Twilight of the Lecture:
Peer Instruction for Active Learning

Faculty Development Workshop
Touro College
New York, NY, 23 April 2021

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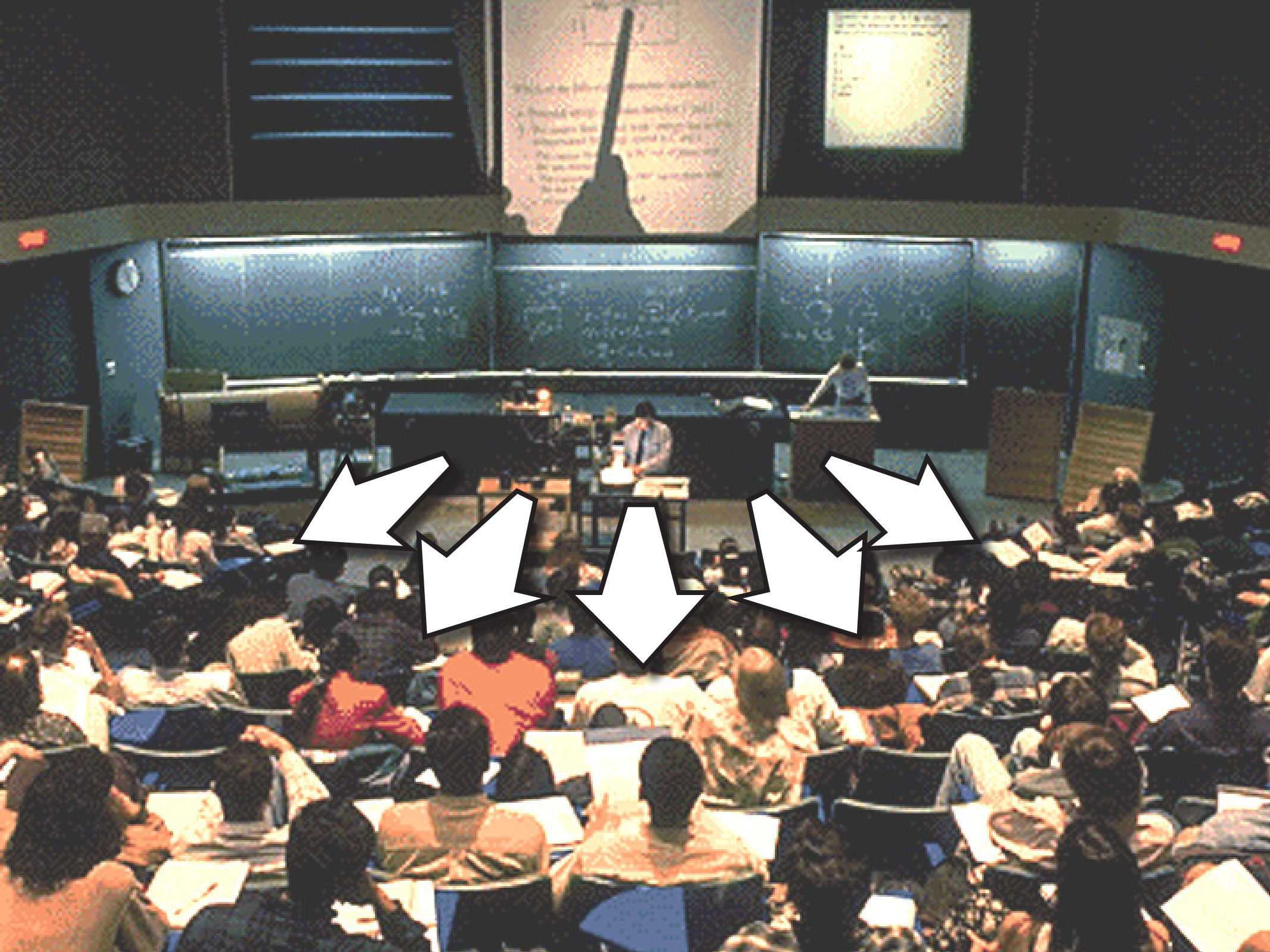



an illusion. . .

1. transfer of information

1. transfer of information

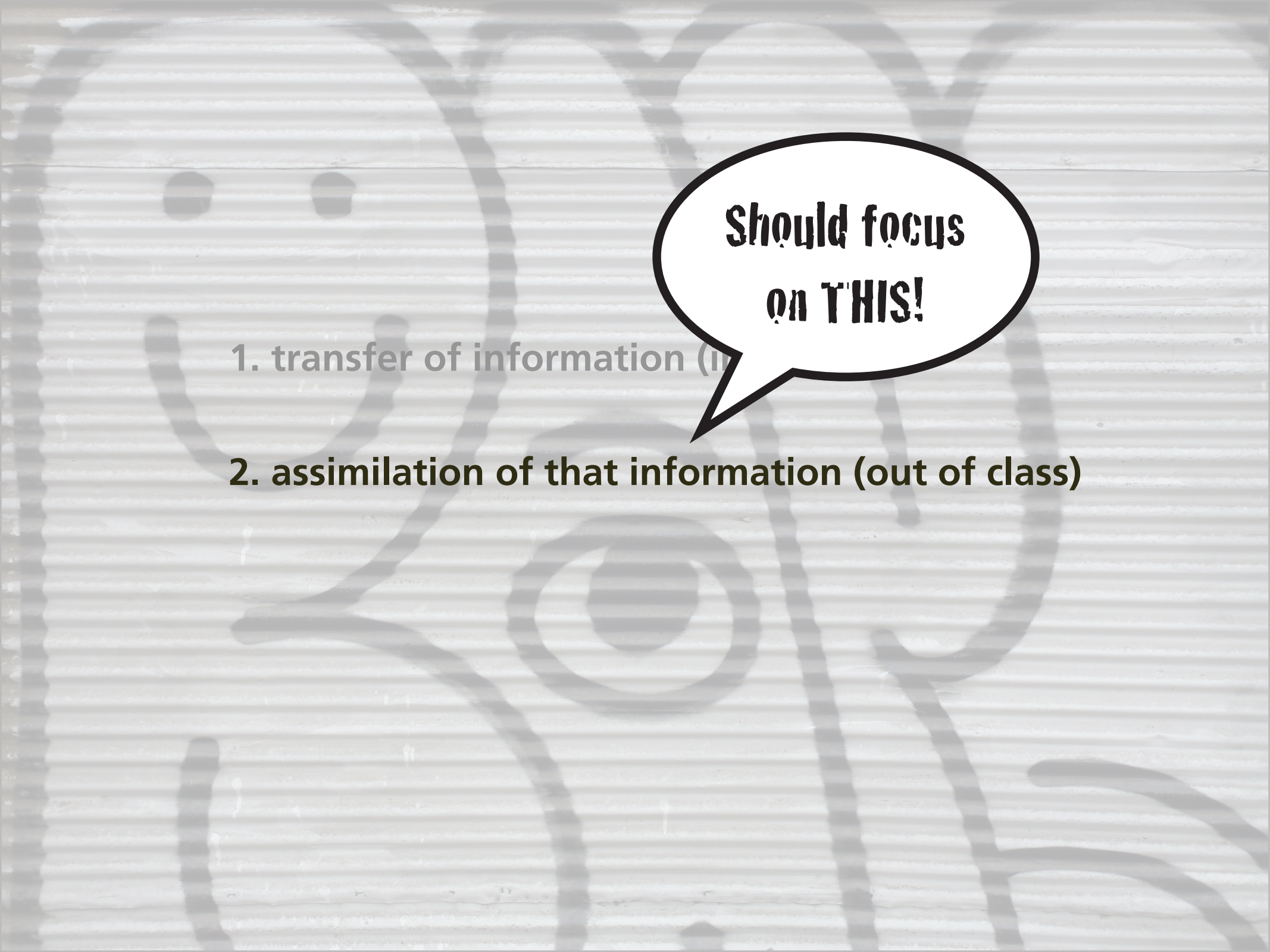
2. assimilation of that information

1. transfer of information (in class)

2. assimilation of that information

1. transfer of information (in class)

2. assimilation of that information (out of class)

