

**TEACHING & LEARNING INNOVATION** 

# CURRICULUM DEVELOPMENT GUIDE



# TABLE OF CONTENTS

#### **INTRODUCTION**

### TLI'S PHILOSOPHY ON CURRICULUM DEVELOPMENT

#### A GUIDE TO THE GUIDE

- WHO SHOULD USE THIS GUIDE?
- HOW SHOULD YOU USE THIS GUIDE?
- WHAT'S IN THIS GUIDE?
- HOW DID YOU CREATE THIS GUIDE?
- WHAT ARE THE STEPS?

### <u>MANAGE</u>

- BUILDING YOUR TEAM
- PLANNING
- <u>BUDGETING</u>
- <u>CHANGE MANAGEMENT</u>

### <u>PREPARE</u>

- <u>CURRICULUM AUDIT</u>
- <u>NEEDS ASSESSMENT</u>
- <u>SHOULD WE CONDUCT AN AUDIT, A NEEDS ASSESSMENT,</u> <u>OR BOTH?</u>
- GOAL SETTING
- <u>CURRICULUM ASSESSMENT</u>

### DEVELOP

- <u>CURRICULUM MAPPING</u>
- <u>COURSE BLUEPRINTING</u>
- STUDENT LEARNING OUTCOMES
- ASSESSMENT
- <u>CHOOSING PEDAGOGIES</u>
- TEACHING MATERIALS

# TABLE OF CONTENTS

### **IMPLEMENT**

- FACULTY TRAINING
- CURRICULUM MATERIAL REPOSITORY
- DATA GATHERING

### REFLECT & REVISE

- <u>REVISE</u>
- <u>REFLECT</u>

## INTRODUCTION

#### CURRICULUM DEVELOPMENT GUIDE 1

Welcome to Teaching and Learning Innovation's Curriculum Development Guide! This guidebook was created to support the curriculum development efforts within colleges and academic units at the University of Tennessee by providing you with everything you need to engage in the curriculum development process from beginning to end.

Departments and units interested in redesigning existing curricula or developing new curricula can use this resource independently and take a do-it-yourself (DIY) approach. For departments that would like more support, TLI can work alongside you and your curriculum committee or team for some or all of this process. If you are interested in having TLI support your unit, please submit a service request, and someone from our team will reach out to learn more about how we can walk with you to accomplish your goals.

Finally, before we begin, a caveat: because this guide is an attempt to create a streamlined, user-friendly resource for curriculum development, we have by necessity left things out from the vast literature on curriculum development. If there is a model, approach, or strategy that you are interested in that is not currently included in this guide, please contact TLI for support.



This guidebook was created to support the curriculum development efforts within colleges and academic units at the University of Tennessee by providing you with everything you need to engage in the curriculum development process from beginning to end.

## TLI'S PHILOSOPHY ON CURRICULUM DEVELOPMENT

At TLI, we believe that intentional, systematic curriculum development, grounded in evidence-based teaching practices, can create a learner-centered classroom where all students have the opportunity to thrive.

The term "curriculum development" is often used to refer to various levels of instruction: an individual course, a set of courses, or entire programs. Whether working with a 1-hour first-year seminar or a department's major curriculum, curriculum development should always encompass the entire learning process. Thus, TLI begins the curriculum development process with the 3 foundational principles of backward course design:<sup>1</sup>

## THE 3 PRINCIPLES

An ideal curriculum carefully addresses each of these 3 questions and insists on their inextricable interrelatedness.

1

What do we need students to know or be able to do? 2

How will students show that they have learned what they need to know or be able to do?

3

How can we use instructional techniques to help students learn what they need to know or be able to do?

At the same time, TLI recognizes that curriculum development is multifaceted, and the ideal process can be complicated or require trade-offs with the realities of individual units, departments, and universities. Our role at TLI is to help faculty navigate these realities while developing a curriculum grounded in best practices to support the mission and vision of their academic department.



## A GUIDE TO THE GUIDE WHO SHOULD USE THIS GUIDE?

This guide is intended to support department heads, undergraduate/graduate curriculum chairs, curriculum committees or similar committees, and individual faculty tasked with curriculum development. It can be used to help departments revise or create new curriculum for programs, majors, minors, or certificates as well as revise or create new curriculum for individual courses or sets of courses. Individual instructors working on their individual courses may find certain parts of this guide helpful. TLI also offers Teaching Resources on various topics geared toward individual instructor support, which may also be useful.

## HOW SHOULD YOU USE THIS GUIDE?

As mentioned above, this guide is intended to be a comprehensive guide to curriculum development. We recognize, however, that each department, program, and committee is different and each curriculum project will have different needs. As such, you may not need to use every page or every section of this resource. For example, if you're coming to this after having already implemented a curriculum change, you may jump straight to the "Reflect and Revise" section. Or if your program learning outcomes are mandated by an accrediting body, you may not need to spend time on the section about writing strong learning outcomes.

