

Module 7 : Pedagogy

# Pedagogy

Pedagogy refers to the art and science of teaching, and any methods a teacher uses to teach. Pedagogy is both an art and a science because there are infinite strategies you can learn to help your students, but there is also artistry involved in how you implement those strategies. Since you may not be in the classroom yet, we will focus on the science side of teaching, and let you discover the artistry as you begin working with your students. In this module we will discuss the best ways to impart information upon your students, and how to learn from your experiences and continue improving throughout your career as an educator.

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# 7.1 Exposition

Pedagogy is such a complex topic that it could be its own course. As we discuss the theories that form a teacher's planning, implementation, and assessment, keep in mind we are giving an overview rather than a comprehensive study. Here are some of the most well-known theories of education.

Considering that education in some form or another has existed since the dawn of man, it is surprising to know there are many different theories on the best way to provide education for students. While many of these theories can work together to inspire teachers in their planning and instruction, some of them directly contradict each other and have led to debates within the profession. Here, we will cover a few of those theories, and discuss how they can inform your teaching.



### 7.1.1 Bloom's taxonomy (1 of 2)

Benjamin Bloom studied learning and came to the conclusion that learning activities could be categorized into 6 segments based on the level of thinking that they require. He framed his theory into the shape of a triangle with the lowest-level thinking at the bottom. He did this because even though the lower-level activities require less thinking, they provide the base for higher-level thinking. He believed (as many do) it is hard to extend your learning on a topic if you do not understand the topic itself. We will discuss each category in reverse order, starting with what Bloom labeled as the lowest level of thinking.

1. Remember: At the base of this triangle, representing the lowest level of thinking, is any activity that requires a student to recall facts and basic concepts. These types of activities are extremely important in a student's learning since it is hard to take the next step without first knowing the basic facts. Activities that require students to remember include defining words, memorizing facts, listing things, and repeating information.

2. Understand: At the next level of thinking, teachers ask students to comprehend what they are memorizing and repeating. In order for students to explore content in any way, they need to comprehend what they are studying. Activities that require students to explain ideas or concepts include classifying information, describe, discuss, and explain information.

3. Apply: Once students understand the information they are learning, they can take the next step and apply what they learned to new situations. This displays a higher level of thinking because the student needs to understand the concept enough to apply it to something different. For example: a student may recite Romeo & Juliet which displays memory. They may comprehend the play enough to explain it, which displays understanding. Now, if they can take that comprehension of the play and use it to understand Othello, they are applying their knowledge. Activities that require students to apply their knowledge include implementing plans, solving problems, and demonstrating knowledge.

4. Analyze: True analysis of a concept requires a student to have accomplished all the levels of thinking that come before it. In order to delve into a topic and analyze more than what is explicitly stated, a student needs to understand it completely. When students analyze, they draw connections between ideas and explore connotative and deep meaning. Activities that require students to analyze include differentiating information, organizing information, comparing and contrasting, and experimenting.

5. Evaluate: The act of evaluating does not necessarily require much thinking; we are constantly in judgment of things we know nothing about. However, to make an accurate judgment about something, you need to completely understand it. Ask your students if Americans were justified in fighting against the British in the American Revolution. They will need to understand how the war began, why each side fought, then make a determination about the colonies' justification. Activities that require students to justify a stand or decision include appraisals, arguments, judgments, and critiques.

6. Create: The highest level of thinking, according to Bloom, is when you ask your students to synthesize what they have learned and create something new. The idea behind the emphasis on this skill is that students need to understand something completely to now go and create something of their own that is related. Activities that require students to synthesize their knowledge include designing, assembling, constructing, writing (something original), etc.



# 7.1.3 Behaviorism (1 of 2)

Behaviorist theory is an idea that hinges completely on motivation, and how teachers can get students to succeed in the classroom. While many thinkers contributed to the formation of behaviorism, the ideas can be summed up by the famous experiment conducted by Ivan Pavlov, who proved that a dog could be conditioned to respond to a specific stimulus that does not inherently cause that response. He did this by essentially ringing a bell every time he gave a dog food, to the point where the dog began to salivate in anticipation of food when hearing the bell. After some conditioning with this model, he removed the original stimulus, and found that the dog continued to salivate at the sound of the bell, even when it was not followed by food. The dog had now been conditioned to feel hungry whenever he heard the bell, according to Pavlov.