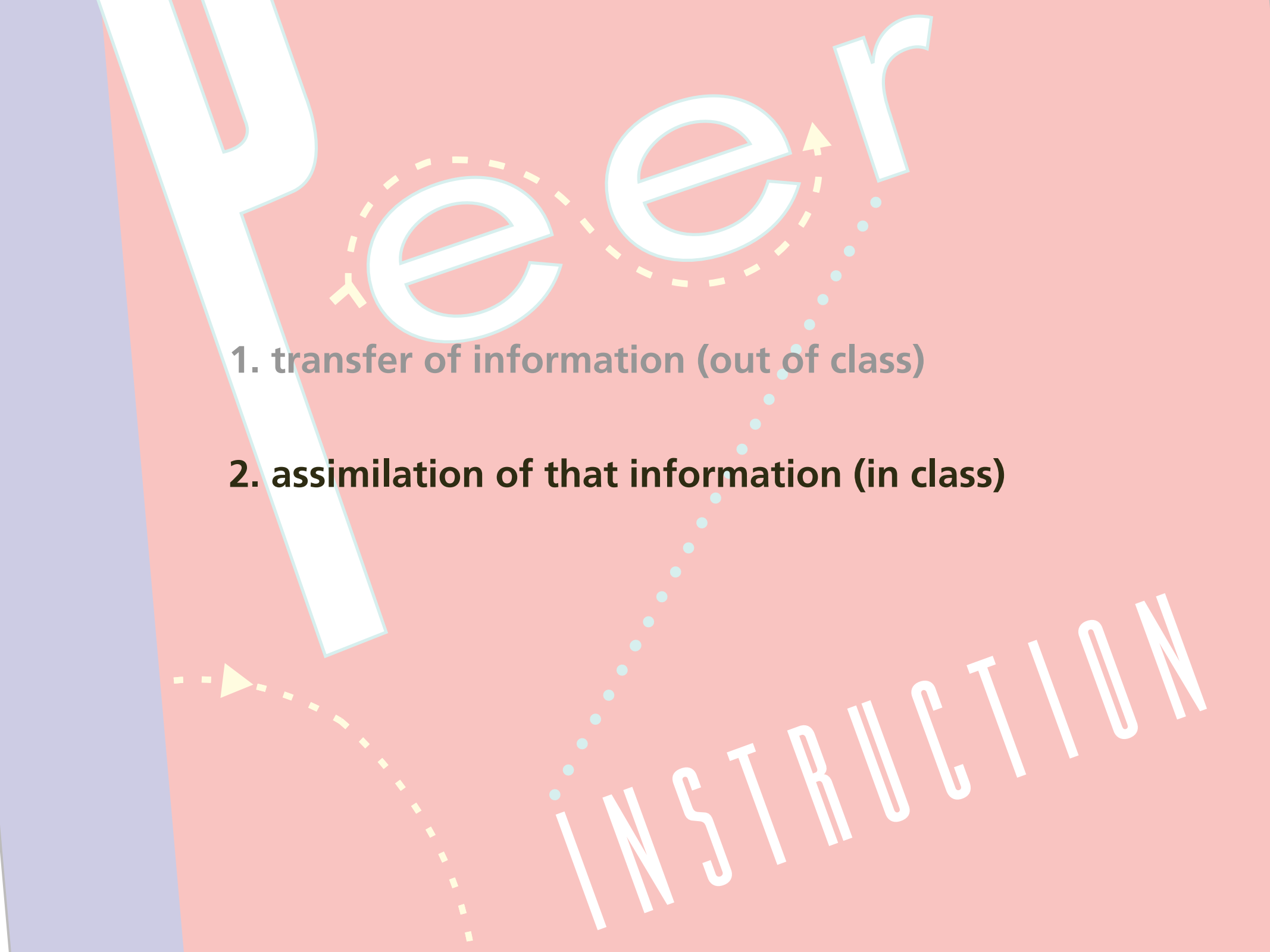

Should focus
on THIS!
1. transfer of information (i
2. assimilation of that information (out of class)

1. transfer of information (in class)

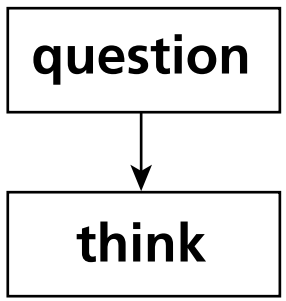
2. assimilation of that information (out of class)

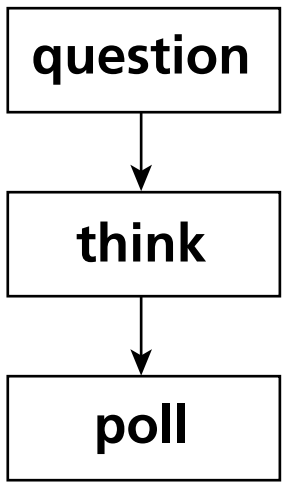
1. transfer of information (out of class)

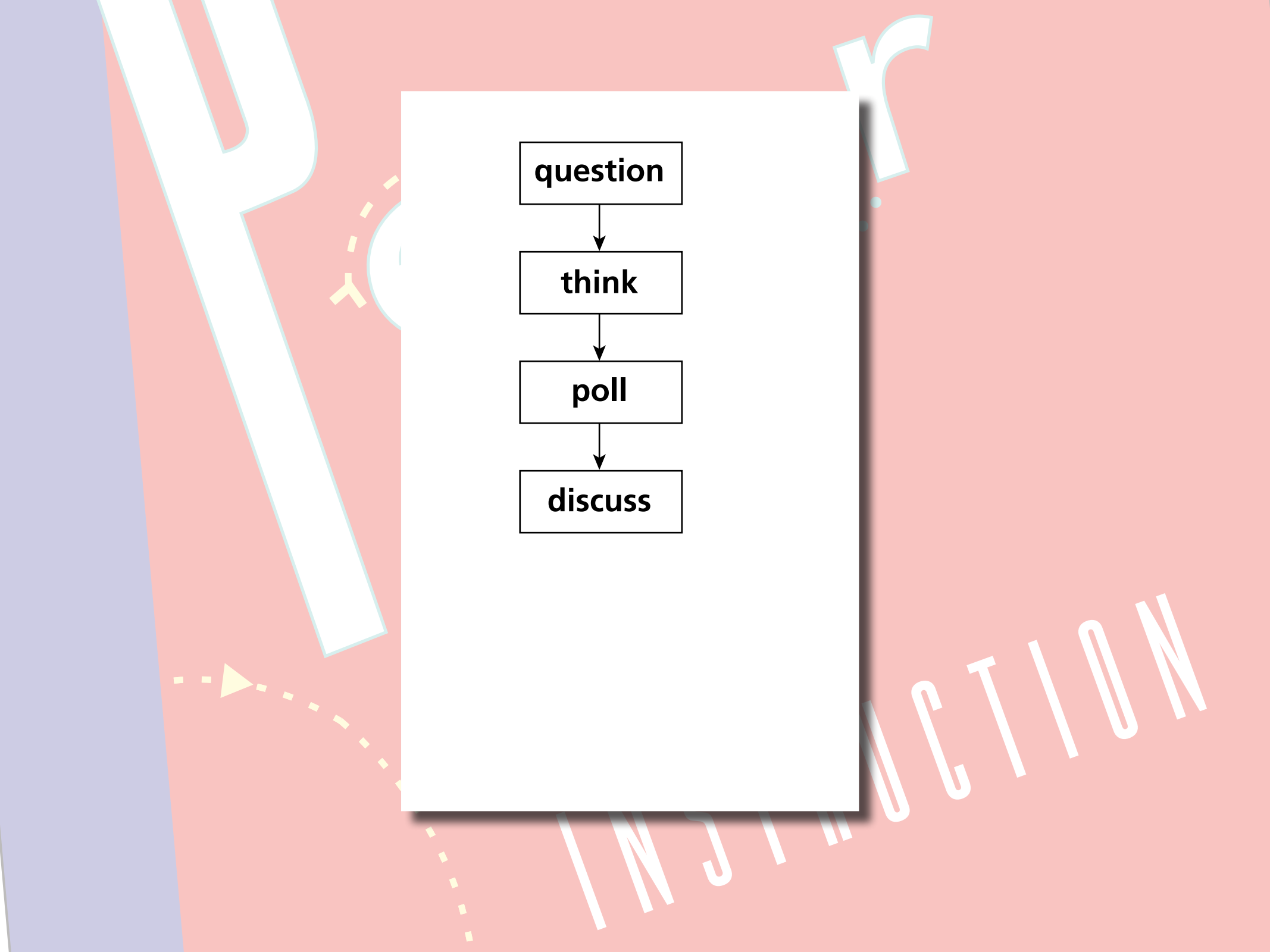
2. assimilation of that information (in class)

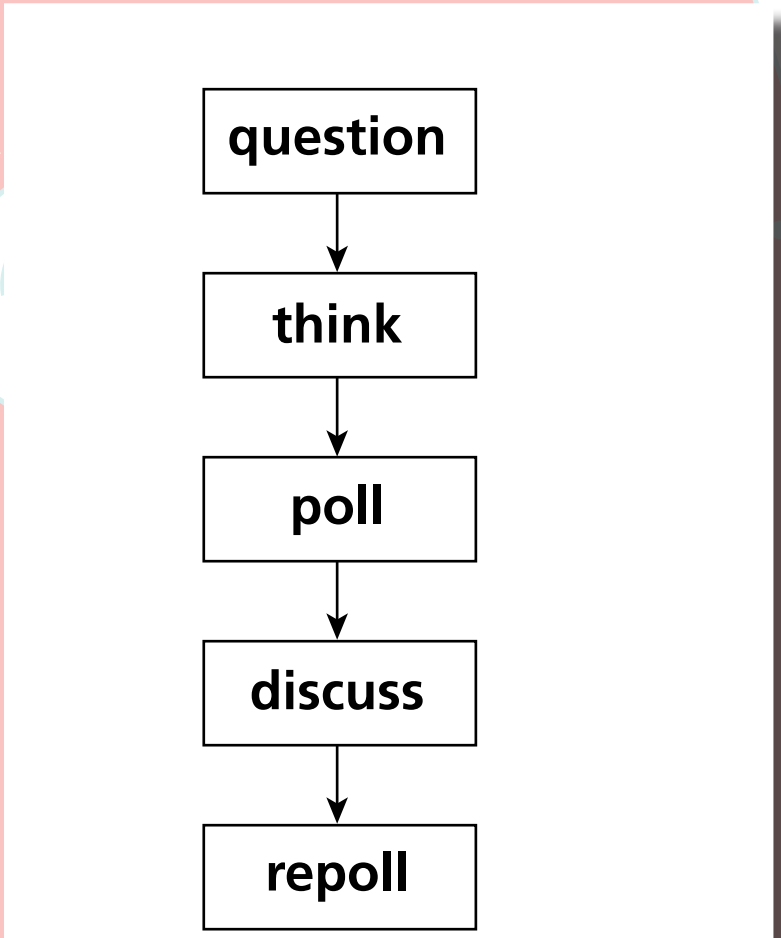

peer
1. transfer of information (out of class)
2. assimilation of that information (in class)
INSTRUCTION