## WHAT'S IN THIS GUIDE?

Each section will include a general overview of the topic with information such as definitions, theory, and practical strategies that can be implemented to support your curriculum project. Additionally, you'll notice three types of support indicated by the icons below:

### ROADMAPS\*



Our goal for this guidebook is to make the curriculum (re)design and development process as practical and action-oriented as possible. When you see this icon, you will find links to fillable documents that include questions to help you begin brainstorming.

### TEMPLATES\*



Similar to roadmaps, templates are fillable documents that will help you walk through the process. Unlike roadmaps, however, templates will help you put your curriculum design into action.

### RESOURCES



When you see this icon, you'll find links to additional resources that can help you take a deeper dive into that section's topic.

Please Note: you will need a UT NetID to access the Roadmaps and Templates.

## HOW DID YOU CREATE THIS GUIDE?

In order to create a practical resource grounded in evidence-based practices, we began by looking at curriculum and instructional development models that are commonly used in educational settings. The models that we explored most extensively, as they are commonly accepted as the most reliable models, were:

- Addie Model<sup>2</sup>
- Tyler Model<sup>3</sup>
- Dick and Carey Model<sup>4</sup>
- Taba Model<sup>5</sup>
- Kemp Model<sup>6</sup>
- Wheeler Model<sup>7</sup>

In addition to looking at the literature on these models, we explored how peer institutions tackle the curriculum development process. Many institutions across the country provide impressive and robust support for curriculum development. Two institutions stood out because each developed their own curriculum development model and had a strong track record of results evidenced in publications and presentations:

- Texas A&M
- University of Virginia

After gathering our research, we set out to create a model that both drew from the research and also respected our collective experience with curriculum development and our knowledge of UTK needs and structures.

## WHAT ARE THE STEPS IN THE PROCESS?

Below, you'll find a brief summary of each stage. While these are listed in order, we know that curriculum development is a recursive process. It will often require moving back and forth between the different stages as you gather more information. We recommend that you skim through the entire guide so that you are familiar with the contents before beginning. This will allow you to locate information quickly when you need it and move between sections in the order that best supports your needs.





**Manage:** Before starting the process, it is essential to take some time to put a plan in place and then attend to that plan throughout the process to ensure a smooth and successful experience for those involved. For this reason, we've placed "Manage" in the middle, rather than as a stage in the process, because these projects require continuous management.

**Prepare:** The process begins with gathering information—information from faculty, from students, from employers, and from the university. Some of this data you may have on hand; some of this data you may need to request; and some of this data may not exist. In the last case, you may use this stage and the Development stage to create a plan to gather the missing data. By analyzing the data that you do have, you can create a set of clear goals for your curriculum project.

**Develop:** This is the most time-intensive stage of the process because its where you begin to create your curriculum based on the analysis from the previous stage.

**Implement:** This is perhaps the most exciting step! The work that you've been doing is finally reaching students, and you get to observe the impact that it has while collecting data on its effectiveness.

**Reflect & Revise:** It's essential to take time after implementation to evaluate how the new curriculum is working and consider relevant changes. It is also helpful to take time to consider how the process itself worked and how you might want to engage in future curriculum projects.

## MANAGE

When starting this process, it's helpful to begin with careful planning to ensure that the process moves along smoothly and that you have the support structures you need to see the process through.

### BUILDING YOUR TEAM

One of the most essential factors involved in the success of your curriculum project is building your team.<sup>8</sup> As a "team sport," designing curriculum for higher education is often planned and organized by faculty and staff members who occupy various roles and have diverse backgrounds and experiences.

Because the development process can take you into unfamiliar and often difficult spaces, team members should have an open mindset, be collaborative and flexible, and be willing to have their assumptions challenged. Burrell et al. (2015) suggests that the following are critical success factors to be aware of when building teams:<sup>9</sup>

## FACTORS TO CONSIDER WHEN BUILDING YOUR TEAM



Dam and Siang (2018) further point out that the following three factors should also be considered for the success of the project:<sup>10</sup>

- Establishing a diverse team with different thinking styles and experiences
- Developing a team culture that supports inclusiveness, collaboration, and co-creation
- Leveling the playing field to allow for a diverse set of viewpoints to encourage holistic thinking

In an effort to further develop your team's full potential, consider using the Gallup CliftonStrengths assessment, a tool that encourages optimal team performance. This assessment is being used across the university by students, faculty, and staff, so—as an added bonus—using this assessment will bring your team into a wider conversation. The assessment provides team members a "common language and vocabulary" to discover what each member does best, what motivates each member, and why members do what they do.<sup>11</sup> If you're interested in helping your team discover their strengths and how to use them as they work together on this project, contact us at tli@utk.edu.

### PLANNING & SCHEDULING

Before you begin your project, it can help to create a tentative timeline. We generally recommend allocating at least one academic year for a full curriculum development or redesign. A timeline will help your team make efficient progress, but keep in mind that the timeline may need to be adjusted slightly as you work through the project. We recommend using the Timeline Template below and revisiting it throughout the process to ensure you're making timely progress and adjusting when necessary.

We also recommend scheduling regular meetings for your team. Some projects will require the whole team to meet regularly while others will require sub-groups to meet. Decide how often you want to meet and schedule the meetings as far in advance as possible. If possible, choose a specific day/time for all meetings (i.e., the first and third Thursday of each month from 2:00-3:30).