In order to understand the educational theory, we first need to clear up a few phrases that are misunderstood more often than not. Since behaviorism depends heavily on response to a stimulus, the following phrases refer to the manipulation of stimuli by an outsider (in our case, the teacher):

**Positive reinforcement:** When an outsider rewards a desired behavior by providing a desired stimulus. An example of this is giving a student a good grade for working hard on an assignment.

**Negative reinforcement:** This is probably the most misunderstood term in behaviorism. The word negative refers to removal, and the word reinforcement refers to a stimulus. Therefore, negative reinforcement is when an outsider rewards a desired behavior by removing an undesirable stimulus. An example of this would be rewarding a student for good behavior by not yelling at him or her like you normally would.

**Positive punishment:** This is when an outsider presents the subject with an undesirable stimulus as a consequence of doing something wrong or not doing something right. An example of this would be giving a student an F for not doing his or her work.

**Negative punishment:** This is when an outsider removes a desired stimulus from the subject as a consequence of doing something wrong or not doing something right. An example of this would be telling a student he or she can no longer sit with friends because he or she is misbehaving.

**Pavlov's experiment displayed classic conditioning, which refers to conditioning involuntary behavior** (a dog does not choose to salivate). B.F. Skinner extended this idea, referring to his ideas as operant conditioning, which refers to conditioning voluntary actions through reinforcement and punishment.



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### 7.1.4 Behaviorism (2 of 2)

According to this theory:

• Learners are not active in the learning process, but rather passive participants who are simply responding to stimuli.

• Learners begin as a blank page, and behavior is only shaped when stimuli provide either positive or negative reinforcement.

• The more a behavior is reinforced, whether negatively or positively, the more likely the student is to repeat that behavior.

• In the same way, the more a behavior is punished, whether negatively or positively, the less likely the student is to repeat that behavior.

• In operant conditioning, B.F. Skinner tested the efficacy of different methods of disbursements for reinforcement and punishments. In other words, how often do you need to reinforce or punish behavior in order for it to have the most lasting effect on the subject?

• Continuous reinforcement: This is when a subject is reinforced every time he or she performs the desired behavior. Skinner found that this did not motivate subjects. They did not work as hard, and when the reinforcement was removed, they quickly stopped performing the desired behavior.

• Fixed ratio reinforcement: This is when the subject is reinforced after a specific amount of time he or she performs the desired behavior. Skinner found that subjects worked harder with this method, and were less likely to stop the desired behavior after the reinforcement was removed. However, this was not the most effective method.

• Fixed interval reinforcement: This is when a subject is reinforced after a designated amount of time, provided the desired behavior has been performed at least once during that time. Skinner found the subjects worked moderately hard and were about as likely to stop the behavior as the previous model after the reinforcement was removed.

• Variable ratio reinforcement: This is when the subject is reinforced after a random amount of times performing the desired behavior. Skinner found this method made subjects work hard, and took a long time to stop the behavior after the reinforcement was removed.

• Variable interval reinforcement: This is when the subject is reinforced after a random amount of time elapsed, providing the subject performed the desired behavior at least once in that time. Skinner found this worked equally as well as the previous model, with subjects working hard and taking a long time to stop the desired behavior after the reinforcement was stopped.

# 7.1.5 Constructivism

Constructivism hinges on the idea that educators need to meet students wherever they are (in terms of skills and knowledge), and help them build on prior knowledge. It is also a theory that seeks to help students find their own way as they experience learning, and come to their own conclusions.

According to this theory:



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• The teacher takes a back seat and monitors students as they take control of their learning. A traditional classroom is teacher-centered, but a constructivist classroom is student-centered.

• Students have an active involvement in the lesson. Instead of passively accepting the work given by the teacher and completing it to receive a grade, the student drives the lesson and works toward a goal with the teacher's guidance.

• The class feels less like dictatorship, which is run solely by one person, and more like an environment run by the entire class.

