

Lesson Plan for Class 12

Topic: Attention

(Estimated Time: 90 minutes, adapted from open textbook materials:

Pre-class reading: <https://nobaproject.com/textbooks/introduction-to-psychology-the-full-noba-collection/modules/attention>

Learning Objectives:

Students will be able to:

1. Describe why selective attention is important and how it can apply to everyday situations such as distracted driving
2. Compare and contrast different models of attention of when and how selection can occur.
3. Communicate how divided attention or multitasking is studied

1. PRE-CLASS QUIZ (~15 minutes)

- a. Before class, **students participate in a Kahoot quiz (questions at bottom of docx)** focused on textbook material. Following each question, correct answers are revealed (and discussed), and a class-response chart is displayed to assess overall comprehension.

2. INTRODUCTION TO ATTENTION (10 minutes)

- a. **Ask the class to pair-up and discuss, then come up with one definition for attention**, write down all ideas in the class and **synthesize them into a singular class definition on the blackboard**.
- b. Discuss the cocktail party study effects:
 - i. **Scenario Prompt for the class (write on board)**: Imagine you are at a party. How easy is it to hear other people?
 - ii. **Provide a demonstration**. First ask all students to watch this video of 2 people talking at the same time: <https://www.youtube.com/watch?v=mN--nV61gDo> and ask how many people understood the dialogue via show of hands (count this total and write it on the board)
 - iii. **Next**, ask the students to focus on the person on the right and try to listen to them. Ask at the end of class how many people understood the person. Count the total # of students who could understand.
 - iv. Compare the two numbers and point out that it seemed to be higher when we were paying attention to someone specifically (generally higher in the 2nd attempt, if not, just say it typically is).

3. Models of Attention Group Work (~20 minutes)

- a. Divide the class into 3 groups to discuss each of the following models of attention:
 - a. *Broadbent's filter model* (selecting information based on physical features, selection/filter occurs early)
 - b. *Treisman's Attenuation Model* (selection starts at physical/perceptual level, but unattended information is only weakened)
 - c. *Late Selection Model* (all information processed but only information relevant to task enters conscious awareness)
- b. **Each group should discuss** how each model explains the cocktail part phenomenon and their limitations, whether they agree with said model and why (ask students to draw from their own experiences as evidence).
- c. **Groups will then present the results of their discussion. Write down the main points from each group**
- d. **Compare and contrast** the points of each model on the board and ask if there might be any alternative models or combination of the aforementioned models (e.g., multimode model where selection can occur at different stages depending on the task- from their textbook reading)

4. Multitasking Mini Lesson (~25minutes)

- a. Multitasking research demonstration activity in groups:
 - i. **Pass out the questionnaire/multitasking handout (bottom of this docx). Make sure that students keep the questionnaire facing upwards to respond to individually. Instructions for students:**

1. **Tell students we are going to assess how the class (as a whole) feels about juggling multiple responsibilities** on the handout. Explain that to achieve this, **we will collect some anonymous data from our class to see people's views about multi-tasking**. We are going to use numbers to code their responses so we can analyze the data using quantitative methods. These are the types of methods most cognitive psychologists use in their research.
 2. **Students should write their responses on the handout, then submit their responses anonymously to a google forms** (bit.ly/3dASa) which should convert the data into a bar chart.
 - ii. After completed, show the students how the raw values from Google Forms can be converted into an average (sum of all values / number of items) in preparation for the students' upcoming activity.
- b. **Discuss the results** (present discussion questions on PowerPoint. Exact questions located at bottom of document). Have the students discuss each question as a group, summarize their thoughts, then write down the consensus from each group on the board:
- i. Does our class as a whole think we are better than average at multi-tasking – or does it mean something else?
 - ii. How many tasks does our class typically juggle at one time?
 - iii. How does the number of tasks we think we are capable of handling compare to how many tasks we actually find ourselves engaging in?
 - iv. Despite our own self assessments, do we judge ourselves as actually being more productive when multitasking or handling tasks one at a time?
 - v. Do you think this question can be tested in a more quantitative way? What groups would we be comparing? What could we measure?
- c. **Students will then participate in a research demonstration. Ask students to turn the page over and prepare to take part in a research demonstration.**
- i. **INSTRUCTOR: First explain, then demonstrate with another instructor, TA, or student to ensure all instructions are followed exactly**
 - ii. Students will pair up then take turns playing the role of the participant and the experimenter.
 - iii. The subject will read aloud 4 lists (list of letters only, numbers only, letters and numbers intermixed, and numbers again) while counting off each item on their fingers. Another student will record the time it takes to read each list. Students will then swap to play the other role.
 - iv. After collecting all of the data, students will average the time to complete each task and submit their times to this Google form: bit.ly/vDaW3
 - v. Data from google form should automatically average data from all student pairs and produce bar graphs of completion times for each task.
 1. If your data does not match the expected outcome, use figure 1 (located at the bottom of the document) instead to facilitate discussion about the phenomenon.
- d. **Discuss research demonstration results** (present discussion questions on PowerPoint. Exact questions located at bottom of document. Students should first discuss in pairs, then prepare a response together)
- i. What did you notice in the class data? Which was the easiest task (task involving letters or numbers only), which was the hardest task (list with letters and numbers combined)?
 - ii. Did **you** find the same tasks easy and difficult as the class?
 - iii. Ask students whether they think they were reciting mentally from one continuous list or that they were switching between lists? Did it cost them time to switch?
 - iv. Ask students if they have experienced task switch costs in real life (e.g. doing homework and answering texts at the same time).
- 5. Multitasking Public Policy Discussion (10 minutes)**
- a. Give students ~5 minutes to consider the following prompt before discussing as a class:
 - i. Current public policy bans the use of hand-held devices when driving. Should our previous discussions and the evidence on divided attention impact public policy on distracted driving? Why or why not?
- 6. Write a Reflection Paper (10 minutes)**