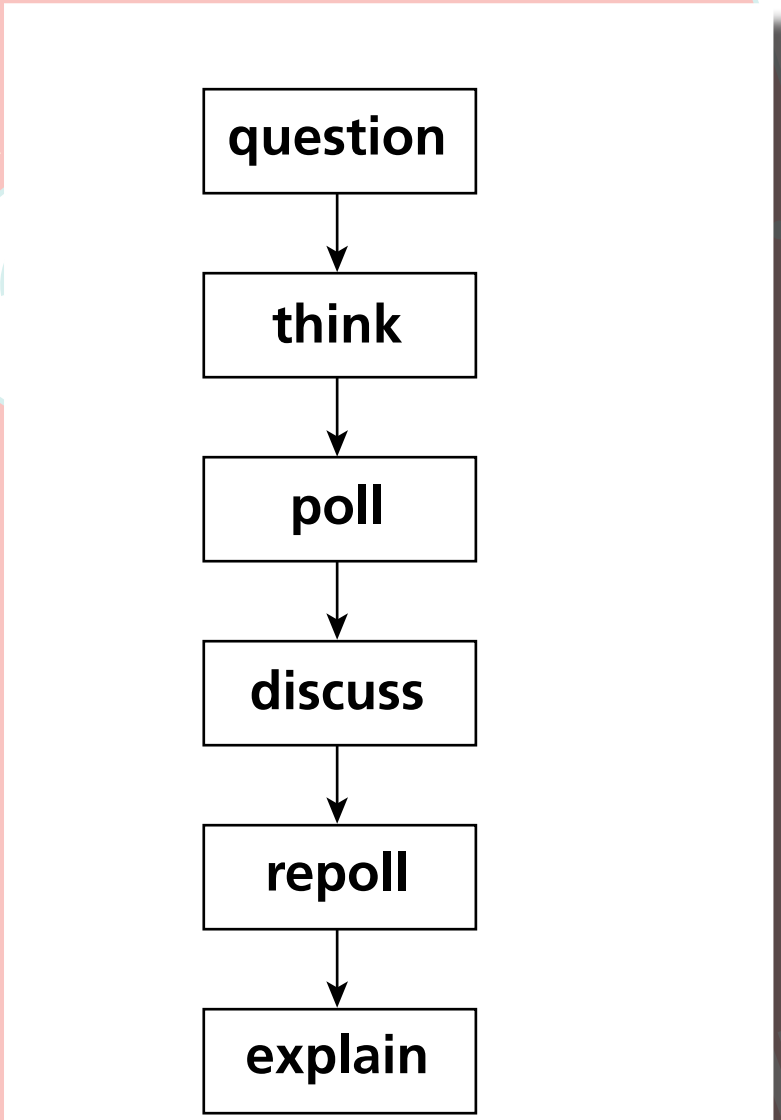
question

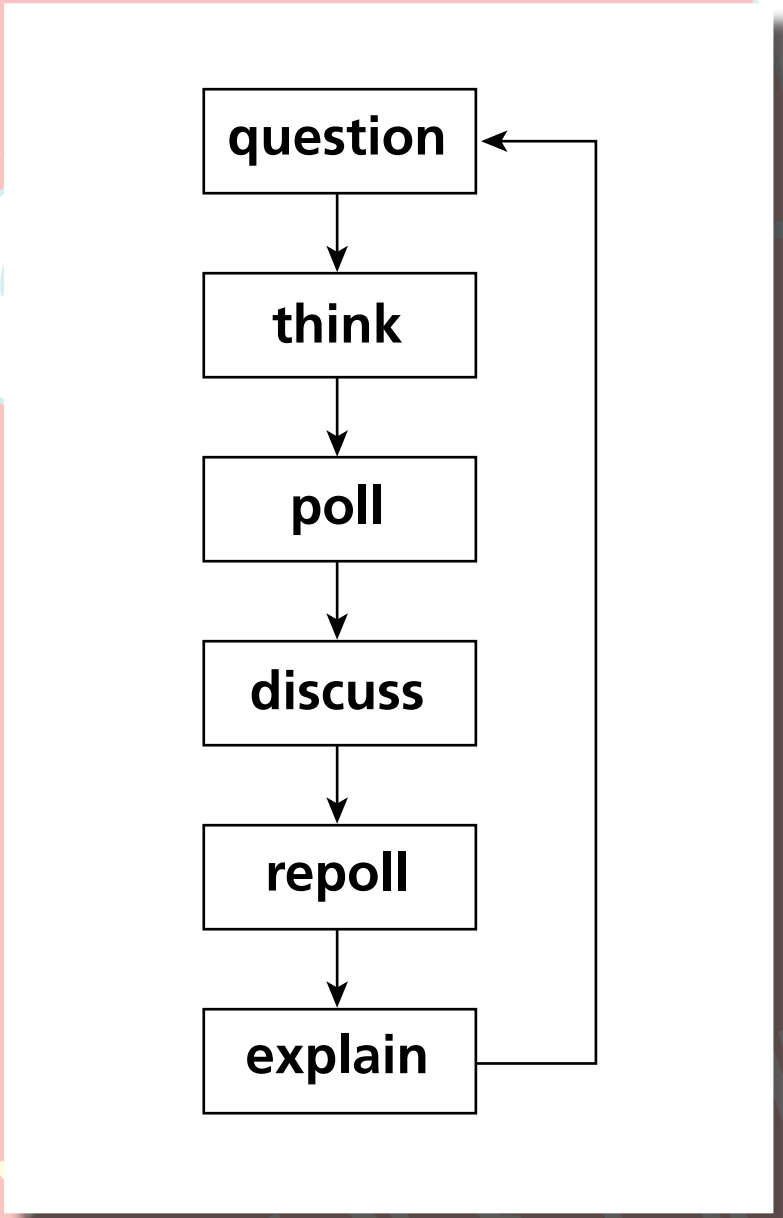

question
think

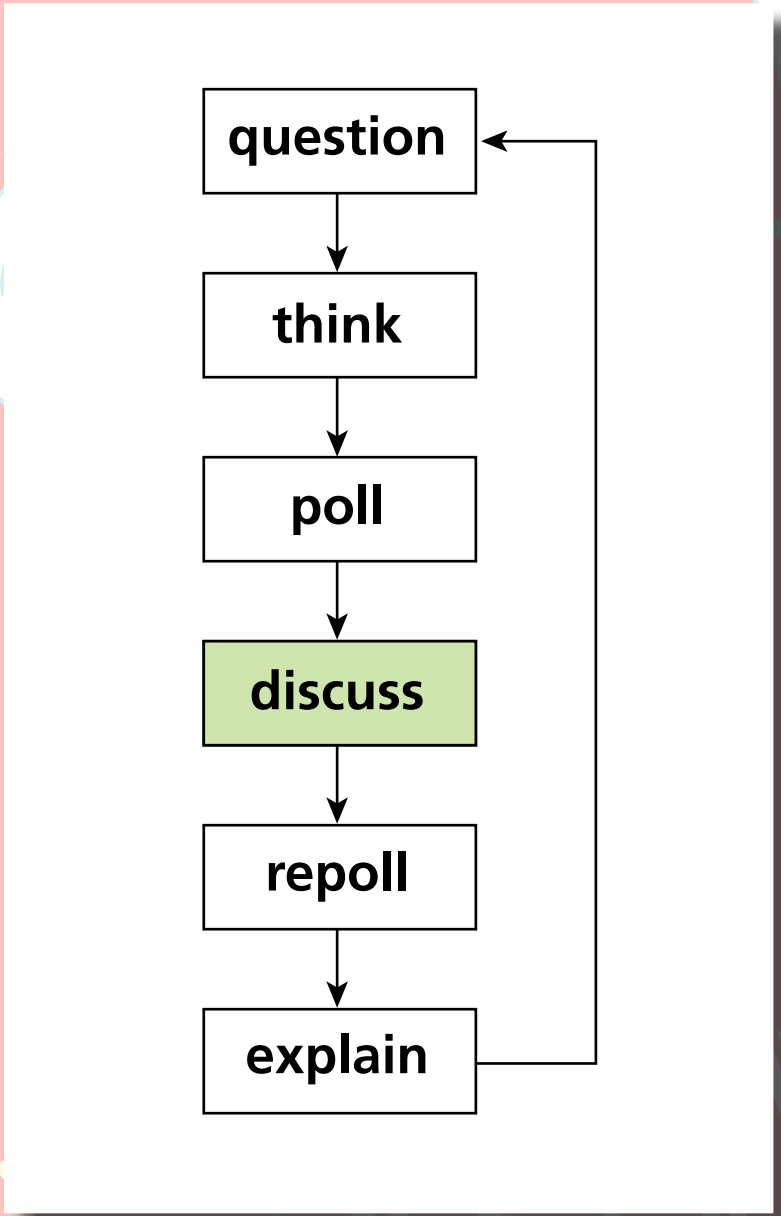

question
think
poll


question
think
poll
discuss


question
think
poll
discuss
repoll


question
think
poll
discuss
repoll
explain


question
think
poll
discuss
repoll
explain


question
think