• Teachers allow the students to find their own answers rather than telling the students what answers to look for. Students explore things in their own ways and come to their own conclusions, instead of exploring things the way the teacher tells them to and coming to the conclusions the teacher wants them to come to.

• Teachers encourage students to be autonomous, which means they encourage students to be independent and motivated by their own goals and interests.

Many modern classrooms are moving toward this model, or at least toward a model that is similar, following the next theory we will discuss.

# 7.1.6 Student-centered learning

While constructivism is student-centered, there is a movement in modern education for a broader embrace of student-centered learning, even if it is not technically considered constructivist. Since the ideas of student-centered learning have already been covered in constructivism and by the clarity of the title, we will focus this section on how theorists believe student-centered learning benefits the students.

• Research shows that student-centered learning works because a student's potential for learning relies heavily on what he or she already knows. This can affect what new information is important to the student, how he or she processes new information, and how he or she determines what is important. With student-centered learning, students are free to work at their own pace, starting at their ability level or base of knowledge.

• One of the most important parts of learning is reflection; having a student look back at what he or she learned, how he or she learned it, and where he or she needs to go from here. A less teacher-centered environment allows students more opportunities for this type of reflection.

• Students who are involved in student-centered learning have reportedly been more motivated and satisfied by the school experience. This is because they are more likely to feel accomplished by their work than if they were simply doing what the teacher told them to do.

• Student-centered learning is open to differentiation, which allows students with developmental, cognitive, or other differences, to all progress. A teacher leading the class is more likely to need all of his or her students to reach a specific spot at the end of the lesson. Students working independently can set their own goals.



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• One of the biggest obstacles teachers face is the student who is not engaged. Studies have shown that asking students to move around, control their learning, and take responsibility for their development, lead to more motivation and progress from the students than in traditional classrooms.

### 7.2 Modeling

One of the best ways to help students understand new knowledge or get a grasp of difficult skills is through modeling and scaffolding, which involve the teacher showing students how things are done. Too often in education, teachers make the assumption that students already know exactly what they need to do. More often than not, this is not true. Students will benefit from watching the teacher model a skill or activity. Students are incredibly influential and will look to the teacher for examples on how to act, what to do, and how to succeed. Here are some different ways you can model for your students:

• Model desired personal characteristics: Present yourself as a role model for optimal behavior during a lesson. At any given time in your classroom, you are asking students to be responsible, creative, diligent, thoughtful, and respectful (to name a few). Students are more likely to meet these expectations if they see you meeting them as well.

• Model a task: Let's say you want to teach active reading and annotation strategies to your students. You can do one of two things. You could tell the students exactly what they should do and let them do it, or you could show them what they should do, and help them work on it. Select a piece of reading, and read it with the class, annotating it in the same way you expect your students to annotate. This way, there will be no confusion about what you are expecting from them.

• Model metacognitive thinking: When you are trying to help your students become better thinkers and arrive at conclusions more efficiently and effectively, it can help to show them how your thought process works. In math class, this works perfectly because you can walk your students through the process of solving a problem. In language classes, you could walk your students through how you would break down a word for proper pronunciation and potential meaning.

• Let the students do the modeling: Assess your students strengths and weaknesses, and give them opportunities throughout the year, or course, to model their strengths to the class. Not only will you be reinforcing their success and solidifying their mastery of the skill, but you will be letting students learn from other students.

In whatever way you choose to use modeling, you will make a huge impact on how well your students understand the skill or knowledge you are working on. Sometimes, students need to see how it is done, not just hear how it should be done, in order to find success.



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### 7.3 Know where you are going

Instruction planning is not an aimless adventure where teachers decide what they are doing as they go; it takes a lot of forethought. In order to be effective as an educator, you have to understand what you are leading to on day one, and categorically take steps to prepare your students to reach that goal. In order to be an effective teacher, you have to know where you are going, and if you want to have an impact on your students, you should also let them know where you are going.

# 7.3.1 Planning for assessments (1 of 2)

Backwards planning is an educational strategy that helps teachers make sure everything they do leads to their assessment. It is a pretty simple idea, though it is fairly difficult to execute perfectly. Here are the steps you need to take if you would like to implement backwards planning.