- a. Remind students that it should contain the following points. Paper should be submitted / handed-in at the end of the class.
 - i. Summary of key concepts learned, insights gained, and any remaining questions or areas of interest.

Questionnaire (front page)

1. How skilled are you at juggling multiple tasks at once?

1	2	3	4	5
Not Good		About Average		Very Good

2. On an average computer session, how many tasks do you usually juggle at the same time (e.g. responding to emails, reading, writing homework, etc.)?

3. How many tasks are you capable of handling at the same time during an average computer session (i.e. your potential upper limit)?

4. Which of the following describes you best:

- a. I am more productive when doing multiple tasks simultaneously (Answer = 1)
- b. I am more productive when doing tasks one at a time (Answer = 0)

Multitasking Activity (back page)

Partner up with another student for today's activity. Each student will take turns playing the two following roles:

- One student will play the role of the "participant", where they will participate in each of the 4 tasks below.
- One student will play the role of the "experimenter" by keeping the time it takes the other student to complete each task and recording the time using their phone or the seconds hand on the clock in the classroom.

Please complete all 4 tasks sequentially before switching roles.

Read each task completely before beginning:

Use your fingers to verbally count aloud in the 4 tasks below. Focus on saying each item clearly rather than rushing through each list.

Task 1 = Count from 1 to 10 in ones – 1,2,3, etc.

Task 2 = Say the alphabet aloud from A-J (10 letters) – A,B,C,D, etc.

Task 3 = Alternate between counting 1-10 and the alphabet (e.g. 1-A, 2-B, etc.) Count on your fingers as you say each number-letter pair (10 from each list, 20 items in total).

Task 4 = Count by tens, stopping at 200 (20 items in total; e.g. 10,20,30,40, etc.)

Timekeeping				
	Student 1 Time	Student 2 Time	Summed Time	Averaged Time
Task 1				
Task 2				
Task 3				
Task 4				

After both students complete all tasks, **sum the total time for both students** in each task. Then, **divide these sums by 2 to calculate the average time taken** to complete each task.

PowerPoint Discussion Questions

Questionnaire Discussion Questions

- Based on the averages for Q1, does our class as a whole think we are better than average at multi-tasking – or does it mean something else?
- Based on the averages for Q2, how many tasks does our class juggle at the time?
- Based on the averages for Q3, how does the number of tasks we think we are capable of handling compare to how many tasks we actually find ourselves engaging in?
- Based on the averages for Q4, despite our own self assessments, do we judge ourselves as actually being more productive when multitasking or handling tasks one at a time?
- Do you think this the effects of multi-tasking can be tested in a more quantitative way? What groups would we be comparing? What could we measure?

Research Demonstration Discussion Questions

1. What did you notice in the class data? Which was the easiest task, which was the hardest task?
2. Did you find the same tasks easy and difficult?
3. In the multi-tasking task (#3), did it feel like you were reciting from one continuous list, or that you were swapping between numbers and letters in your head?
4. (Display after Q1-3) Do you experience task switch costs in your own life?

Kahoot Q & A (questions purposefully not defining attention so that we can create a definition later in the class lesson. Order of options should also be randomized on Kahoot):

One definition of Attention in search tasks refers to the level of _____ or _____ one can maintain.

Option 1: Sustained attention and vigilance (correct answer)

Option 2: Patience or endurance

Option 3: Curiosity or interest

Option 4: Enthusiasm or motivation

Divided attention refers to:

Option 1: how well individuals can focus on a single source of information for an extended period.

Option 2: how well individuals can recall information after a delay.

Option 3: how well individuals can attend to many sources of information at once (**correct answer**)

Option 4: how well individuals can perform under high-stress conditions.

Spatial attention refers to:

Option 1: how we maintain attention on a single task over time.

Option 2: how we focus on one part of our environment and how we move attention to other locations in the environment (correct answer)

Option 3: how we manage time while performing multiple tasks.

Option 4: how we process emotional information in social interactions.

Selective attention refers to:

Option 1: some information is attended to while other information is intentionally blocked out (correct answer)

Option 2: to the enhancement of memory retention through repeated exposure to the same information

Option 3: refers to the subconscious preference for familiar stimuli over unfamiliar ones

Option 4: refers to the reduction of cognitive load by simplifying complex information into manageable chunks.

Inattentional blindness refers to:

Option 1: The reduced ability to detect visual stimuli in low-light conditions.

Option 2: The inability to perceive objects that are outside the range of normal human vision.

Option 3: The failure to notice a fully visible object when attention is devoted to something else (correct answer)

Option 4: refers to the tendency to overlook visual information that conflicts with preconceived beliefs or expectations.

Figure 1.

