



Intro to Learning Sciences

Lecture 26, Nov 13, 2025
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Task 1 (Pairs, 6 minutes): Read the following text about Utilitarianism and write a 50-word summary.

In ethical philosophy, utilitarianism is a family of normative ethical theories that prescribe actions that maximize happiness and well-being for the affected individuals. In other words, utilitarian ideas encourage actions that lead to the greatest good for the greatest number. Utilitarianism is a version of consequentialism, which states that the consequences of any action are the only standard of right and wrong. Unlike other forms of consequentialism, such as egoism and altruism, utilitarianism considers either the interests of all humanity or all sentient beings equally. Proponents of utilitarianism have disagreed on a number of issues, such as whether actions should be chosen based on their likely results (act utilitarianism), or whether agents should conform to rules that maximize utility (rule utilitarianism).

(121 words, Source: Wikipedia)

Tell me how you collaborated on this task.



Task 2 (Pairs, 6 minutes): Read the following text about transcendental realism and write a 50-word summary. However you must follow these rules while working together:

- 1) Read individually for 1 minute
 - 2) Partner 1 explains their understanding of the text. Partner 2 asks one question that challenges this explanation. Partner 1 elaborates.
 - 3) Switch roles and repeat the above task.
 - 4) Partner 1 and 2 each think individually and contribute two points to be included in the summary.
 - 5) Write the summary.
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In the "Transcendental Aesthetic" section of the Critique of Pure Reason, Kant outlines how space and time are pure forms of human intuition contributed by our own faculty of sensibility. Space and time do not have an existence "outside" of us, but are the "subjective" forms of our sensibility and hence the necessary a priori conditions under which the objects we encounter in our experience can appear to us at all. Kant describes time and space not only as "empirically real" but transcendently ideal. Kant argues that the conscious subject recognizes the objects of experience not as they are in themselves, but only the way they appear to us under the conditions of our sensibility.

(115 words, Source: Wikipedia)

Tell me how you collaborated on this task.





What was different about the two situations?

What worked better in the first task?

1. Individual learning happened
2. Task was done quickly
3. No incentive for letting your partner speak - grounding
4. There was a confusion about which points to include in the summary
5. No fixed path - decided own path to collaboration, but that was more cognitive overloading
6. First situation prepares you for the second one

What worked better in the second task?

1. Convincing each other
2. Both got a chance to speak
3. Reflecting on each others thoughts
4. We tried explaining from prior experiences
5. Arguing better against each other
6. Time was not sufficient
7. Fostered more critical thinking than first one
8. Done quicker in second one - realized that collaboration happened in the first one after experiencing the second one



Collaborative Learning

- ***Two or more*** people ***learn*** or attempt to learn something ***together***
 - *Scale*: Pair, small group, classroom, community, society
 - *Meaning of Learning*: study learning material, perform an activity, solve a problem, practice
 - *Nature of Collaboration*: f2f or online, synchronous or asynchronous, frequent or intermittent, joint effort or division of labour



Collaborative Learning: Variety of Scales

- Few (2-5) number of participants collaborating for a couple of hours of time vs large number (> 30) of participants collaboration across months: Different theories - cognitive psychology vs social psychology, sociological and anthropological theories
- Distributed cognition: group is viewed a cognitive system
- Emergence of “cognitive community”: Culture
 - Common ground built by peers through interaction
 - Grounding mechanisms for co-constructing this common “language”
 - Functional - Enough mutual understanding to do the task at hand
- Individual as a group or distributed system -> dialogue with oneself - Vygotsky
 - Self- explanation vs explaining to another person
- Dialogue with oneself vs other -> differences?
 - When does individual reasoning become a monologue



Collaborative Learning: Variety of meanings for learning

- Pedagogical method or psychological process? Neither
- People learn because they perform some activities which trigger specific learning mechanisms
 - Eg. Collaborative learning results from the effort necessary for co-construction of shared understanding
 - Activities: explanation, disagreement, mutual regulation
 - Mechanisms: knowledge elicitation, internalization, reduced cognitive load
 - No guarantee that they occur in any collaborative situation, may occur more frequently in collaborative situations
- Collaborative learning as a contract -> specific conditions under which some interactions may occur
- Collaborative learning as a “situation” -> particular interactions are expected to occur-> trigger learning mechanisms
- Productive social interaction can be engineered through careful design of the learning environment



Collaborative Learning: Meanings of collaboration

- Situation:
 - Symmetry: Objective or subjective
 - of action
 - of knowledge, skills or developmental level: slight knowledge asymmetry is desirable but largely symmetrical
 - of status
 - Common goals
 - Division of labour
- Interaction:
 - Interactivity: Interactions must influence peers cognitive processes
 - Dialogues that are constructive
 - Turn-taking
 - Sharing task - related information
 - Synchronicity: of reasoning, need for mutual modeling
 - Negotiability: No imposition of viewpoint, argument, justification, attempt to convince
 - Space for negotiation: there should be something to negotiate about, either about the task or about how to interact
 - Space for misunderstanding in grounding: misunderstanding -> explanation and other good learning processes
-> optimal collaborative effort