

Please Scroll down to find the learning theory you wish to view:

LEARNING THEORY: BEHAVIORISM

Primary Theorists:

Ivan Pavlov (1849-1936)
Classical conditioning sets the stage for behaviorism.

B.F. Skinner (1904-1990)
Operant conditioning

John B. Watson (1878 - 1958)
Founder and champion.

Definition:

Behavioralism is a school of thought that defines learning in environmental events (Schrunk). It is characterized by operant conditioning and the belief that mental representations are not reliable enough to constitute scientific inquiry. Systematic observation of behavior corresponding to environmental conditions provides the backbone of psychology and learning theory rooted in behaviorism. (Driscoll).

Best Suited Activities:

Musical - Responding to conductors' cues.

Linguistic- Association of an image with a word (i.e., foreign language practice).

Business- Align observable behaviors, such as cashier balancing at the end of a shift, with training. Consistent accuracy could be reinforced with a bonus at each quarter.

Learning Activity: Respond to Conducting Cues

1. Students imitate the instructor, conducting a 2/4 meter signature to Beethoven's [*Symphony No. 3 Finale in E-flat major*](#). The volume on the recording should be at an average, easy listening volume.
2. Next, the clip will be played at a low volume, and students will imitate the instructor again. The instructor should make the conducting gestures smaller to show that the volume is quieter but will not verbalize this.
3. Next, the instructor will ask, "What happened with our conducting? Was it the same or different?" and, "How so?" A discussion will take place until it is determined that the conducting gestures got smaller. The teacher will respond by saying, "That's curious."
4. Next, the activity will be repeated, but the volume should be noticeably loud this time. The students should imitate the conducting gestures, which will be larger or more space.
5. Next, the instructor will ask, "What happened with our conducting? Was it the same or different?" and, "How so?" A discussion will take place until it is determined that the conducting gestures got larger. The teacher will respond by saying, "That's curious."
6. This exercise will continue, and on each repetition, the volume should change, and the conducting gestures should adapt to fit the volume level. Ideally, students will notice the pattern and associate larger gestures with louder music and smaller gestures with quieter music. The instructor may ask, "Is there a pattern here?" Allow students to discover and describe the association.
7. Game & Evaluation: Students hide an object while one class member (the seeker) steps outside the room. When the seeker re-enters the room, music will be playing, and the class will conduct. The seeker shall slowly move about the room, looking for the object. When the student is far away from the object, the teacher will turn the volume dial down, and students shall conduct in a 2/4 pattern using small gestures. When the student gradually moves closer to the object, the teacher turns the volume up, and students conduct larger patterns. Using these clues, the object shall be located. Then, Repeat rounds with alternate seekers.
8. Observe student conducting patterns as the dial on the volume gradually changes, as dictated by the seeker's proximity to the hidden object. Provide reinforcement when the size of the conducting pattern is commensurate with the volume level and corrective feedback when it is not.
9. The game continues on successive days until students are conditioned to conduct large patterns when loud and small patterns when music is quiet.

LEARNING THEORY: Social Cognitive Theory

Primary Theorists:

Albert Bandura (1925 - 2021)
Social Cognitive Theory

Definition:

A movement, in reaction to behaviorism, takes "thoughts and ideas seriously as a psychological phenomenon" (Hoadley & Van Haneghan). Social Cognitivism sees the environment, personal factors, and behaviors as a dynamic and interactive system, rather than one component being dominant over the others (Miller et al., 2019).

Best Suited Activities:

Elementary: Ask questions that require students to practice what they have learned.

High school: Work in small groups to complete a science experiment

University: Ask students to create a diagram of apparently disparate ideas and show how they connect.

Corporate: Ask the learners to map out their processes in completing a task or procedure and then analyze it for inefficiencies.