### BUDGETING

To keep the curriculum development process on track, it can be helpful to have a provisional budget. It may be difficult to know ahead of time how exactly to distribute your budget. For example, you may discover as you go through the process that you need a new piece of technology to implement your curriculum that you didn't know about before you started. Our Budget Planning Roadmap will help you create a provisional plan that you can adjust as you continue through the process. The Budget Template will then help you track your budget through the process.

### CHANGE MANAGEMENT

ROADMAP

Change is hard. But that shouldn't discourage us from making changes, especially changes we know will benefit our students' learning, and it can be a useful reminder that the work of changing or creating curriculum is not the only aspect of a successful curriculum development project.<sup>12</sup> Changing curriculum can be particularly difficult when faculty have become accustomed to certain ways of teaching, when faculty have strong feelings about what should or should not be taught, and when your current curriculum was created by faculty who remain in the department and, understandably, feel attached to it. To successfully implement a change in curriculum, it's essential that this change be understood and supported by the faculty members whom it will affect. A change management plan will help you get your faculty on board. On this page, you'll find a Change Management Roadmap, which can help you think through your change management process.

### **PRO TIP**

As you go through this process, keep all faculty updated and occasionally seek their feedback. If you consider change management and seek full feedback only at the beginning and reappear with a new curriculum a year later, it may be more difficult to get faculty on board. By providing periodic updates and seeking feedback from faculty throughout the process, you will help everyone feel invested when the new curriculum emerges at the end.

## PREPARE

For the curriculum development process to be as successful as possible, it is important to take some time to reflect on the current state of the curriculum. Putting together a snapshot of where you are and taking time to consider where you want to be will help you set a clear direction for your curriculum development project.

### CURRICULUM AUDIT

As your group dives into your curriculum project, you'll want to take a systematic approach to considering where your current curriculum is, if you already have one, and complete a curriculum audit. If you're working on a brand-new program or course, you'll likely skip this section and go straight to the Needs Assessment.

## A CURRICULAR AUDIT EXAMINES WHETHER CURRICULAR PROCESSES HAVE:



Complied with policy guidelines, standards, best practices, and/or

Achieved stated and desired

objectives<sup>13</sup>





Documented standards, objectives, guidelines for the curriculum or curricular process under audit



Measurements of the curriculum element(s) or process(es) under audit

By gathering this information, we can see the current state of curricular outcomes as compared to accepted standards or desired outcomes.

Every department or unit's audit will look different depending on how much information and data they have on their current curriculum and whether this project is a new curriculum or revision to an existing one. Our Curricular Audit Roadmap will help you compile the most useful information to complete your audit. If you do not have all the information that you would like, that's OK! Our Needs Assessment Roadmap will help you identify what kind of data and information you need to roll out your curriculum project so that you can begin gathering data.

# AFTER YOU'VE COMPLETED THE AUDIT, REVIEW THE INFORMATION GATHERED TO DECIDE WHETHER:

1 You have adequate information about the existing state of your curriculum to support the development of an action plan for your curriculum project

If the answer to 1 is yes, then proceed to "Goal Setting" on the next page.

2 You need additional information on the existing and/or desired state of your curriculum to accurately identify gaps and develop an action plan for curricular implementation/change

*If the answer to 2 is yes, then proceed to "Needs Assessment" below.* 

### NEEDS ASSESSMENT

A needs assessment helps you identify gaps between the current state and the desired state of curriculum.<sup>14</sup> It can also be used to identify desired standards, objectives, and best practices to implement by:

- Gathering data on perceived student, society (industry), and/or disciplinary needs
- Reviewing relevant curricular documents of peer institutions
- Seeking input from experts
- Reviewing disciplinary literature

CURRICULAR AUDIT

NEEDS ASSESSMENT ROADMAP

## SHOULD WE CONDUCT AN AUDIT, A NEEDS ASSESSMENT, OR BOTH?

As with many aspects of curriculum development, the answer to this question will depend on each department's unique situation. An audit merely reports how the existing state measures against the desired state, or whether standards are met. A needs assessment, on the other hand, makes judgments on the findings and interprets them to identify needs and gaps. As such, it can be taken as a second step after the audit process.

### GOAL SETTING

Once you have the critical information about where your program is, you'll want to begin thinking about where you want it to be once you've finished with your curriculum project. It may not be possible to tackle every single issue you discovered in an audit or needs assessment, so it's important to set clear, specific goals. Setting clear goals will help ensure that your new curriculum has measurable and manageable expectations.<sup>15</sup> Begin with your needs assessment and prioritize identified needs in the context of departmental, program, and institutional level goals and strategic plans. With your team, discuss where you want to be and what steps you need to take to get there. Try to narrow your focus to 3 or 4 goals that feel manageable.

The final step in goal setting will be to determine how you will know if you've reached your goal. In the Curriculum Assessment section that begins on this page, you'll find some ideas on how you might measure your success. Once you've decided where you are, where you want to be, and how you will know you have achieved your goal(s), use the Goal Setting Template above to record that information. Keep these goals easily and readily accessible to the whole team. As you work to develop your curriculum, refer to the goals frequently to help keep your project on track.



