

Lesson Plan

NEUROHEADWAY

Neuroscience Into Education

Slide	Subject	Description	Timing
1	Registration and brief introduction to lesson.	Today we are going to start by discussing the difference between our thoughts and our speech. Then we will explore philosophy of language to discover how language works. Further, we will apply logic to language to distinguish the different types of logic and their tasks. Finally, we will discuss the applications of language analysis and logic to ethics. We will see that this affects ethics itself.	2 min
2	Propositions, predicates, sentences, and beliefs.	When a sentence is meaningful, there is a difference between the meaning that one grasps and the literal meaning. (Give some examples and discuss them with the students. You could use idioms such as "It is raining cats and dogs"). The bearer of the meaning of a sentence is called a <i>proposition</i> . Propositions might also present the meaning of beliefs and thoughts – the sentences we form „in our minds“(See Korhonen 2009: 162 and Dixon & Gilmore 2016: 275 - 280). When we are interested in the meaning of words within a sentence, we can see how some words serve to denote characteristics of objects. Such words are called <i>predicates</i> . So, when we analyse the meaning of sentences, we also consider the meanings of these predicates in our language. (See Salmon 2012: 471 - 479). But what about beliefs and thoughts? We often speak about someone's beliefs by using sentences. However, strictly speaking, other people's beliefs are inaccessible to us. (Ask the students if we have access to beliefs and discuss with them "the cognitive access problem". Show them slides 3 and 4 that demonstrate the problem.)	8 min
3	Language games (Activity)	Some of the words that we use in our language have strict meanings. For instance, when we say "a rhino" we usually refer to an individual rhinoceros. When words refer to objects, these objects are called " <i>referents</i> ". However, this is not always the case (See Wittgenstein 1986 (1953) §43, §66 – 67 and §31). Many of our words have a number of different meanings. In philosophy, we call these different meanings " <i>different uses of a word</i> ". A word is used differently due to the different rules of different language games. For instance, when we are talking about trees, "bark" is used according to a different rule in comparison to when we are talking about dogs. (Tell the students to look at their "Language game sheets" for some examples. Bring out "the Language bag" and choose some words to work with. Work together and give additional examples.)	7 min
4	Language Games and rules	You probably wonder whether there is a difference between our language and any other game. We formulate the rules of language by practising language. It is the same with any other game – we play according to the rules but we, together with the	3 min

		other players, can change the rules anytime if they are no longer efficient. (Compare different games to language games)	
5	Propositional Logic	We can use different types of logic to analyse propositions. Propositions are also considered to be the bearers of truth value (that is, they can be true or false). We can use propositional logic when we try to determine if other people's arguments are valid or not. Sometimes an argument might sound convincingly it can still be logically flawed. (See Gensler 2002: 1-2, 35) (Give an example for a tautology. Ask the students do they find this example to be a valid argument. Show them slide 7 where they can see the notation of a tautology and contradiction.)	6 min
6	Predicate Logic (Activity)	Predicate logic is more precise. It is also called "first order logic". We use it to determine if a sentence is true by analysing every part of this sentence. Unlike propositional logic, predicate logic can also be used to form propositions of the following kind: 1) Every person has a heart. (generalisation) 2) There is at least one atom. (existence) To formalise these propositions predicate logic uses <i>quantifiers</i>. In case 1) we use the universal quantifier. In case 2) – the existential quantifier. (See Gensler 2002: 101 - 102) (Show slide 8 to the pupils. Let them look at their "Quantifier table" and work over the examples together.)	7 min
7	Deontic Logic	We can also apply logic to resolve problems in everyday life. Such an example are moral conflicts. There is a special branch of logic that deals with categories of actions labeled as: permissible/impermissible; obligatory; optional; liberty; power and many others (See Horty 2001: 3-4). Social norms and human relationships are described by such categories. As a result, a type "rules" can be formed that applies to a certain society. So, the analysis of these categories becomes very important in <i>deontic logic</i> . (Give examples of ambiguous social norms that need logical clarification. You can also use examples from philosophy of law. You can find an example related to the concept of justice on slide 10.)	7 min

Power point Example

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Today we will explore some key topics

We will discuss the following matters together:

- Difference between thoughts and sentences
- How to analyse arguments through logic
- Autonomy as a key problem in ethics



Propositions

The term “proposition” refers to the *meaning* of sentences. It can also refer to *the meaning* of beliefs.

- *Example: If someone understands the proposition (p) = “It is raining cats and dogs”, she does not merely understand the meaning of “a cat” or “a dog” but that she understands the meaning of the sentence altogether. That is, she understands the proposition.*
- The cognitive access problem: how can we be sure that we know another person’s beliefs and thoughts?

Now we should also find out how does words function

- A word may be used as “a label” of something. Then it has strict meaning and refers to concrete object. This object is called “*a referent*”.

AN APPLE



- But some words have a lot of different meanings according to the context in which we use them. Different meanings are called “*uses*”.