Additional Resources:

<https://www.youtube.com/watch?v=DdvHUJ88tao>

Learning Activity: Conducting Pattern 2/4

- A. **Modeling-** Students will observe the teacher create a "map" of the 2.4 meter signature pattern, using a dry erase marker on the white board to *Symphony No. 3 finale in E-flat major* to show how to complete the objective.
- B. **Students will Set goals** (i.e. how many maps they will create in pairs). If 2 maps are created in one class, students may decide how to spend free time in c

1. Students will pair up. Each pair will have two pieces of paper attached to a clipboard and marker. One student will hold the paper clipboard, while the other will hold the marker with the cap off.
2. When the music starts, [Symphony No. 3 Finale in E-flat major](#), The student holding the marker will follow the teacher and conduct a 2/4 pattern with the marker on the paper. The paper should display the movement of the arm.
3. Students will trade places and repeat the processes.
4. Students will discuss the pattern on the paper and create a poster that "maps" out the pattern that best represents a 2/4 pattern.
5. This process can be repeated with $\frac{3}{4}$ patterns to the song: <https://www.youtube.com/watch?v=ZxxCU5i6cwY>.
6. Once both students have created a "map" of the conducting patterns for $\frac{3}{4}$ meter signature, the team will analyze their designs. Then they will consolidate the pattern and illustrate it on a shared poster. They should use this "map" of conducting movements to listen to determine which meter signature the song is in 4/4 or $\frac{3}{4}$ meter signature. They will determine the answer by conducting the music together and then decide which "map" works best with the song being played.
7. Students will list the names of songs that match the meter signature pattern on the poster that the pair created.
8. Students will take the individual conducting maps home and hand the shared poster up somewhere in the room for future reference.
9. Students will reflect on the experience and set a goal for future classwork and rewards for completing work efficiently. They will also discuss additional meter signature patterns, and decide which pattern they will explore next.

LEARNING THEORY: Cognitive Learning Process

Primary Theorists:

Frederic Bartlett (1886-1969)

Schematic Theory

Jerome Bruner (1915-2016)

Scaffolding

John Dewy (1933-1998)

Pragmatic Constructivism in Democratic Culture

Jean Piaget (1896-1980)

Cognitive Development Stages

Max Wertheimer(1880- 1943)

Gestalt Theory

Definition:

Cognitive Learning Theory employs metacognition techniques, so that the learner is aware of the learning strategies they are using and can direct his or her learning through strategic use of these strategies. One method involves gaining knowledge through observation of an expert, otherwise known as the Novice to Expert Model (Scuhnk, p. 257). Experts may verbalize why they are doing what they are doing so the Novice is exposed to an expert thought process.

Best Suited Activities:

Elementary: Students may be introduced to a math concept by watching the teacher work a problem on the board, while talking through the steps and “sample mistakes” aloud. Students might then work with partners, and talk their way through a set of problems with each other.

High School: A teacher might demonstrate how to conduct a lab experiment, talking about the mental steps out loud as they do. Students will then work with lab partners, talking each other through the steps.

University: A professor might demonstrate the use of APA 7 by writing a couple paragraphs with students as a whole group activity, modeling how to refer to PURDUE OWL with questions about how to format papers, and illustrating tech tools that can be used to streamline the process

Corporate: New employees might be assigned mentors that can model using procedures and company systems.

1. Students will get into small groups and create a list of tips for good conduct, based on current knowledge and experience.

2. Watch a video in which an expert discusses the keys to expert conducting: [Orchestras for All's Patron, Sian Edwards, shares her expert advice on how to lead an ensemble — Orchestras for All](#)

3. After watching the video, discuss, in small groups the tips Sian Edwards provides, and list the differences between the way she thinks about conducting and the lists originally created.

4. Choose one tip from Sian Edwards presentation to work on as a small group.

5. Choose a folk song from [Kodaly Center -- Collection \(hnu.edu\)](#), make copies for classmates and then practice integrating that tip while conducting that song in a small group. The small group will alternate with performers and conductors so that all will have a chance to participate as a performer for their group members, and each will have a chance to practice conducting with new techniques for a group of live performers.

6. Group members will provide feedback, through responding to conducting and a short discussion and reflection session after conducting.