### CURRICULUM ASSESSMENT

Depending on your goals, there are multiple ways that you can assess the success of your curriculum project. Thinking ahead of time about how you will measure this success will allow you to collect data as you go, making assessment much easier.<sup>16</sup> As you think about your goals, consider what kind of midterm and end-of-term feedback you will need and what sources can give you the information you need. Consider, particularly, reaching out to the Office of Institutional Research and Strategic Analysis if you will need information like student demographic data.

Here are a few examples of indicators you can use to assess your curriculum project:

- 1. Student performance on formative and summative assessments
- 2. Curricular alignment checks (see the Develop section below for more information)
- 3.User feedback from students and/or faculty (pre-, mid-, and post-term surveys, questionnaires, interviews, focus groups)
- 4. Teaching evaluations (videotaped or peer observations)
- 5. Course evaluation data

The roadmap and resource, located to the left and on the next page, will help you think through the process of evaluating your curriculum and choosing the best indicators for your goals.

CURRICULUM ASSESSMENT ROADMA



### **PRO TIP**

The Preparation stage is an excellent time to consider any accreditation requirements as well as the University's program assessment requirements. Keeping these processes in mind as you set your goals will allow your assessment data to do double duty.

## DEVELOP

Using the information you gathered during the preparation process, you can now begin to develop your new or revised curriculum. The development stage will look different for every unit or department depending on your goals, and you may not find every section in this stage relevant to your project.

When we talk about curricular alignment, we mean ensuring coherence and consistency between:

- 1. Outcomes
- 2. Assessments
- 3. Teaching methods (pedagogies)
- 4. Learning activities or experiences
- 5. Teaching materials
- 6. Technologies

One of the most useful tools for creating alignment is the curriculum map and the course blueprint. This section will begin with an explanation of curriculum mapping and course blueprinting and then break down the elements that go into these documents.

### CURRICULUM MAPPING

A curriculum map is a tool used to show relationships between various aspects of the curriculum and program learning outcomes. A curriculum map documents where, how, and at what level learning happens in the curriculum.<sup>17</sup> A curriculum map will help you build your new curriculum and ensure that it is aligned throughout.

A basic curriculum map can be built on a matrix, with the program learning outcomes listed in rows and courses in columns. As illustrated in Table 1 on the following page, a mark is made in the cell where a course addresses an outcome.

#### CURRICULUM DEVELOPMENT GUIDE 12

TABLE 1: A	BASIC	CURRICULUM MA	٩P
------------	-------	---------------	----

Learning Outcomes	Course 1	Course 2	Course 3
Learning Outcome 1	Х	Х	
Learning Outcome 2		Х	
Learning Outcome 3	X		Х

An enhanced version of the curriculum map can chart program courses, program outcomes, course activities, and assessments as they relate to the intended program learning outcomes.

#### TABLE 2: A LEARNING EXPERIENCE CURRICULUM MAP

	Course 1			Course 2	
Program Learning Outcomes	Learning Experience/ Activity 1	Learning Experience/ Activity 2	Learning Experience/ Activity 3	Learning Experience/ Activity 1	Learning Experience/ Activity 2
Learning Outcome 1	Reflective Essay	Exam Question		Exam Question	Case Study
Learning Outcome 2	Term Paper	Lab Report	Oral Presentation	Group Project	
Learning Outcome 3			Capstone Project		Reflective Essay

#### TABLE 3: AN ADVANCED CURRICULUM MAP

	Course 1	Course 2	Course 3	Course 4	Course 5
SLO 1	I			D	M/A
SLO 2	I	D	D	D	M/A
SLO 3	I	D/A		D	M/A
SLO 4	I		D	D	M/A

### TABLE 3 KEY

- I = Introduced
- D = Developing (opportunity to practice, with feedback)
- M = Mastery level (expected of a senior)
- A = Assessed for program assessment

In the example shown in Table 3, the program does not provide opportunities to develop student learning outcome 1. Course 1 introduces students to the knowledge and skills required to meet SLO 1, and Course 5 assesses the outcome at mastery level. Curriculum mapping enables identification of such gaps.

#### TABLE 4: CURRICULUM MAP, EXAMPLE 1

	Course 1	Course 2	Course 3	Course 4	Course 5
SLO 1	Х				×
SLO 2		х		Х	Х
SLO 3	×				
SLO 4	×		X	X	x

Table 4 above shows that SLO 3 is not addressed in any course, while Table 5 below shows that Course 4 does not address any program SLO.

#### TABLE 5: CURRICULUM MAP, EXAMPLE 2

	Course 1	Course 2	Course 3	Course 4	Course 5
SLO 1	х		Х		Х
SLO 2	х	х			×
SLO 3		×	×		
SLO 4	х		х		х

("Quick guide to curriculum maps" Washington State University, n.d.) <sup>18</sup>

### COURSE BLUEPRINTING

For curriculum projects that focus on a single course (or for projects that divide faculty into groups where each group focuses on a single course), a course blueprint might be better suited for your needs. Similar to a curriculum map, a course blueprint helps you think through the process of developing a well-aligned curriculum for a particular course by dividing content into modules or units, writing SLOs for each unit, choosing assessment methods to measure the SLOs, and identifying technologies and learning materials to support the SLOs.<sup>19</sup> The template on the left will help you create a course blueprint.