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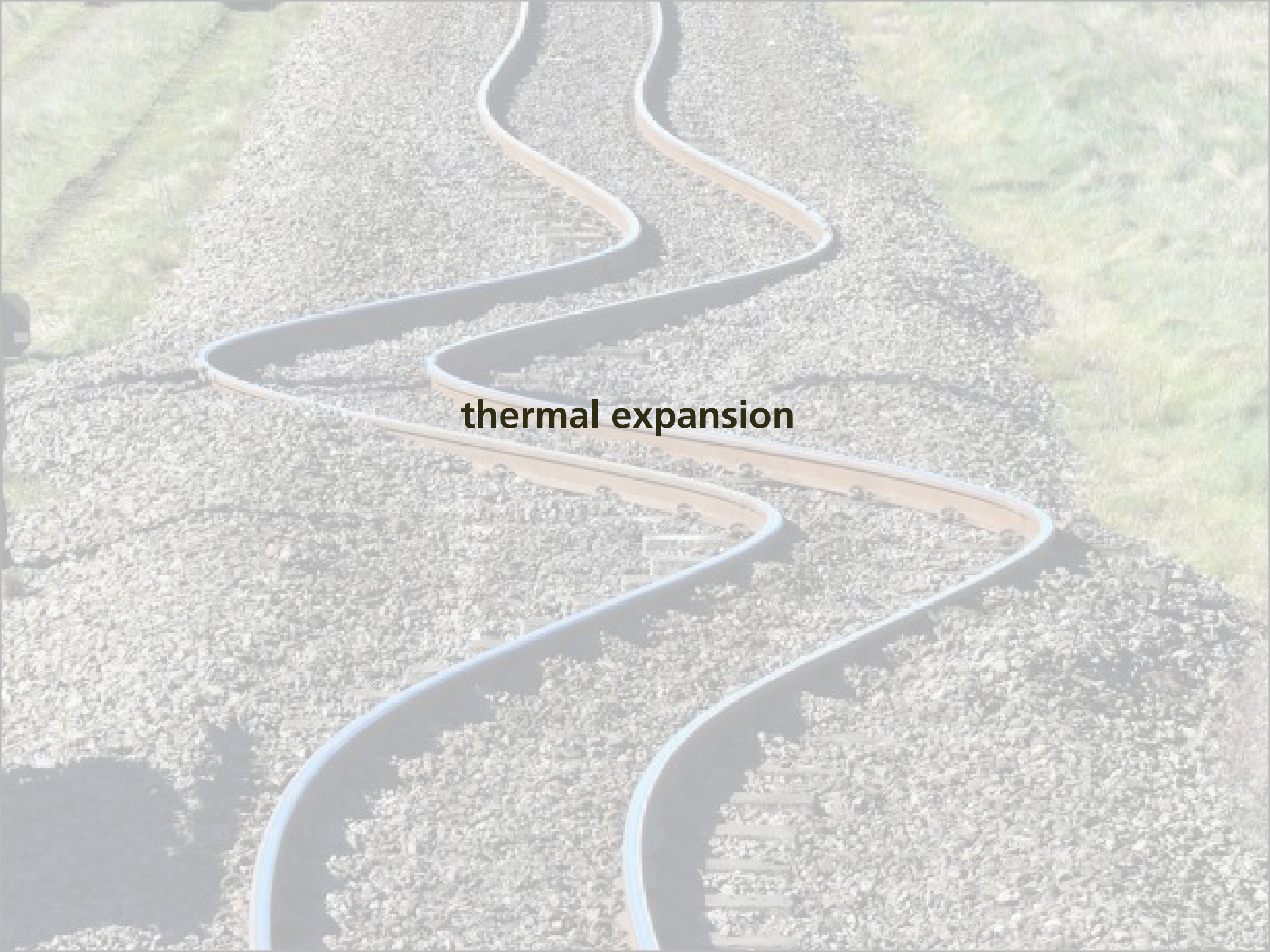
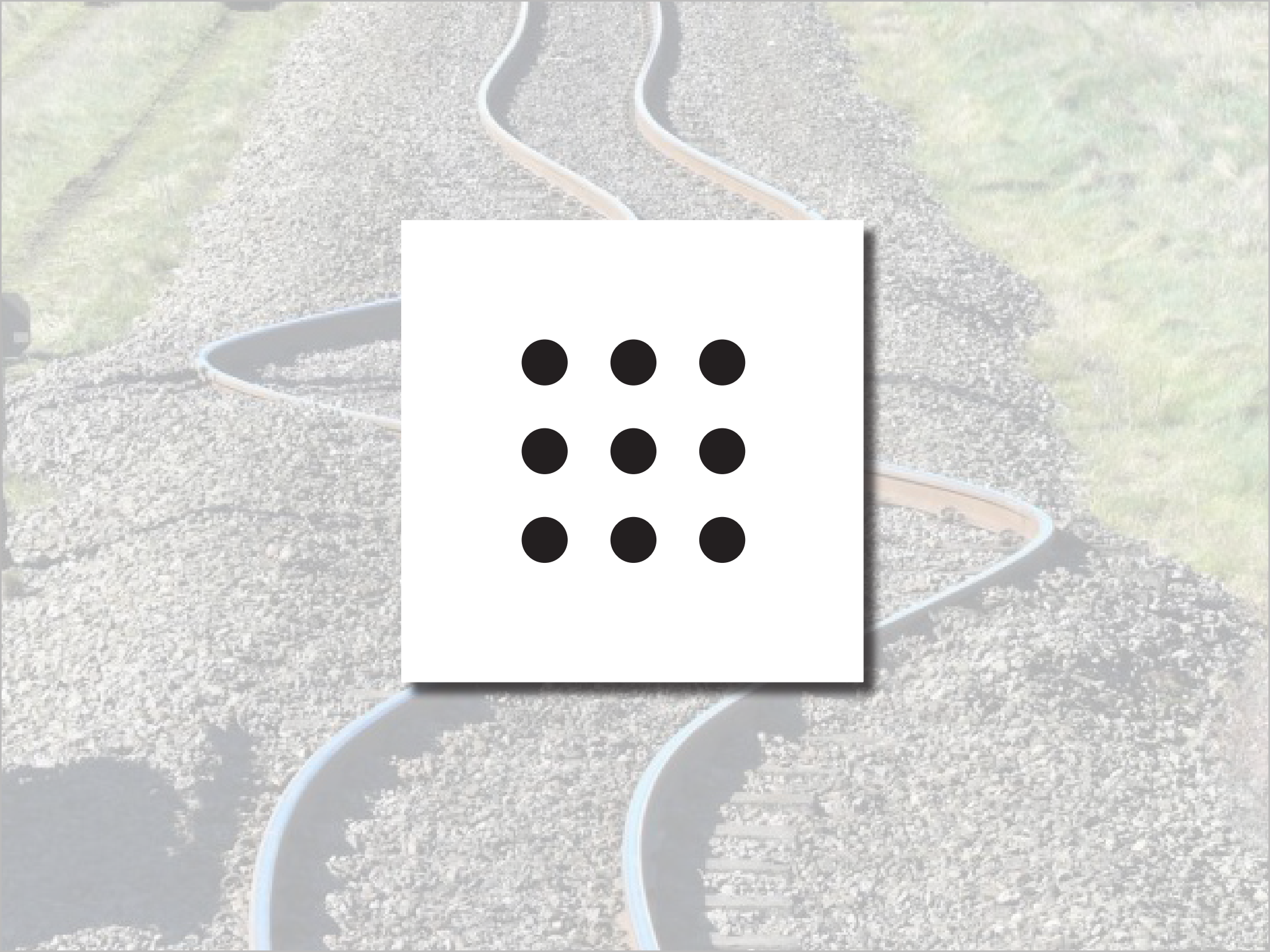
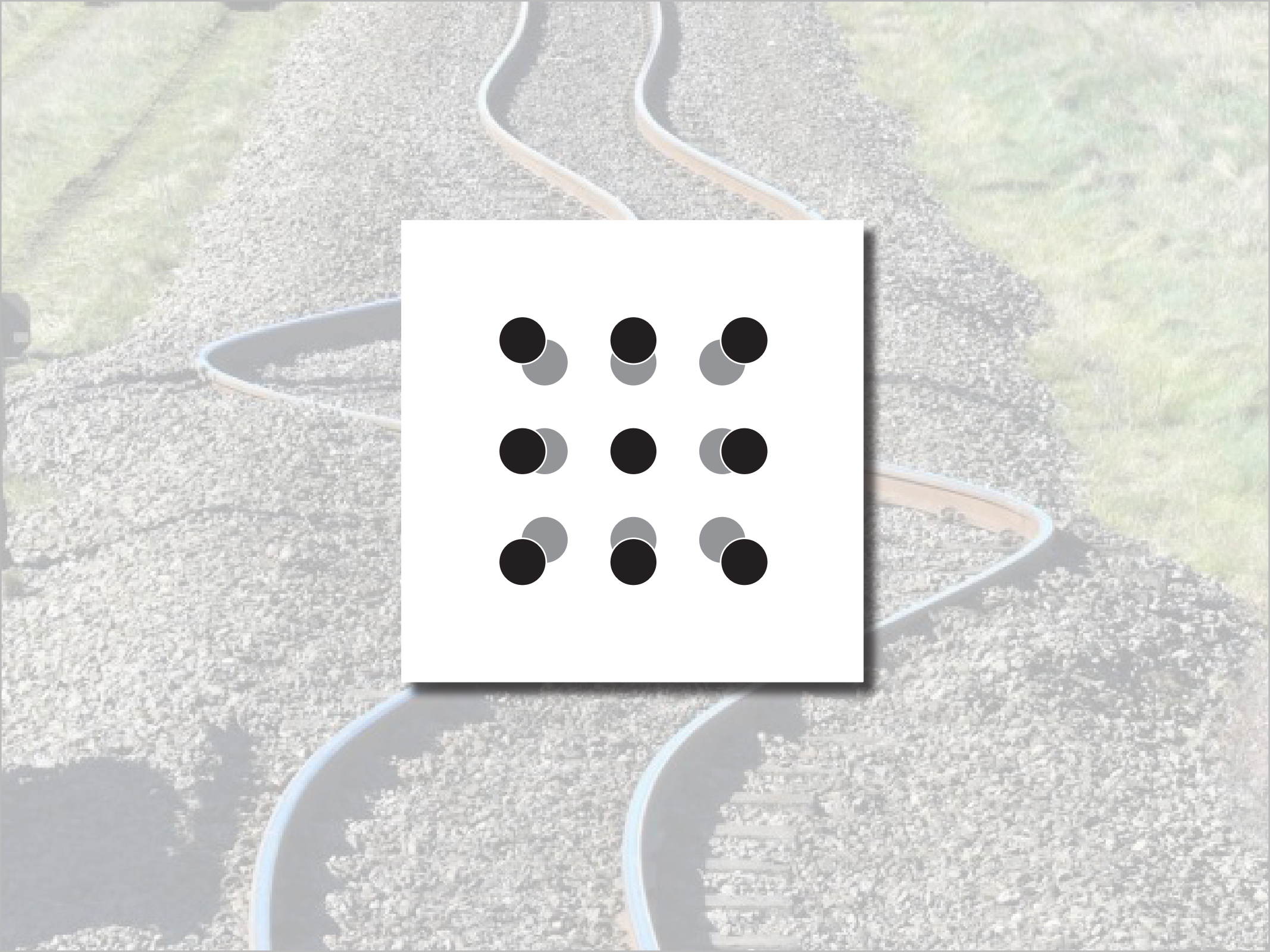
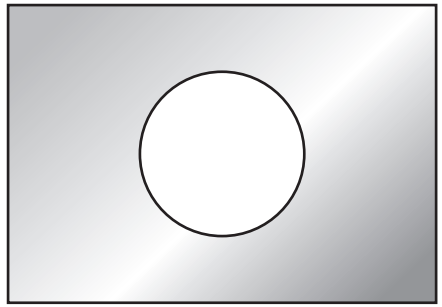

thermal expansion



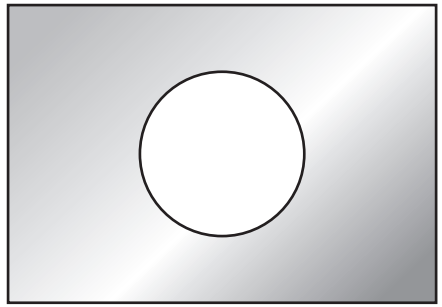



all of them

Consider a rectangular metal plate with a circular hole in it.



