

Flipped Classroom Workshop

A Workbook for Active Learning Pedagogy and Andragogy

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STEP 1: Articulate the high level goals of the course. (Not to be confused with Learning Objectives)

Course Goal(s)	Goal #
<i>Example:</i> The goal of Introduction to Astronomy is to understand how the universe and all its contents began, have developed, and will end--and to appreciate our place in the cosmos.	1

STEP 2: Brainstorm - Identify and list what the student must be able to do to reach the course goal (the course goals are a general statement of that the student will achieve, these are the details):

STEP 3: Categorize

Must Know	Should Know	Nice to Know

STEP 4: Order and organize into modules and describe what the student will do as a learning objective. For each item listed under the modules write a Learning Objective. A Learning Objective should have an observable performance (Table 1), condition and criteria. Example: Provided with plant samples, the student will identify the four types of grasses used in Florida urban landscapes. Remember that not specifying a measure of success implies 100% attainment by the student.

Module 1: _____

(Condition) _____ the student will (behavior and criteria) _____ BT level: ____

(Condition) _____ the student will (behavior and criteria) _____ BT level: ____

(Condition) _____ the student will (behavior and criteria) _____ BT level: ____

Module 2: _____

(Condition) _____ the student will (behavior and criteria) _____ BT level: ____

(Condition) _____ the student will (behavior and criteria) _____ BT level: ____

(Condition) _____ the student will (behavior and criteria) _____ BT level: ____

Module 3: _____

(Condition) _____ the student will (behavior and criteria) _____ BT level: ____

(Condition) _____ the student will (behavior and criteria) _____ BT level: ____

(Condition) _____ the student will (behavior and criteria) _____ BT level: ____

Develop as many modules and LOs as needed.

Alignment of objectives, assessment and materials

Using the templates below follow steps 5 to 8 to align assessments, instructional materials and tools.

STEP 5: For each learning objective design how you will evaluate the level of performance of the student (Table 2).

STEP 6: List materials that can be used by the student to learn.

Step 7: List needed educational technology tools.

Step 8 Add Flipped classroom activities (Table 3)

Module (1): Example of using the form to align objectives, assessment and materials

Goal	Objective (students will be able to . . .)	Level	Assessment	Instructional Materials	Tool
1	Identify 4 types of galaxies.	1	Quiz with photos	View video lecture, visit Global Telescope Network website	Flashcards created with Study Blue
1	(sub-objective) Describe the composition of each type of galaxy.	1	Essay regarding the composition of an assigned galaxy.	Video Lecture (create outline), textbook reading	Google Sky
1	(sub-objective) Identify the types of matter that make up a galaxy.	2	PowerPoint presentation (peer reviewed) Rubric for grading	Video Lecture (above), textbook reading	PowerPoint, lynda.com, need upload instructions, peer review instructions

Module Template for the Individual Learning Component

Goal	Objective (students will be able to. . .)	Level	Assessment	Instructional Materials	Tool

Module Template for the Active Learning Component

Goal	Objective (students will be able to. . .)	Level	Activity

Table 1: Action Verbs for Bloom’s Taxonomy

Definitions	I. Remembering	II. Understanding	III. Applying	IV. Analyzing	V. Evaluating	VI. Creating
Bloom’s Definition	Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.	Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.	Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.	Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.
Verbs	<ul style="list-style-type: none"> Choose Define Find How Label List Match Name Omit Recall Relate Select Show Spell Tell What When Where Which Who Why 	<ul style="list-style-type: none"> Classify Compare Contrast Demonstrate Explain Extend Illustrate Infer Interpret Outline Relate Rephrase Show Summarize Translate 	<ul style="list-style-type: none"> Apply Build Choose Construct Develop Experiment with Identify Interview Make use of Model Organize Plan Select Solve Utilize 	<ul style="list-style-type: none"> Analyze Assume Categorize Classify Compare Conclusion Contrast Discover Dissect Distinguish Divide Examine Function Inference Inspect List Motive Relationships Simplify Survey Take part in Test for Theme 	<ul style="list-style-type: none"> Agree Appraise Assess Award Choose Compare Conclude Criteria Criticize Decide Deduct Defend Determine Disprove Estimate Evaluate Explain Importance Influence Interpret Judge Justify Mark Measure Opinion Perceive Prioritize Prove Rate Recommend Rule on Select Support Value 	<ul style="list-style-type: none"> Adapt Build Change Choose Combine Compile Compose Construct Create Delete Design Develop Discuss Elaborate Estimate Formulate Happen Imagine Improve Invent Make up Maximize Minimize Modify Original Originate Plan Predict Propose Solution Solve Suppose Test Theory