7. Each group will create a presentation that reflects on the experience of trying to incorporate expert advice into their conducting technique. Based on their experiences, the group will make recommendations on how to close the gap between expert and novice techniques.

8. Students will collect recommendations that they think will be useful, and put them into action during independent practice sessions. During the independent practice sessions, students will conclude rehearsal with a journal reflection, describing how the rehearsal went and describing the thought processes they employed.

9. After independent practice, Students will identify the tip they are implementing and then conduct their chosen folk song while the whole class performs.

10. Students will then present a lesson, in which they will model the conducting tip they chose, and verbalize what they are doing and why while they demonstrate, as if they are the expert.

LEARNING THEORY: Cognitive Information Processing

Primary Theorists:

Richard Atkison (1929 - *)
Dual Memory Model

David Ausubel (1918 -2008)
Advanced Organizers

Robert M. Gagné (1916-2002)
Conditions of Learning

Richard Shiffrin (1942 - *)
Dual Memory Model

Max Wertheimer (1880- 1943)
Gestalt Theory

- Indicates the theorist may still be living

Definition:

A branch of cognitivism that focuses on information acquisition, processing, and retrieval; the age of computers inspired it. The central processing unit of a computer (CPU) is a metaphor for mental processes in meaningful learning.

Best Suited Activities:

Elementary: Organizing items into categories to improve recall, spaced repetition, scaffolding, meaningful connections

High School: Graphic organizers, mnemonic devices, spaced repetition, meaningful connections

University: Advanced Graphic organizers, Encoding retrieval similarities, meaningful connections

Corporate: Microlearning, Retrieval based learning, teaching for transfer,

(The nine levels are taken from Driscoll page 373)

Learning Activity: Integrating CIP with Gagne's 9 Levels

1. **Gaining Attention (SIGNALS: Schunk, p. 185):** Once students master basic conducting patterns, they will be introduced to a piece of music with changing meter signatures. Students will fill out a KWL chart (K & W) and discuss which meter signature pattern they should conduct.
2. **Expectancy:** It will then be revealed, if not discovered, that multiple meter signatures are used for one piece of music and that after learning occurs, they will be able to conduct this piece.
3. **Stimulating Prior Learning(INTEREST & MOVEMENT: Schunk p. 185):** Look at the music and go on a "scavenger hunt" for the various meter signatures. Circle the meter signatures and review the pattern for each one when they are discovered.
4. **Selective Perception (MOVEMENT: Schunk, p 185):** Listen to the music while following the written score and make the first attempt to conduct along with the music.
5. **Semantic Encoding (DEVELOP SCHEMAS, Schunk p.193; PRODUCTION SYSTEMS & CONNECTION MODULES, Schunk p. 201-205):** Demonstrate how to mark the score by conducting illustrations or shapes so that the student can see the upcoming meter signature changes at a glance. Speak through the text and conduct at a slower pace than the original piece of music using the marked scores.
6. **Responding (VARIETY: Schunk p.185):** Students take turns conducting each other in small groups. One person conducts, and the others perform. Then, the next person conducts, and the original conductor joins the performers. This rotates until all have been conducted. Students provide peer feedback and write down challenging areas of the piece.
7. **Reinforcement (QUESTIONS: Schunk p.185):** Isolate challenging areas of the music and rehearse slowly. Gradually bring the pace up to speed with the easier portions of the piece. Gradually increase the speed of the entire piece until it is at the correct tempo. Questions may be asked during this time. .
8. **Retrieval and Reinforcement (ELABORATE, Shunck p. 191)** Students perform as a conductor with new information while the other students perform at the correct tempo. Feedback is given after the performance.
9. **Retrieval and Generalization (ELABORATE, Schunk 191; PROCEDURAL KNOWLEDGE p. 201):** Students will intermittently be asked to "guest" conduct in choral classes and orchestral rehearsals
10. **GRAPHIC ORGANIZER, Schunk p. 205** Finish KWL chart, fill in "L"

LEARNING THEORY: Constructivism

Primary Theorists:

Jerome Bruner (1915-2016)
Scaffolding

John Dewey (1933-1998)
Social Constructivism & Democracy

Jean Piaget (1896-1980)
Cognitive Development Stages

Lev Vygotsky (1896 - 1934)
Social Constructivism, The Troika

A.N. Leontiev (1903-1979)
Activity Theory

A.R. Luria (1902-1977)
Father of Neuropsychology, The Troika

Definition:

A branch of cognitivism that emphasizes learning as a personal and meaningful experience and challenges the idea of external reality as an objective measure. (Ertmer & Newby)

Best Suited Activities:

Elementary: Students may be asked to create a diorama of a place on an imaginary planet and collaborate with classmates to develop strategies for protecting each others' worlds.

Highschool: Students may be asked to select a quote from a novel and reflect on what it means in the story, and how it relates to their personal experiences.

University: Students are not always taught how to use the university chosen LMS system. Students may need to learn to use the system through trial by error and talking to other students.

Corporate: An unexpected resignation could require work to be re-distributed to team members. There may not be formal training available & new skills will have to be picked up on the job.

Learning Activity:

Prerequisite: be able to conduct simple patterns in $\frac{3}{4}$ and $\frac{2}{4}$.

1. In small groups, students will listen to two pieces of music and identify which piece of music organizes the beat in patterns of 2 and which organizes in patterns of 3.
2. Each small group collectively invents a method for "conducting" both patterns, but they cannot make sound or use their hands.
3. After students have time to invent or construct their unique conducting technique, they will be given the opportunity to practice their new technique with music.
4. Next, students will secretly choose a piece of paper from an envelope, which will tell them if they will demonstrate $\frac{2}{4}$ or $\frac{3}{4}$ patterns.
5. All small groups will arrange themselves in a circle with the whole class...but stay close to their teammates.
6. Students will pretend they are statues. They must stay still until they hear the music play with their assigned meter signature. When their assigned piece of music is played, they will freeze and "conduct" with their invented method. When the music organized in their assigned meter stops, they freeze again.
7. Scaffolding opportunity: Repeat the steps above on successive days and add additional pieces of music to the game that have not been previously introduced to see if students can identify if the music falls within their assigned meter signature.
8. Perform a familiar musical selection as a class. Take turns trying to conduct the piece with invented methods.
9. Perform the same piece and take turns conducting with traditional methods.
10. Reflection: Compare and contrast, in the discussion, what it was like to respond to the conductor with the invented styles vs. traditional styles. This reflection occurs first in small group discussions and then again as a whole class discussion.

Possible historical connection:

Introduce Jean-Baptiste Lully. Jean-Baptiste Lully used a baton to conduct, but not the kind we use today. Lully's baton was a long wooden stick, and he pounded the ground with it so that everyone could hear exactly where the beat was when they practiced together. However, one day, he misjudged the placement of his baton and pounded his foot instead. This caused a foot injury that eventually became infected. Penicillin had not yet been discovered, and health care was not as good as today. So that infection spread, ultimately causing his early death. Discussion: What if we could go back in time and give Jean Baptiste Lully some modern medical care. How Might that impact the world of music that we know today?

LEARNING THEORY: Gagne's Theory of Instruction

Primary Theorists:

Robert Mills Gagné (1916 - 2002)

Definition:

The ***Nine Events of Learning*** is a sequence of events, based on external and internal processes, that take place during the learning process. These events were put forth by Robert Mills Gagné in his work, ***The Conditions of Learning Theory of Instruction***.

Best Suited Activities:

Elementary: All of these steps are commonly used across all subjects in the elementary classroom. It is exceptionally important that the instructor generate interest, and pay attention to the first step at this age group.

Highschool: All of these steps are frequently used at the high school level, across multiple academic disciplines. Step one might happen at the beginning of a unit and then less frequently as delving into the content might occur across a unit and be a bit more in depth than high school.

University: All of these steps are appropriate at the university level. Like highschool, step one may not take place in each class as delving deep into content may take place across several weeks.