CURRICULUM MAPPING TEMPLATE Curriculum maps and course blueprints can serve as the foundation for your curriculum project and help you reach your goals. The following sections in this stage will help you complete your curriculum map or course blueprint. These sections, however, can also be used independently if you already have a curriculum map or if your curriculum project has a narrower focus.

The Curriculum Mapping Template below on the left is designed to help you map program student learning outcomes (SLOs) onto

- the level at which each course satisfies each objective,
- assessments used to measure achievement of SLO, and
- instructional activities that will be used to prepare students to achieve each SLO.



COURSE BLUEPRINTING TEMPLATE

## STUDENT LEARNING OUTCOMES

Learning outcomes are statements that describe what students should be able to do by the end of the program, course, or learning activity. Effective student learning outcomes (SLOs) are essential components of a strong curriculum and provide the basis for a curriculum map or course blueprint. Having effective SLOs at the beginning of the process will also make it easier to select effective pedagogical strategies and assessment methods (both discussed later in this section). Based on the available literature, we suggest the following general principles:

- Write SLOs with clear and concise language using specific, measurable verbs to describe what students are expected to demonstrate. Bloom's Taxonomy can be a practical framework for writing learning outcomes.
- Avoid using verbs that are ambiguous or cannot be easily observed or measured (i.e., "know," "understand," and "learn").
- Set learning outcomes that challenge your students but are attainable and reflect the students' prior knowledge, available time, and the learning opportunities.
- Keep SLOs to a manageable number.

CURRICULUM DEVELOPMENT GUIDE 16

- Avoid SLOs that are too broad or narrow in scope. SLOs that are too broad in may pose problems with measuring and assessing learning, while SLOs that are too narrow may not cover adequate range of the learning process.
- development learning outcomes that have a clear alignment with the teaching strategies, learning materials, and assessment criteria.<sup>20</sup>

### TEMPLATE FOR WRITING A LEARNING OUTCOME<sup>24</sup>

As a result of participating in this course/unit/activity

Students will be able to (measurable verb)

+

Learning Statement

For more support with developing strong learning outcomes, consult the resources below.

### ASSESSMENT

Once you have developed your SLOs, you'll begin considering how to best measure whether students have learned the necessary information. Offering both summative and formative assessments provides students adequate opportunities to prepare for and achieve the SLOs for the course.<sup>21</sup>



### BLOOM'S TAXONOMY & MEASURABLE VERBS

WRITING CLEAR LEARNING OUTCOMES RESOURCE



DEVELOPING SLOS RESOURCE Summative assessment is implemented at the end of the course of study, or at interim intervals. It "sums up" student learning and is fundamentally concerned with learning outcomes.

Exams or formal papers are examples of summative assessment. Formative assessment, on the other hand, involves the evaluation of student learning over the course of time. It provides an estimate of students' level of achievement and helps students better identify their strengths and weakness and understand where they may need to improve before completing a summative assessment.

Examples of formative assessment include clicker questions, low-stakes quizzes, and self and peer assessments.

In addition to including formative and summative assessments, consider whether you might include direct and indirect assessment. Direct measures require learners to demonstrate their knowledge or skills through task performance (e.g., exams, projects). Indirect measures do not call for task performance but rather provide information from which inferences about student learning can be drawn (e.g., student surveys about their confidence in their knowledge, job placement data).<sup>22</sup>

As you decide on which assessments are most appropriate and begin designing your assessments, you'll want to ensure that you design quality assessments. Three widely accepted measures of assessment quality are validity, reliability, and inclusivity:<sup>23</sup>

- Validity refers to how well an assessment measures the learning outcome of interest. If, for example, an instructor wanted to measure the intelligence of students, and tested how may pull-ups students can do, the assessment would be an invalid measure of intelligence.
- Reliability is the degree to which an assessment produces stable, dependable, consistent results. Returning to the example above, if the instructor measures number of pull-ups each student can do every day for a week, and each student performs the same number of pull-ups each day on average, then the test is reliable (although it is still not a valid test of intelligence).
- Inclusivity or Fairness measures the extent to which an assessment provides an opportunity for learners of all backgrounds and experiences to succeed.<sup>24</sup>

The roadmap and resources below can help you decide which assessments are most appropriate for your courses and program and consider how you might design these assessments to ensure high quality.

> ASSESSMENT AND ASSIGNMENT PLANNING ROADMAP

ASSESSMENT TYPES ALIGNED WITH BLOOM'S TAXONOMY RESOURCE

We've addressed assessment previously in the Prepare stage, but that assessment focused on how to measure the success of the curriculum project. In this stage, we focus on assessing students' success in achieving the SLOs for the program or course. Often, the assessments that you design for your program or course can be used as evidence for measuring the success of your curriculum project. This, however, is not always possible. For example, if one of your goals for the curriculum project is to reduce the number of Drop, Fail, and Withdrawals from your courses, you'll likely have to use assessment measures not directly included in the course (i.e., end-of-term grades).

