea | How might students demonstrate their recognition of other perspectives? |
| **Empathy**   * Feel and appreciate another’s situation, affect, or point of view * Recognize insight in what appears odd or obscure * Explain how a theory is misunderstood by others * Listen and hear what others do not | How might students demonstrate their appreciation or empathy for other viewpoints? |
| **Self-Knowledge**   * Recognize how prejudices can color one’s understanding * Engage in metacognition * Question personal convictions * Self-assess and regulate * Accept feedback and criticism | How might students engage in self-reflection and self-assessment? |

**Appendix C**

**Two Page Backward Design Planning Template**

|  |  |  |
| --- | --- | --- |
|  | **Stage 1 – Identify Desired Results** | |
| Established goals… | | |
| What essential questions will be considered? | | What understandings are desired? |
| What student learning outcomes or key knowledge and skills will students work towards during this course or unit? | | |

**Stage 2 – Determine Acceptable Evidence**

Performance tasks: Other assessments (quizzes, tests, papers, etc.):

**Stage 3 – Plan Learning Experiences and Instruction**

Learning Activities:

**Resources Used to Create Effective Course Design Toolkit**

Bowen, Ryan S., (2017). Understanding by Design. Vanderbilt University Center for Teaching. Retrieved [Monday, Oct. 5, 2020] from <https://cft.vanderbilt.edu/understanding-by-design/>.

Dubec, R. (2019, October 17). *Backward design: Introduction and Templates.* Lakehead University Teaching Commons. <https://teachingcommons.lakeheadu.ca/backward-design-> introduction-templates

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