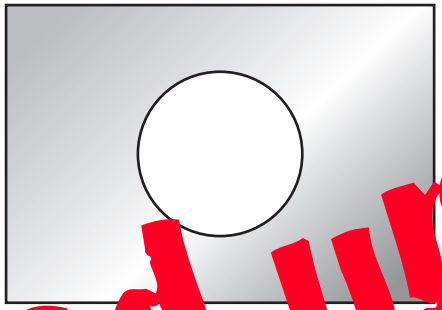
Consider a rectangular metal plate with a circular hole in it.



When the plate is uniformly heated, the diameter of the hole

1. increases.
2. stays the same.
3. decreases.

Consider a rectangular metal plate with a circular hole in it.

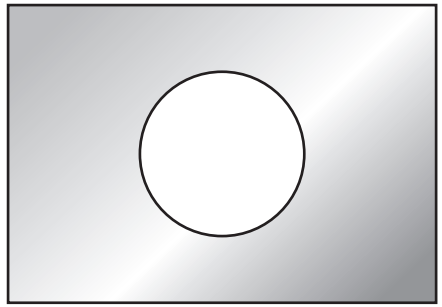


When the plate is uniformly heated, the diameter of the hole

1. increases.
2. stays the same.
3. decreases.

you got all fired up!

Consider a rectangular metal plate with a circular hole in it.



When the plate is uniformly heated, the diameter of the hole

1. increases.
2. stays the same.
3. decreases.

Before I tell you the answer, let's analyze what happened.

Before I tell you the answer, let's analyze what happened.

You…

Before I tell you the answer, let's analyze what happened.

You…

1. made a commitment

Before I tell you the answer, let's analyze what happened.

You…

1. made a commitment
2. externalized your answer

Before I tell you the answer, let's analyze what happened.

You…

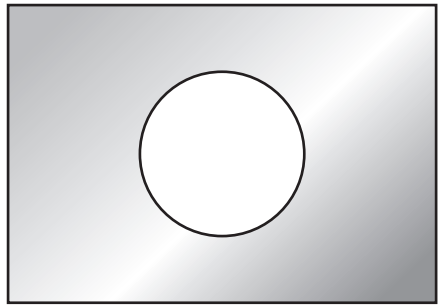
1. made a commitment
2. externalized your answer
3. moved from the answer/fact to reasoning

Before I tell you the answer, let's analyze what happened.

You…

1. made a commitment
2. externalized your answer
3. moved from the answer/fact to reasoning
4. became emotionally invested in the learning process

Consider a rectangular metal plate with a circular hole in it.



When the plate is uniformly heated, the diameter of the hole

1. increases.
2. stays the same.
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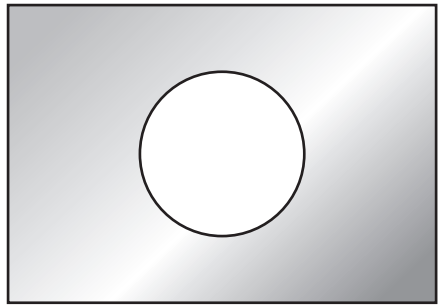
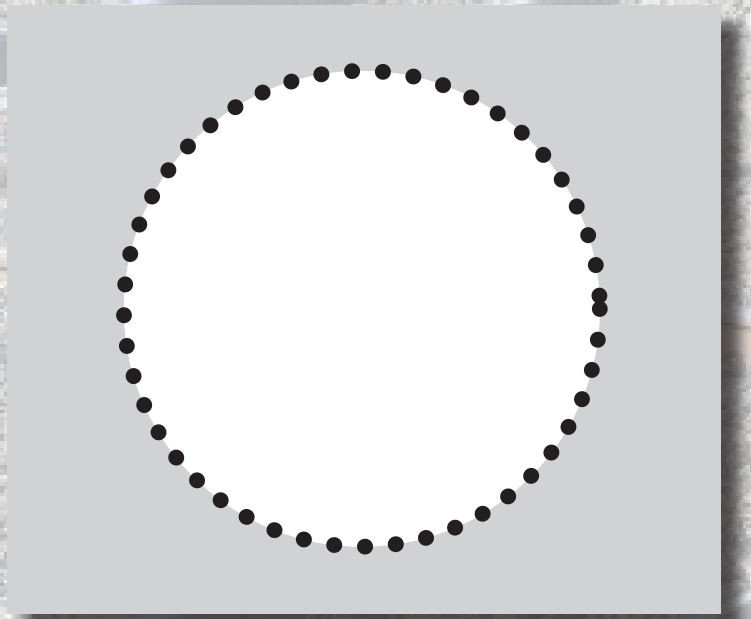
Consider a rectangular metal plate with a circular hole in it.



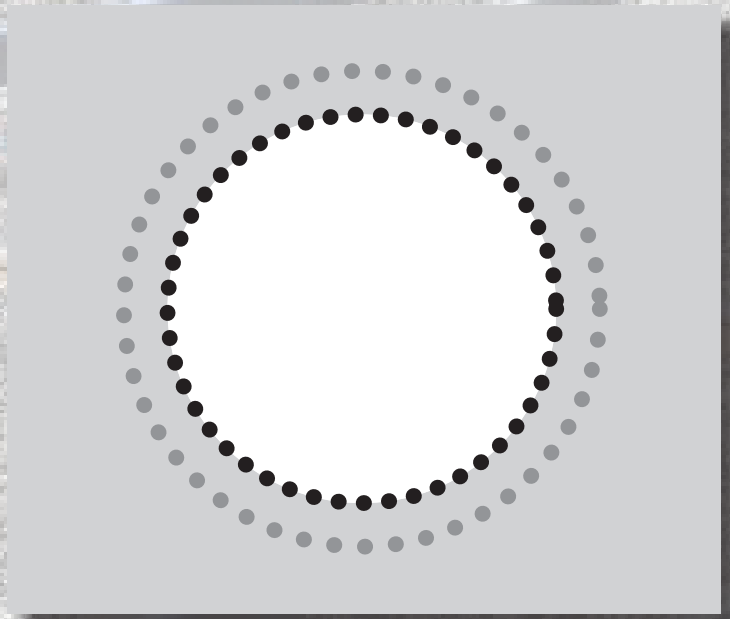
When the plate is uniformly heated, the diameter of the hole

1. increases. ✔
2. stays the same.
3. decreases.