Corporate: While all of these steps are applicable in a corporate setting, time comes at a premium and moving through these steps needs to happen at a faster pace. The importance of placing number one back in for each plan returns but must be perceived as not just interesting but relevant to work objectives.

Learning Activity:

1. Gain attention Stimuli activates receptors:

[Watch a video about how conducting can illustrate leadership principles in business and medical leadership](#)

2. Inform learners of objectives/ Create level of expectation for learning: At the end of this lesson, students will be able to describe how leadership in conducting relates to leadership in business in at least one way.

3. Stimulate recall of prior learning Retrieval and activation of short-term memory: As a warm up, students will listen to different selections of music and practice executing the basic 2/4 conducting pattern to [Humoresque by Dvorak](#). Pay attention to dynamics and articulation legato and staccato and show these characteristics in your conducting. Next, as a class, students will write what they know about characteristics of bosses or teachers they have had that they thought were good leaders. A large Venn diagram will be on the board and the first circle will be filled in as a class.

4. Present the content: In small groups, Read the articles ["Leadership styles and the choral conductor"](#) And the paragraph *Lessons Learned from the Experience of Successful Symphony Conductors* (581-582) from the article [Using the Arts to Acquire and Enhance Management Skills](#).

5. Provide "learning guidance" Semantic encoding for storage long-term memory: Students will collect information from the article about the qualities of good leadership in conducting as they read the articles in their small groups, and on a team venn diagram, record ideas.

6. Elicit performance (practice) Responds to questions to enhance encoding and verification: In a class discussion, discuss the answers that each group came up with and discuss which should be included in the venn diagram on the board.

7. Provide feedback Reinforcement and assessment of correct performance: As the discussion/debate occurs in the previous step, clarify points of confusion and ask questions to challenge incorrect assumptions. Guide the students into a refined, final Venn diagram that compares and contrasts leadership in conducting and leadership traits in other contexts. Students will take a snapshot or picture of the finalized diagram.

8. Assess performance Retrieval and reinforcement of content as final evaluation: Students will choose one trait, characteristic, or skill that is found in both conducting and general leadership, and create a written action plan to incorporate into an area of life that they have a leadership role.

9. Enhance retention and transfer to the job: Create a padlet and ask participants to post one example of how they tried to implement their action plan (written in step 8) one week later. The post should include a summary of their objective in the action plan, describe how the attempt to put the idea into action went, and what they might repeat or try differently. Students would be encouraged to support each other's efforts and help each other brainstorm on how to more effectively put leadership skills that cut across disciplines, including conducting, into action.

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https://en.wikipedia.org/wiki/David_Ausubel
[Richard Shiffrin - Wikipedia](#)
[Edward C. Tolman - Wikipedia](#)

(wikipedia was used to obtain dates for main theorists when not located in other sources.)

Lesson Plan Resources:

Allen, S. G., & Apfelstadt, H. (1990). Leadership Styles and the Choral Conductor. *The Choral Journal*, 30(8), 25–31. <http://www.jstor.org/stable/23547634>

Dvorak's [Humoresque](#) played by Itzhak Perlman and YoYo Ma, Posted 2012 on Youtube.

Ludwig van Beethoven's *Symphony No. 3 Finale in E-flat major* was recorded by the Czech National Symphony Orchestra ([source](#), [Creative Commons Attribution 3.0 license](#)).
DaCapoDacoda.com

Mockler, R. J. (2002). Using the Arts to Acquire and Enhance Management Skills. *Journal of Management Education*, 26(5), 574–585.
<https://doi.org/10.1177/105256202236727>

PBS NewsHour (2018) [What Orchestras Can Teach Executives About Conducting Business](#)
YouTube <https://youtu.be/lz-9RFCxs-0>.

Teton Music (2013) [How to Conduct Music](#), Youtube <https://youtu.be/DdvHUU88tao>

Lesson Plan Materials

Copies of articles or electronic devices for students to access articles
Device to access and play music
Devices for displaying and showing videos
Markers
Paper
Space for conducting and small group work