Action Words for Bloom’s Taxonomy					
Knowledge	Understand	Apply	Analyze	Evaluate	Create
define	explain	solve	analyze	reframe	design
identify	describe	apply	compare	criticize	compose
describe	interpret	illustrate	classify	evaluate	create
label	paraphrase	modify	contrast	order	plan
list	summarize	use	distinguish	appraise	combine
name	classify	calculate	infer	judge	formulate
state	compare	change	separate	support	invent
match	differentiate	choose	explain	compare	hypothesize
recognize	discuss	demonstrate	select	decide	substitute
select	distinguish	discover	categorize	discriminate	write
examine	experiment	experiment	connect	recommend	compile
locate	predict	relate	differentiate	summarize	construct
memorize	associate	show	discriminate	assess	develop
quote	contrast	sketch	divide	choose	generalize
recall	convert	complete	order	convince	integrate
reproduce	demonstrate	construct	point out	defend	modify
tabulate	estimate	dramatize	prioritize	estimate	organize
tell	express	interpret	subdivide	find errors	prepare
copy	identify	manipulate	survey	grade	produce
discover	indicate	paint	advertise	measure	rearrange
duplicate	infer	prepare	appraise	predict	rewrite
enumerate	relate	produce	break down	rank	role-play
listen	restate	report	calculate	score	adapt
observe	select	teach	conclude	select	anticipate
omit	translate	act	correlate	test	arrange
read	ask	administer	criticize	argue	assemble
recite	cite	articulate	deduce	conclude	choose
record	discover	chart	devise	consider	collaborate
repeat	generalize	collect	diagram	critique	collect
retell	give examples	compute	dissect	debate	devise
visualize	group	determine	estimate	distinguish	express
	illustrate	develop	evaluate	editorialize	facilitate
	judge	employ	experiment	justify	imagine
	observe	establish	focus	persuade	infer
	order	examine	illustrate	rate	intervene
	report	explain	organize	weigh	justify
	represent	interview	outline		make
	research	judge	plan		manage
	review	list	question		negotiate
	rewrite	operate	test		originate
	show	practice			propose
	trace	predict			reorganize
	transform	record			report
		schedule			revise
		simulate			schematize
		transfer			simulate
		write			solve
					speculate
					structure
					support
					test
					validate

Table 2: Assessment Types and Examples

Principles:

Assessment should help students to learn.

Assessment must be consistent with the objectives of the course and what is taught and learned.