## CHOOSING PEDAGOGIES

Once you've considered what you want students to know and how you might assess their knowledge, you'll want to think about how to help them attain that knowledge. Using evidence-based pedagogies that support your SLOs and prepare students for your assessments is an essential piece of a strong curriculum. It's difficult to create an exhaustive list, but here's a look at five pedagogical practices that can make a difference in students' success and engagement in the classroom:

### EXPERIENTIAL LEARNING

Experiential Learning is the process by which instructors intentionally engage students in "learning by doing" and reflection experiences.<sup>25</sup> Engaging students in hands-on experiences provides them opportunities to learn through discovery and exploration as one way to solve real-world problems. This resource highlights twelve types of experiential learning common at UT.

### ACTIVE LEARNING

Active learning is defined as "anything that involves students in doing things and thinking about the things they are doing."<sup>26</sup> Active learning in face-to-face and virtual classrooms can help students become active participants and escalate their learning to higher levels of Bloom's Taxonomy, typically through individual and collaborative learning. This webpage provides several resources to support active learning.

### PROBLEM-BASED LEARNING

Problem-Based Learning (PBL) asks learners to develop a viable solution to an ill-structured problem by conducting research, integrating theory and practice, and applying relevant knowledge and skills. Critical to its success is the selection of an ill-structured problem (often interdisciplinary) and structuring of the learning experience by the instructor, who guides the learning process and conducts a thorough debriefing at the conclusion of the learning experience.<sup>27</sup>This webpage provides several resources, including sample syllabi and rubrics for evaluating PBL.

### COLLABORATIVE LEARNING

Collaborative learning constitutes any teaching and learning strategies that promote student collaboration in small and large groups. Research shows that working in groups can increase students' confidence in completing highly complex tasks.<sup>28</sup> When developing collaborative activities, consider these five pillars of collaborative work in the classroom.

### WELL-BEING

Designing for student well-being is critical for engaged learning and student success.<sup>29</sup> Research indicates that some practices that may boost student well-being in the classroom are establishing a safe learning environment, creating connection, and practicing inclusive learning. This source highlights more ways to proactively create a classroom that supports student well-being.

4

As you begin to build your curriculum map, consider how these pedagogies above along with others (perhaps a discipline-specific signature pedagogy, such as field education for social work) can help your students achieve your SLOs.

## TEACHING MATERIALS

Curriculum design also includes planning and selecting appropriate teaching materials to help students acquire knowledge and skills and develop cognitive processes. Standardization of curriculum items (e.g., teaching materials, assessments, learning objectives, grading rubrics) across course sections or program creates consistency.<sup>30,31</sup> This consistency has the potential to ensure equitable procedures and/or practices, which supports students' understanding of expectations and ultimately supports their success.

When identifying teaching materials to use during the course/program, consider the SLOs to be achieved, abilities to be learned, and the level of engagement. For example, students who are learning about dissection in biology might benefit from hands-on experiences with supplemental reading materials. As you begin to develop your curriculum, consider this important question: What will be standardized across courses or programs to support students' success?

Examples of teaching materials include:

- Textbooks
- Open Educational Resources (OERs)
- Lectures
- Presentation slides (with closed captions)
- Syllabi
- Study guides/handouts

- Expert interviews/Guest speakers Digital media (e.g., podcasts, TEDx Talks, YouTube)
- Educational games
- Interactive data (e.g., Mentimeter, Padlet)
- LinkedIn learning
- Canvas discussion prompts
- Simulations

The teaching materials you create in this stage can be excellent artifacts that highlight the work that you are doing. These materials can provide evidence to support certain curriculum-related goals (e.g., aligning curriculum across sections of a course or creating a more inclusive classroom), so integrating them into your assessment plan as artifacts for analysis can provide a convenient way to evaluate the effectiveness of your project.

### PRO TIP

Before you move on to implement your curriculum, go back to your goals and your assessment plan. Make sure that the curriculum you have developed aligns with your goals and your assessment plan. If not, that's OK. These processes often take a different route than originally expected. Take some time to revise your goals and especially your assessment plan. Once you implement the curriculum, you'll begin gathering data for assessment. If you later realize that your assessment data is not providing the information you need, it is possible to go back and gather different data, but that can be more difficult.

# 

## FACULTY TRAINING

Once you've developed your curriculum and you're ready for instructors to begin using it in their classrooms, it's important to make sure that your instructors feel prepared. Training faculty in the new curriculum can help ensure that they are confident in their ability to successfully integrate the changes and will help you ensure consistency across your program.

Training can look different depending on the needs and structure of the department. It may be best to train faculty in a pre-semester retreat in August to implement the new curriculum in the fall, but one advantage of the University's winter mini-term is that you can also use that time to train faculty and then implement in the spring.