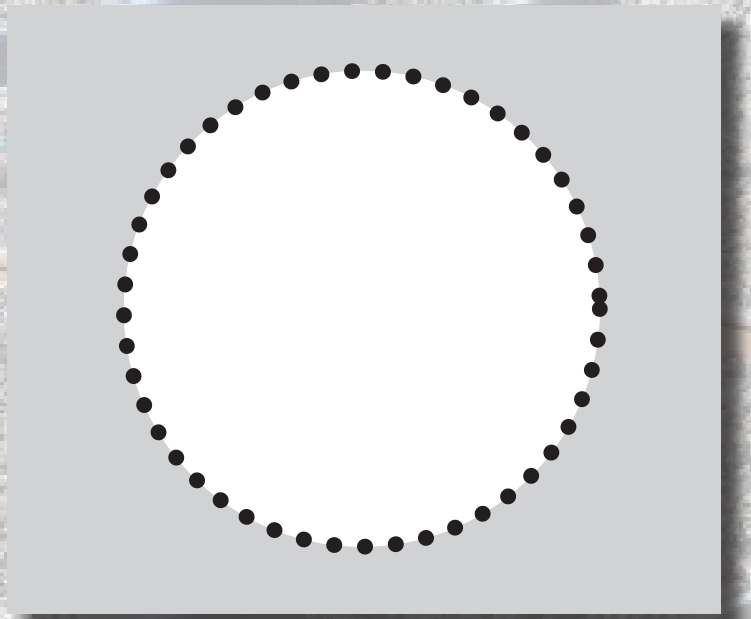
consider atoms at rim of hole



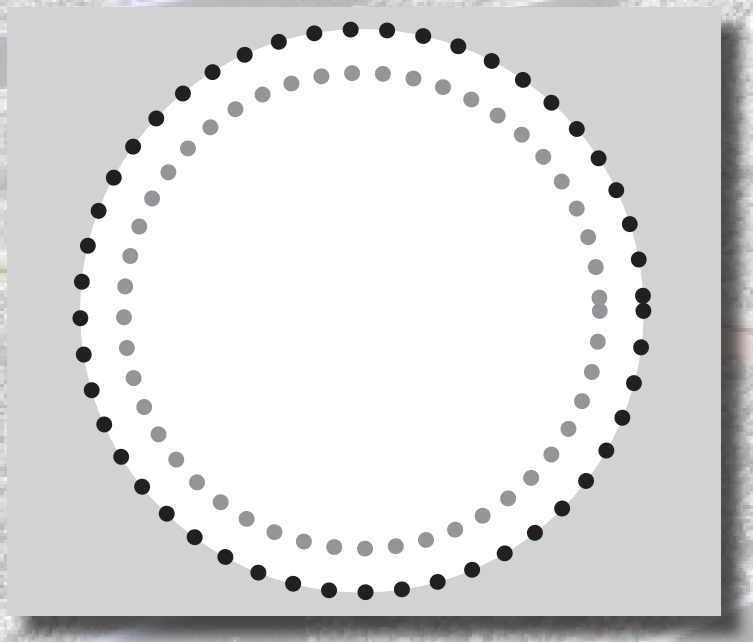
consider atoms at rim of hole



consider atoms at rim of hole



consider atoms at rim of hole



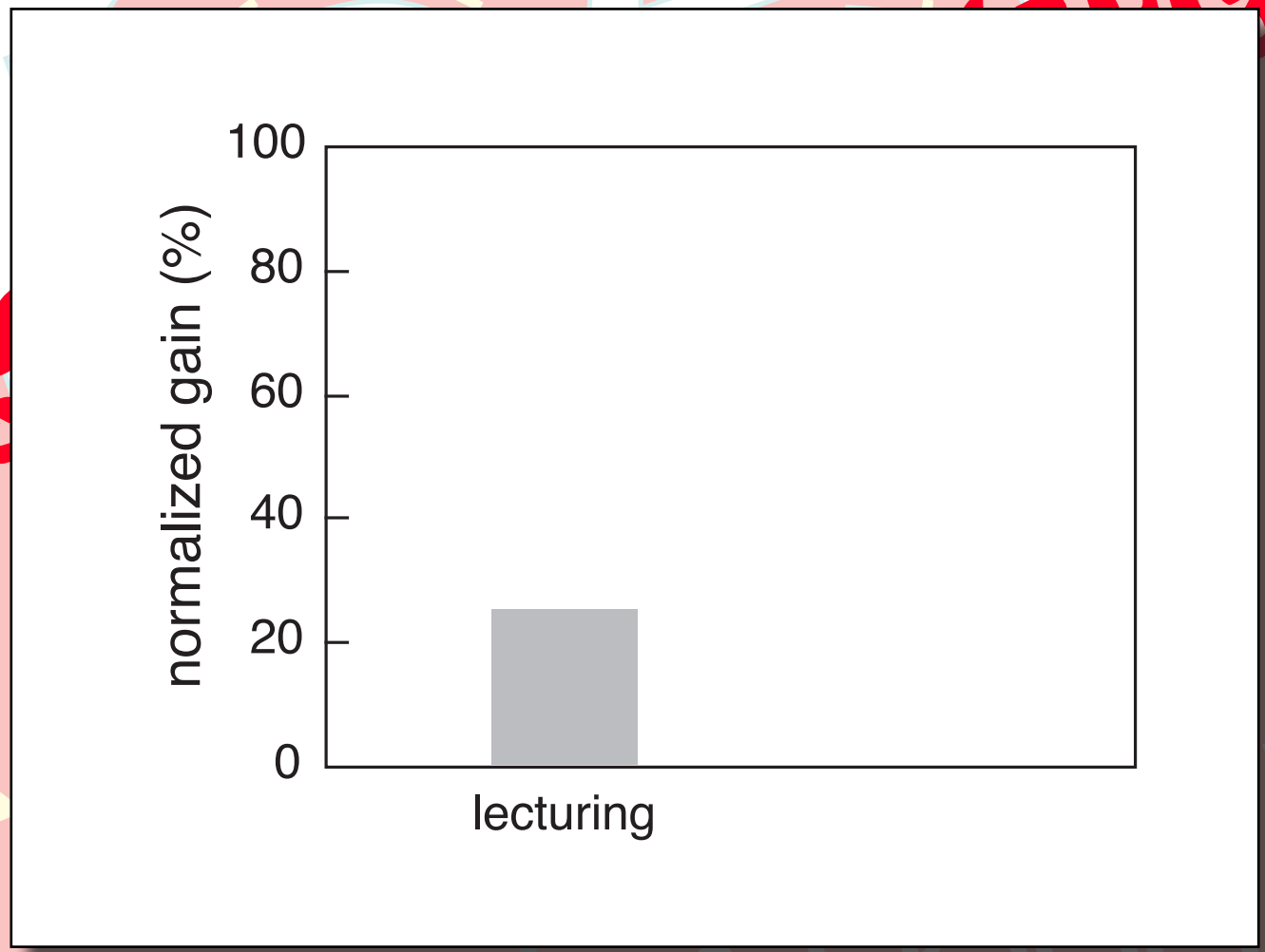
consider atoms at rim of hole

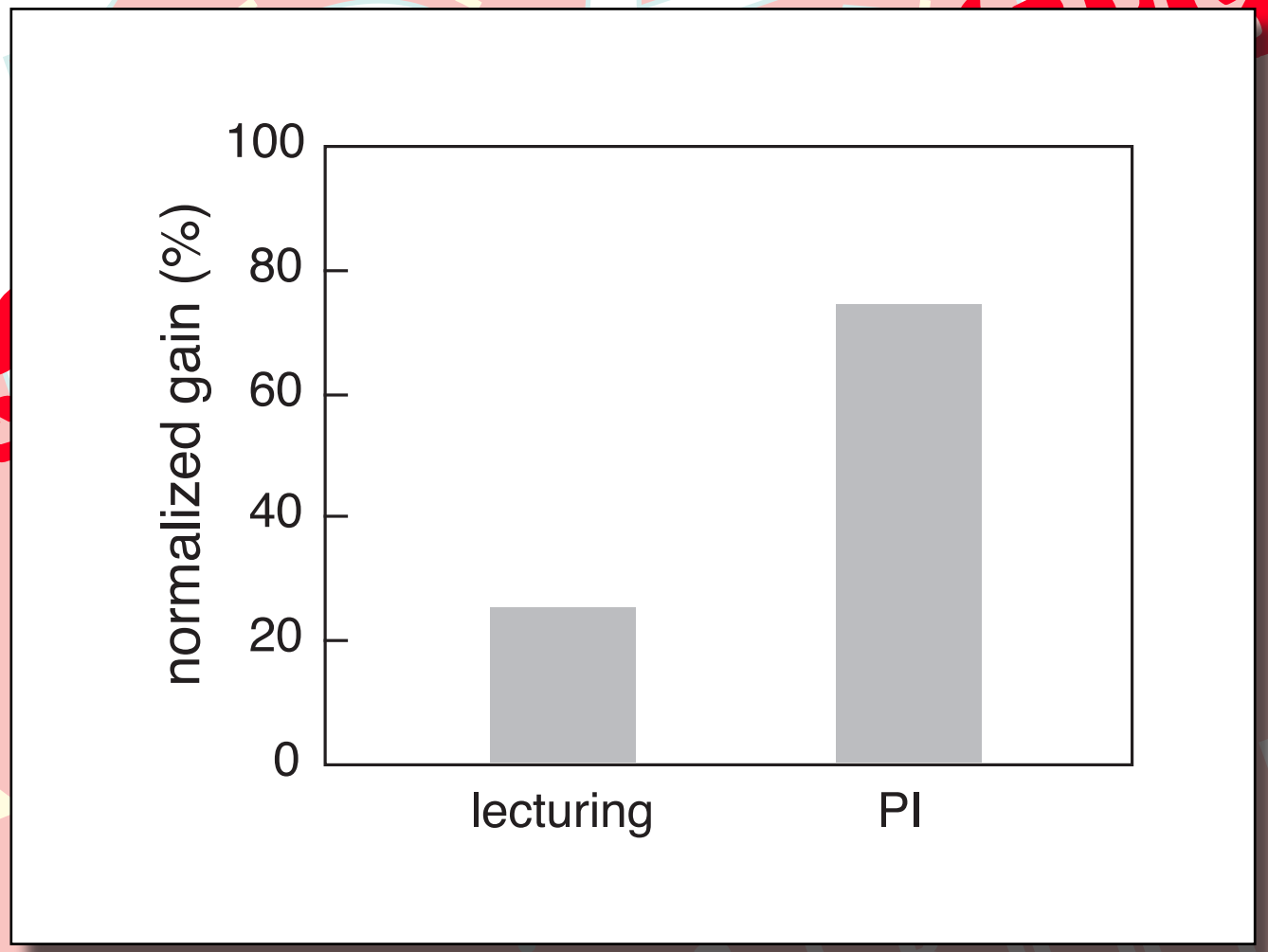
peer

back to pi

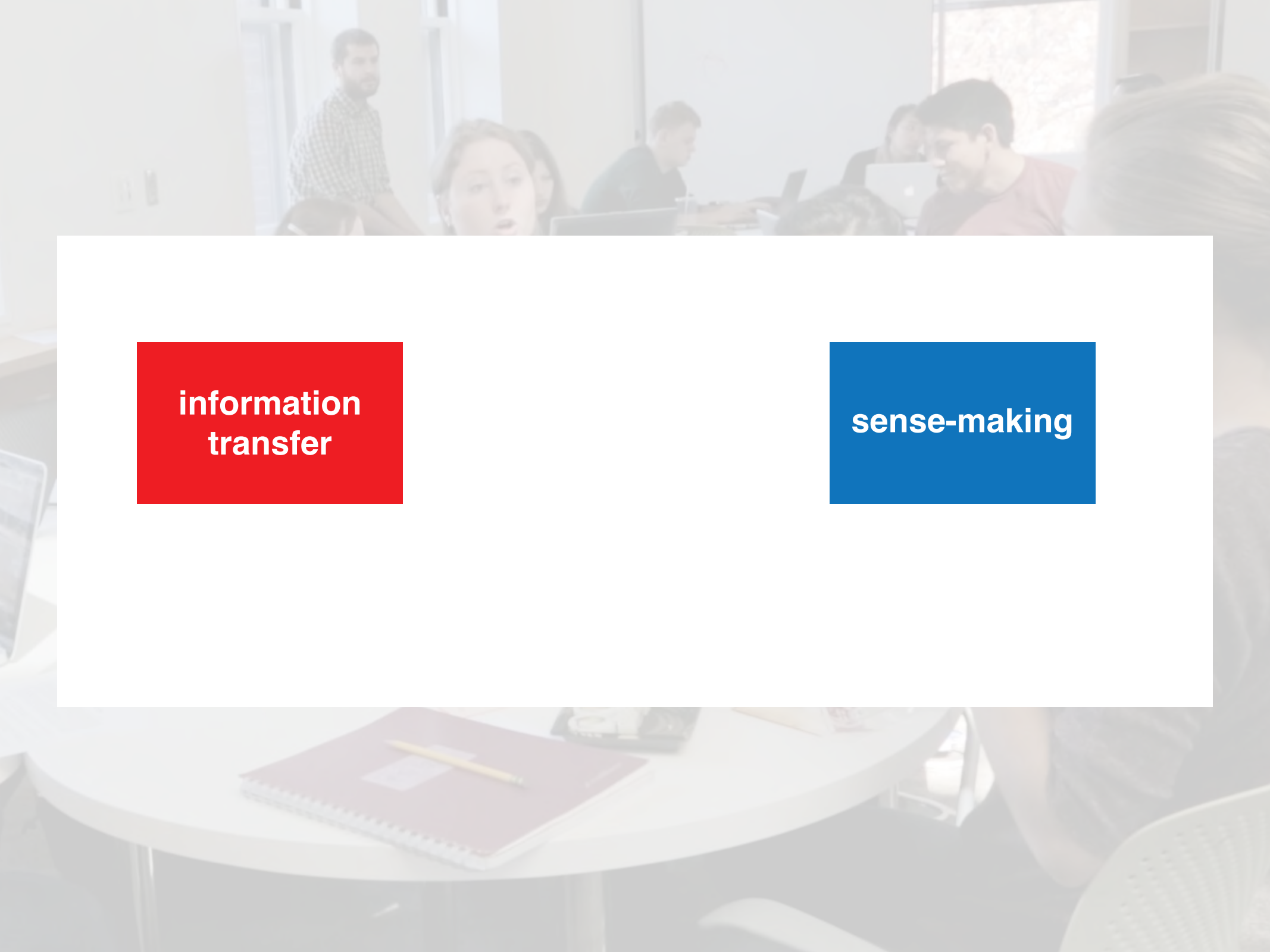