<p>1. Thinking critically and making judgements (Developing arguments, reflecting, evaluating, assessing, judging) Essay Report Journal Letter of Advice to.... (About policy, public health matters) Present a case for an interest group Prepare a committee briefing paper for a specific meeting Book review (or article) for a particular journal Write a newspaper article for a foreign newspaper Comment on an article's theoretical perspective</p>	<p>2. Solving problems and developing plans (Identifying problems, posing problems, defining problems, analyzing data, reviewing, designing experiments, planning, applying information) Problem scenario Group Work Work-based problem Prepare a committee of enquiry report Draft a research bid to a realistic brief Analyze a case Conference paper (or notes for a conference paper plus annotated bibliography)</p>	<p>3. Performing procedures and demonstrating techniques (Computation, taking readings, using equipment, following laboratory procedures, following protocols, carrying out instructions) Demonstration Role Play Make a video (write script and produce/make a video) Produce a poster Lab report Prepare an illustrated manual on using the equipment, for a particular audience Observation of real or simulated professional practice</p>	<p>4. Managing and developing oneself (Working co-operatively, working independently, learning independently, being self-directed, managing time, managing tasks, organizing) Journal Portfolio Learning Contract Group work</p>
<p>5. Accessing and managing information (Researching, investigating, interpreting, organizing information, reviewing and paraphrasing information, collecting data, searching and managing information sources, observing and interpreting) Annotated bibliography Project Dissertation Applied task Applied problem</p>	<p>6. Demonstrating knowledge and understanding (Recalling, describing, reporting, recounting, recognizing, identifying, relating & interrelating) Written examination Oral examination Essay Report Comment on the accuracy of a set of records Devise an encyclopedia entry Produce an A - Z of ... Write an answer to a client's question Short answer questions: True/False/ Multiple Choice Questions (paper-based or computer-aided-assessment)</p>	<p>7. Designing, creating, performing (Imagining, visualizing, designing, producing, creating, innovating, performing) Portfolio Performance Presentation Hypothetical Projects</p>	<p>8. Communicating (One and two-way communication; communication within a group, verbal, written and non-verbal communication. Arguing, describing, advocating, interviewing, negotiating, presenting; using specific written forms) Written presentation (essay, report, reflective paper etc.) Oral presentation Group work Discussion/debate/role play Participate in a 'Court of Enquiry' Presentation to camera Observation of real or simulated professional practice</p>

Example of a Rubric

Rubrics are very useful to ensure a good assessment. Students will understand what is expected and evaluation will be uniform and fair.

Use Rubrics!

Work Effectively in Teams				
	Unsatisfactory 1	Developing 2	Satisfactory 3	Exemplary 4
Research & Gather Information	Does not collect any information that relates to the topic.	Collects very little information--some relates to the topic.	Collects some basic information--most relates to the topic.	Collects a great deal of information--all relates to the topic.
Fulfill Team Role's Duties	Does not perform any duties of assigned team role.	Performs very little duties.	Performs nearly all duties.	Performs all duties of assigned team role.
Share in work of team	Always relies on others to do the work.	Rarely does the assigned work--often needs reminding.	Usually does the assigned work--rarely needs reminding.	Always does the assigned work without having to be reminded.
Listen to Other Teammates	Is always talking--never allows anyone else to speak.	Usually doing most of the talking--rarely allows others to speak.	Listens, but sometimes talks too much.	Always listens to others and allows them to speak.

Dimensions (points to the criteria rows)

Scale (points to the performance levels columns)

Criteria (points to the specific performance descriptions in the cells)

Table 3: In Class Activities

Example Activities for Different Levels of Blooms Taxonomy		
Remembering	Understanding	Applying
Analogies Examples Illustrations Lecture Multiple Choice Test Poster Presentation Short Answer Test Visuals/Audio	Comparisson Diagram Cartoon Outline Discussion Board Implication from an Idea Match Model Multiple Choice Test Oral Report Own Statement Photograph Poster Presentation Short Answer Test Speech Summary Written Report	Build/Create Demonstrations Diagram Drama Follow an Outline Forecast Illustrate List Map Project Propose Questions/Solutions Role Play Simulations Sketches
Analyzing	Evaluating	Creating
Argument Case Studies Critical Incidents Discussion Graphs Problem Exercises Propaganda Questionnaire Survey Syllogism Breakdown	Appraisals Case Study Critiques Project Self-Evaluation Simulation Standard Compared/Standard Established Survey Valuing Writing Conclusions	Alternative Action Plans Articles Case Study Construct Simulation Consulting Creative Exercises Develop Plans Experiment Formulation of Standards Games Hypothesis Invent Problem Project Set of Rules