If faculty are unavailable for a retreat, you may also consider a series of trainings throughout the semester to prepare for implementation the following semester. Even if you're doing a DIY curriculum revision, this is a great opportunity to reach out for additional support. TLI is always available to help with retreats and trainings to help build faculty expertise and provide opportunities to build community across your faculty so that everyone feels invested in the new change. If you're interested in TLI supporting your trainings for faculty, please fill out our request for service.

### CURRICULUM MATERIAL REPOSITORY

In addition to training, you'll want to make sure any of the standardized teaching materials that you developed in the previous stage are readily available and accessible to faculty. Whether this means building a Google drive, a Microsoft SharePoint, a common Canvas page, or other repository, an easily accessible and well-organized repository will help support faculty as they build their new courses.

A repository also offers a place to gather materials that will help you assess your new curriculum. Offering faculty a place to upload syllabi, assignments, and other materials will provide you with artifacts to analyze for assessment. It will also create an opportunity for instructors to share with one another and can be especially helpful for onboarding new instructors so they can see how instructors are implementing the curriculum.

### DATA GATHERING

As you implement your plan, you'll want to make sure that you are gathering materials to assess your curriculum project, as outlined during Preparation. Gathering as you go will make things easier once you're ready to complete your assessment. Some of this data, like course materials, may be collected and posted in the repository mentioned above. Other data, like FERPA protected data or surveys of faculty's experience with the curriculum, will need to be stored in a secure location and possibly de-identified to protect students' and faculty's privacy. The Office of Institutional Research and Strategic Analysis can provide guidance for how to store sensitive data.

### **PRO TIP**

Ensure that faculty have visible opportunities for continued support throughout this implementation phase. This curriculum will be new for everyone, and faculty may not know what questions to ask or what concerns will arise while participating in trainings. Having a point person/team of people to reach out to when these situations arise will help faculty feel supported. Consider offering "Curriculum Office Hours" at a convenient location (free food and drinks always a bonus!) where faculty can drop in to discuss challenges.

## REFLECT & REVISE

### REVISE

As with any change, it can take time to see the results, so it's not likely that you'll undertake a full curriculum revision process every year. The length of your implementation may depend on multiple factors, such as the University's program assessment cycle or your accrediting body's requirements. Still, as you gather information during the implementation stage, there is a possibility that you may make some small tweaks if you notice major concerns. Generally, you will be gathering data and information for at least 3 years, at which point, you will, hopefully, have the majority of the data that you need for determining the success of the curriculum.

As you analyze your data, you'll want to return to your goals and use your data to see how much progress you've made toward your goals. As you review the data you've gathered, you may consider a variety of next steps:

- You may choose to make revisions to your curriculum to help you continue to work toward your goals.
- You may choose to make revisions to your goals if you feel there is room for continued improvement or if the data suggests you chose an unattainable goal.
- You may consider revisions to your assessment measures if the data you have gathered does not tell you what you need to know about your progress toward your goals.
- You may feel satisfied with your progress, which will offer you an opportunity to create new goals when you undertake your next curriculum project.

### REFLECT

Another salient and often overlooked step in the process of curriculum development is reflection. The revision step outlined above is one type of reflection, but it will also be important for the team to take time to reflect on the curriculum development process itself. Reflection is about reviewing, analyzing, and evaluating experiences and discovering specific and valuable take-aways, particularly as your unit will likely undertake another curriculum project at some point in the future. It can also be a wonderful way to wrap up and provide closure to the process, which has certainly required much time and investment from those involved. Research suggests that reflection can have a significant part in the process of developing successful courses or programs.<sup>32</sup>

The roadmap on the right highlights the three-stage reflective model, "What?, So What?, and Now What?", and provides some questions that can help you jumpstart your reflection after the completion of the curriculum.<sup>33</sup>



### PRO TIP

As you wind down your curriculum development process, you're likely sitting on a treasure-trove of data and experience that could help other departments or universities as they consider how they might develop their own curriculum. In other words, all of the work that you have done may set you up to present or publish on your experience. The Scholarship of Teaching and Learning is one of TLI's 4 Areas of Excellence, and we provide holistic support to faculty who want to present and publish, including support with navigating the IRB process. Consider reaching out to us if you are interested in publishing or presenting on your curriculum development project.