1. First figure out exactly what you are trying to do with the unit you are planning. At the end of the unit, what are you hoping your students will be able to do? These are your unit objectives, and should be created with care because everything you do during the unit will have to work toward these objectives. When you are creating these objectives, focus on what the students will be able to do by the end of the unit rather than the content you want to cover. Your ultimate goal is to lead your students to success, not get to a specific point in your curriculum.

2. Design an assessment in line with the objectives you created. If your objectives are an expression of what your students should be able to do by the end of your unit, then your assessment needs to assess whether your students are able to do these things. Think of it this way: if you bring your car to a mechanic and they tell you they will fix your car, you will assess their success by whether your car is fixed when they are done with it. If you say your students will be able to do A, B, and C by the end of your unit, you need to assess whether they can do A, B, and C at the end of the unit.

1. Now that you have created objectives and designed an assessment, you need to figure out what your students will need to achieve your objectives. What skills do they need to improve on? What knowledge do they need? What do they need to practice? What steps do they need to take to get to the point where they can be successful on the assessment, and therefore fulfill your objectives?

### 7.3.2 Planning for assessments (2 of 2)

1. Design a unit worth of lesson plans to target the specific skills, knowledge, and areas you have identified as necessary for your students to find success. The whole planning process is recursive. Make objectives, make a tool for assessing whether students have reached the objectives, identify what the students need to succeed on the assessment, and design instructions that target the students' needs.



2. After you have taken your students through the unit and graded the assessment, it is time to reflect on your teaching. Your objectives were to help your students be able to do A, B, and C. Were you successful? Did enough students succeed that you can move forward without worrying about their progress? If students did not succeed, what kept them from succeeding? How can you do things differently the next time you implement the unit to ensure that your students are more successful?

3. There are two ways in which the previous reflection can inform your teaching. First, redesign your unit so it more effectively helps students achieve your objectives. Next year, when you teach the unit, you should have more success. Second, what skills did the students miss in this unit that they will need in the next unit? Their performance in this unit should inform your planning of the next unit. If the majority of students do not get the skill you were planning for them to hone, then it should become one of your objectives for the next unit. You cannot write them off and hope for better results next year. You need to make up for it with these students, and adjust your instruction so that it is more effective next year.

### 7.4 Constructive criticism

The process we discussed in the previous section does not fall only on your shoulders as the teacher. Great teachers make the students a part of the process, asking them to reflect on their own learning, and identify what kept them from finding success. In order to do that, they need to receive honest and specific feedback from you on their performance. Telling a student "good job" isn't going to help them improve at all. Honesty is important, but it is also important that you are sensitive to the fact that excessive criticism could simply demotivate your students. Here are some tips for providing your students with constructive criticism:

• First of all, you need to make sure your expectations are very clear to your students. If they properly understand what is expected of them, you can get a true picture of what they are able to accomplish, and they don't feel blindsided by your feedback. If you have the opportunity, you may want to provide your students with examples to show them what a successful assessment looks like as opposed to an unsuccessful assessment.

• When you are providing feedback, be specific. Vague, general feedback is worthless. You are already going to have to overcome the obstacle of students not paying attention to your feedback; if you provide meaningless feedback, they are even less likely to focus on it. This is important when you are giving feedback on what they did well as much as it is when you are providing feedback on their weaknesses.

• Try to balance your positive and negative feedback. Never only provide negative feedback; there is always something good you can say. While a student will be upset getting negative feedback, it will definitely help that you have provided a silver lining so they see their work was not worthless.

• Refer back to your instruction. If students are struggling with something you have not taught in the unit, then it is something you will have to discuss with them; if it is something you have gone over, then you will probably have to go over it again. When the students are struggling with something you haven't taught, it may not be fair to punish them for it, so instead provide encouraging feedback that identifies the weakness and promises you'll discuss it as a class.



• Require your students to do some sort of reflection activity that forces them to read or review the feedback you have provided. If they do not receive the feedback, what is it accomplishing?

Link to Exam