INSTRUCTION

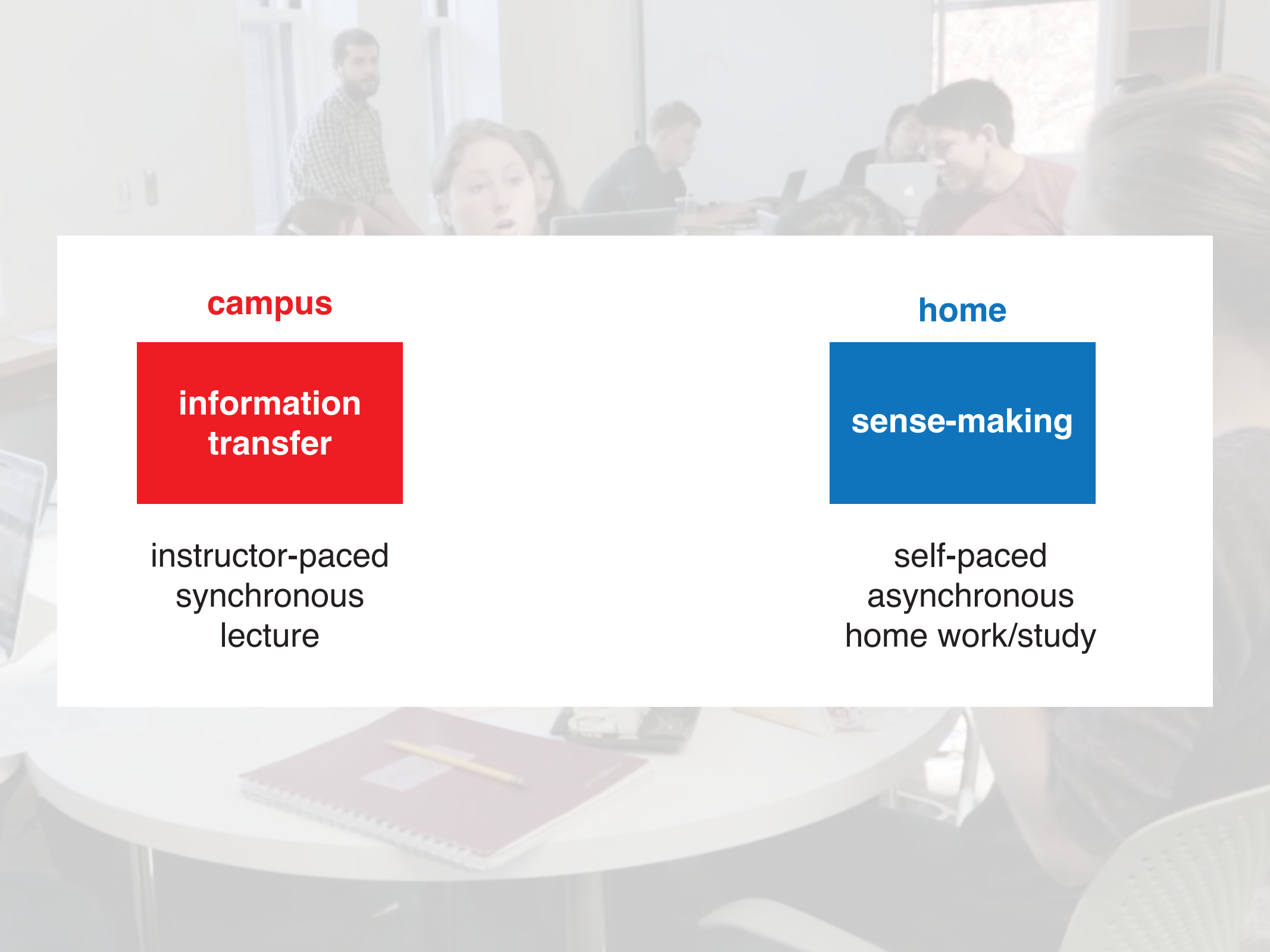

Peer
Higher learning gains
INSTRUCTION


100
80
60
40
20
0
normalized gain (%)
lecturing


100
80
60
40
20
0
normalized gain (%)
lecturing
PI


Peer
Higher learning gains
Better retention
INSTRUCTION


information transfer
sense-making



campus

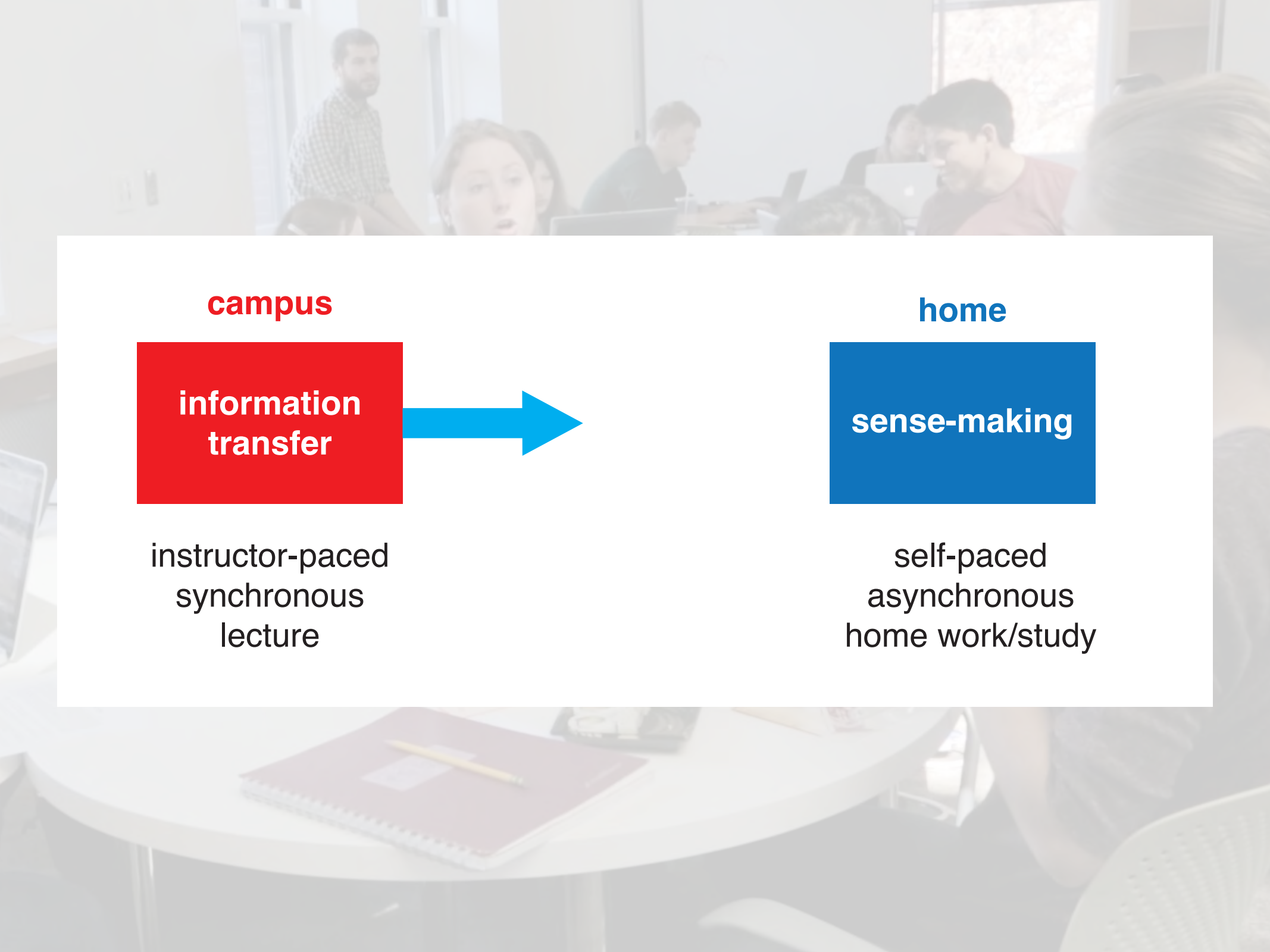