### **IN-TEXT CITATIONS**

- 1. Wiggins, G., & McTighe, J. (1998). Understanding by Design. Alexandria, VA: Association for Supervision and Curriculum Development.
- 2. Branch, R. M. (2009). Instructional design: The ADDIE approach. New York: Springer.
- 3. Kliebard, H. M. (1970). The Tyler rationale. The School Review, 78(2), 259-272.
- 4. Dick, W., Carey, L., & Carey, J. O. (2013). A model for the systematic design of instruction. Instructional Design: International Perspectives: Theory, Research, and Models, 1, 361-370.
- 5. Taba, H. 1962. Curriculum Development: Theory and Practice, New York: Harcourt Brace.
- 6.Ibrahim, A. A. (2015). Comparative analysis between system approach, Kemp, and ASSURE instructional design models. International Journal of Education and Research, 3(12), 261-270.
- 7. Wheeler, D. K. (1969). Curriculum process.
- 8. Thomas, L. G., & Knezek, D. G. (2008). Information, communications, and educational technology standards for students, teachers, and school leaders. International handbook of information technology in primary and secondary education, 333-348.
- 9.Burrell, A. R., Cavanagh, M., Young, S., & Carter, H. (2015). Team-based curriculum design as an agent of change. Teaching in Higher Education, 20(8), 753-766.
- 10.Dam, R., & Siang, T. (2018). Prototyping: Learn Eight Common Methods and Best Practices. Interaction Design Foundation Website. https://edtechbooks.org/-SZt Gallup, I. (2023, February 28).
- 11. Compare Clifton strengths Assessment Options. Gallup.com. Retrieved March 23, 2023, from https://www.gallup.com/cliftonstrengths/en/253868/popular-cliftonstrengths-assessment-products.aspx
- 12.Beer, M., & Nohria, N. (2000). Cracking the code of change. Harvard business review, 78(3), 133-141.
- 13. Glatthorn, A. A. (2004). Developing a quality curriculum. Waveland Press.
- 14. English, F. W., & Kaufman, R. A. (1975). Needs Assessment: A Focus for Curriculum Development.
- 15. Konrad, M., Keesey, S., Ressa, V. A., Alexeeff, M., Chan, P. E., & Peters, M. T. (2014). Setting clear learning targets to guide instruction for all students. Intervention in School and Clinic, 50(2), 76-85.
- 16. Weiner, W. F. (2009). Establishing a culture of assessment. Academe, 95(4), 28-32.
- 17. Uchiyama, K. P., & Radin, J. L. (2009). Curriculum mapping in higher education: A vehicle for collaboration. Innovative Higher Education, 33, 271-280.
- 18. Quick guide to curriculum maps Washington State University. (n.d.). Retrieved March 23, 2023, from https://ace.wsu.edu/documents/2015/03/curriculum-mapping.pdf/
- 19. Richlin, L. (2006). Blueprint for learning: Constructing college courses to facilitate, assess, and document learning. Stylus Publishing, LLC.

## **IN-TEXT CITATIONS**

20. Teaching and learning commons: Writing effective learning outcomes. Teaching and Learning Commons | West Virginia University. (n.d.). Retrieved March 24, 2023, from

https://tlcommons.wvu.edu/course-curriculum-design/writing-effective-learning-outcomes.

21. Glazer, N. (2014). Formative plus Summative Assessment in Large Undergraduate Courses: Why Both?. International Journal of Teaching and Learning in Higher Education, 26(2), 276-286.

22. Astin, A. W. (2012). Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education. Rowman & Littlefield Publishers.

23. Evans, S. G. (2013). Five characteristics of quality educational assessments. Portland, OR: Northwest Education Association.

24. CAST (2018). Universal Design for Learning Guidelines version 2.2. Retrieved from https://www.cast.org/our-work/projects/udl-perspective-assessment

25. Association of Experiential Education (n.d.) What is experiential education? https://www.aee.org/what-is-experiential-education.

26. Bonwell, C. C., & Eison, J. A. (1991). Active learning: Creating excitement in the classroom (ASHE-ERIC Higher Education Rep. No. 1). Washington, DC: The George Washington University, School of Education and Human Development. (p.3)

27. Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn?. Educational psychology review, 16, 235-266.

28. Kirschner, F.; Paas, F.; Kirschner, P.A. Superiority of collaborative learning with complex tasks: A research note on an alternative affective explanation. Computers in Human Behavior, 27(1), 53–57. https://doi.org/10.1016/j.chb.2010.05.012

29. American Council on Education (n.d.). Campus mental health and well-being.

https://www.acenet.edu/Research-Insights/Pages/Student-Support/Student-Mental-Health.aspx 30. Walker, D. F. (1971). A naturalistic model for curriculum development. The school review, 80(1), 51-65.

31. Glazer, N. (2014).

32. Handelzalts, A. (2019). Collaborative curriculum development in teacher design teams (pp. 159-173). Springer International Publishing.

33. Rolfe, G., Freshwater, D., & Jasper, M. (2001). Critical reflection in nursing and the helping professions: a user's guide. Palgrave Macmillan.



### **TEACHING & LEARNING INNOVATION**

821 Volunteer Blvd Greve Hall 618 tli@utk.edu tli.utk.edu

All qualified applicants will receive equal consideration for employment and admission without regard to race, color, national origin, religion, sex, pregnancy, marital status, sexual orientation, gender identity, age, physical or mental disability, genetic information, veteran status, and parental status. In accordance with the requirements of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, the University of Tennessee affirmatively states that it does not discriminate on the basis of race, sex, or disability in its education programs and activities, and this policy extends to employment by the university. Inquiries and charges of violation of Title VI (race, color, and national origin), Title IX (sex), Section 504 (disability), the ADA (disability), the Age Discrimination in Employment Act (age), sexual orientation, or veteran status should be directed to the Office of Equity and Diversity, 1840 Melrose Avenue, Knoxville, TN 37996-3560, telephone 865- 974-2498. Requests for accommodation of a disability should be directed to the ADA Coordinator at the Office of Equity and Diversity. This is a project of Teaching and Learning Innovation.