information transfer

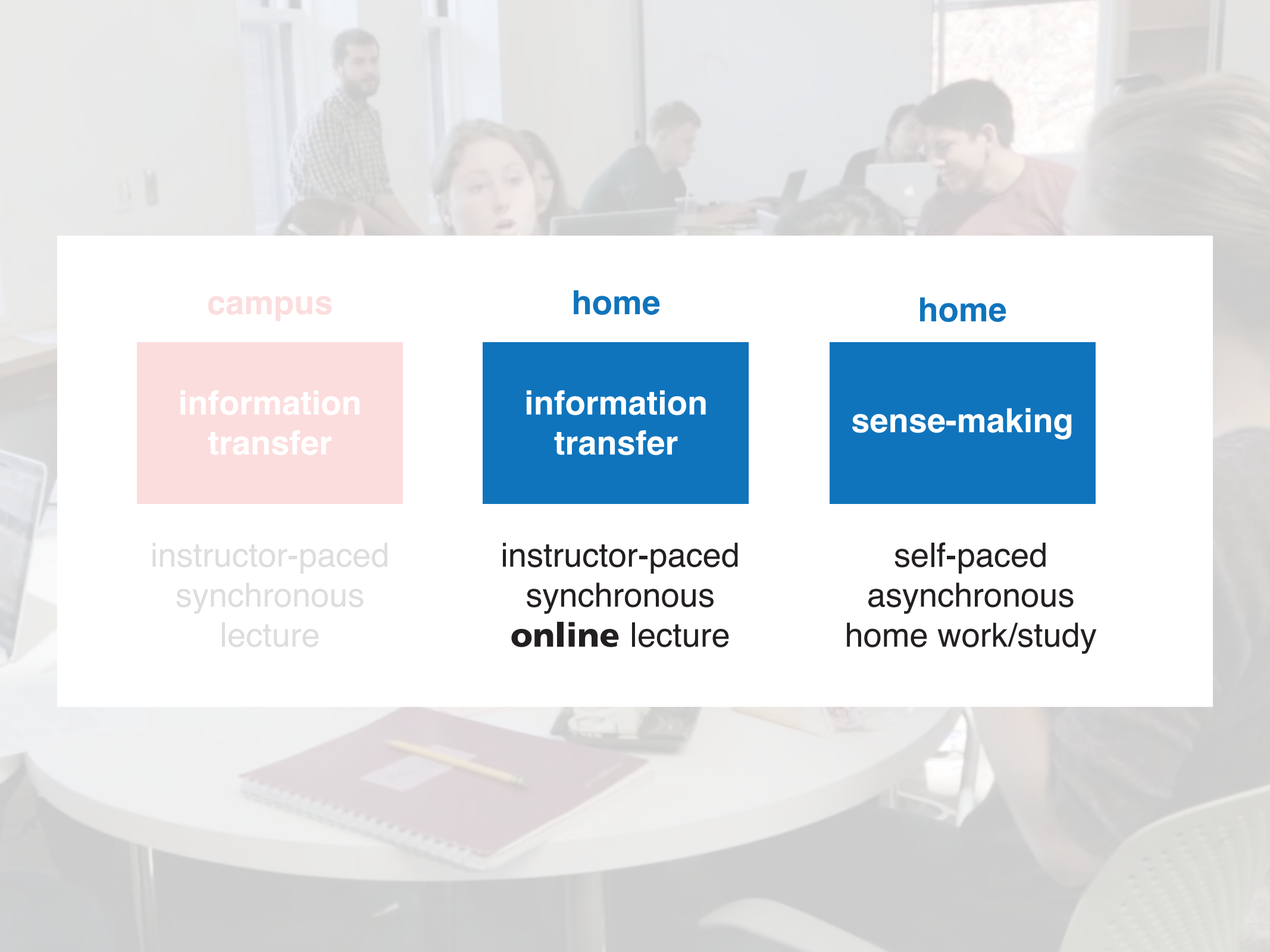
instructor-paced
synchronous
lecture

home

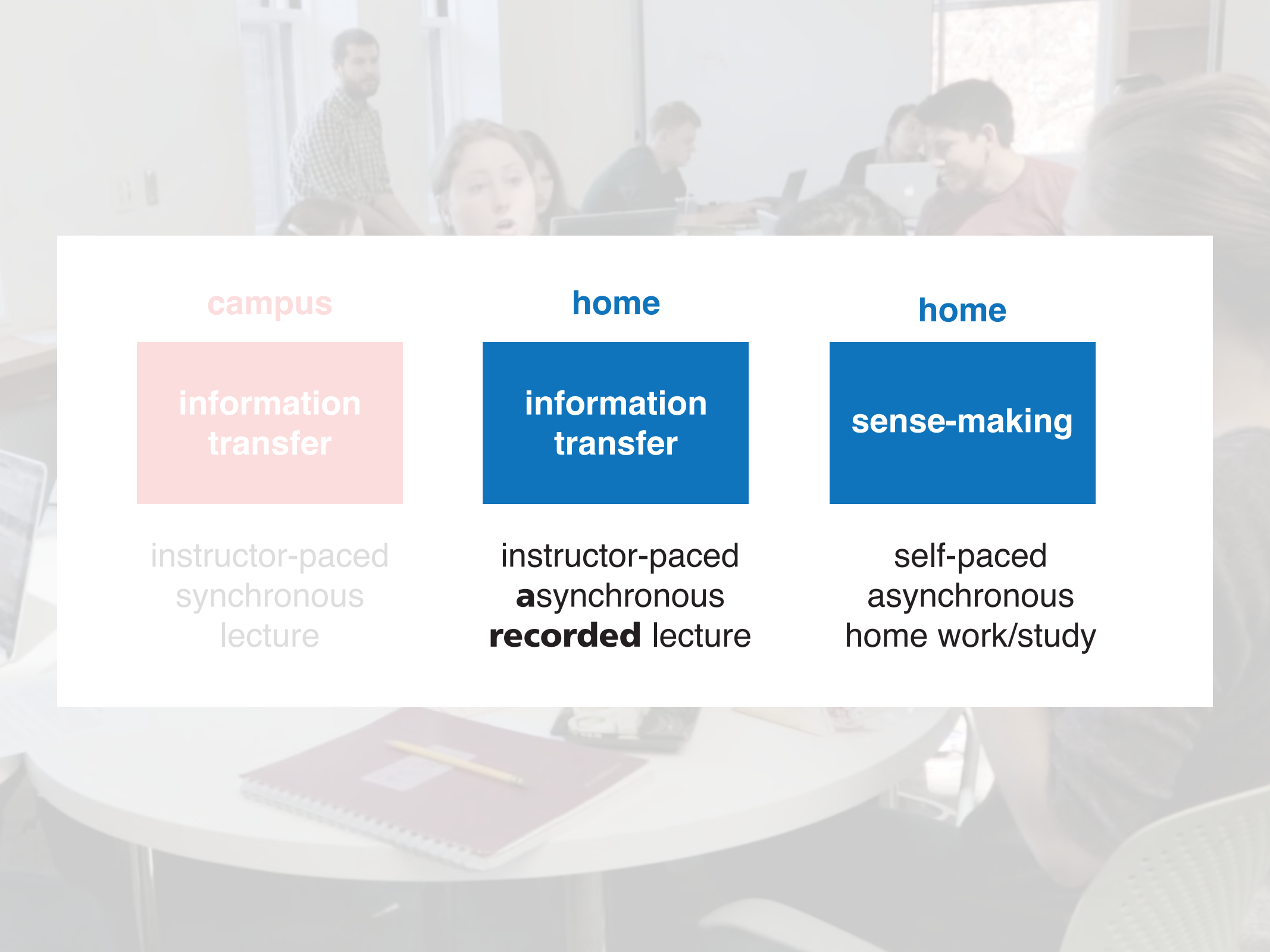
sense-making

self-paced
asynchronous
home work/study

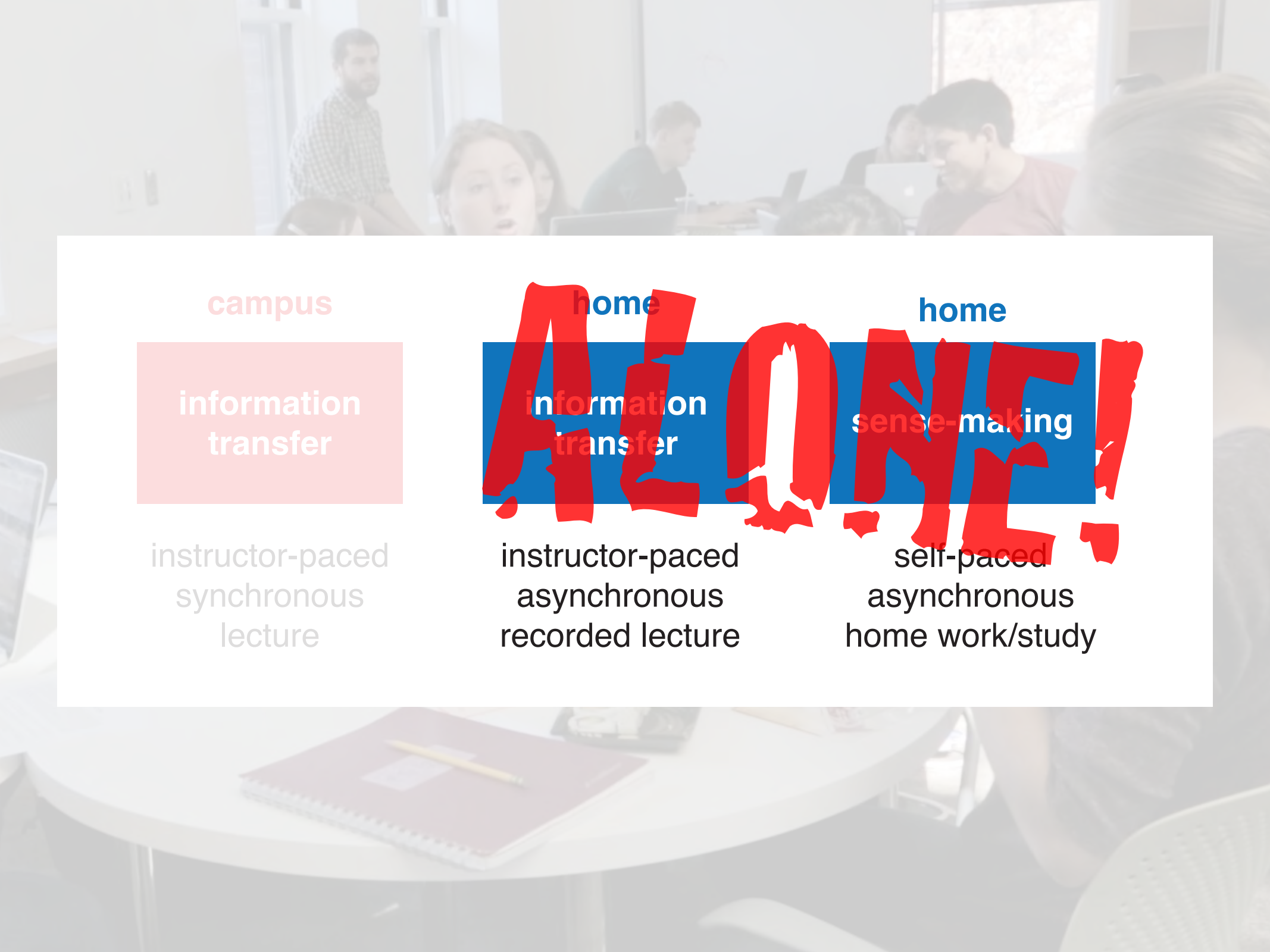

campus
information transfer
instructor-paced
synchronous
lecture
home
sense-making
self-paced
asynchronous
home work/study

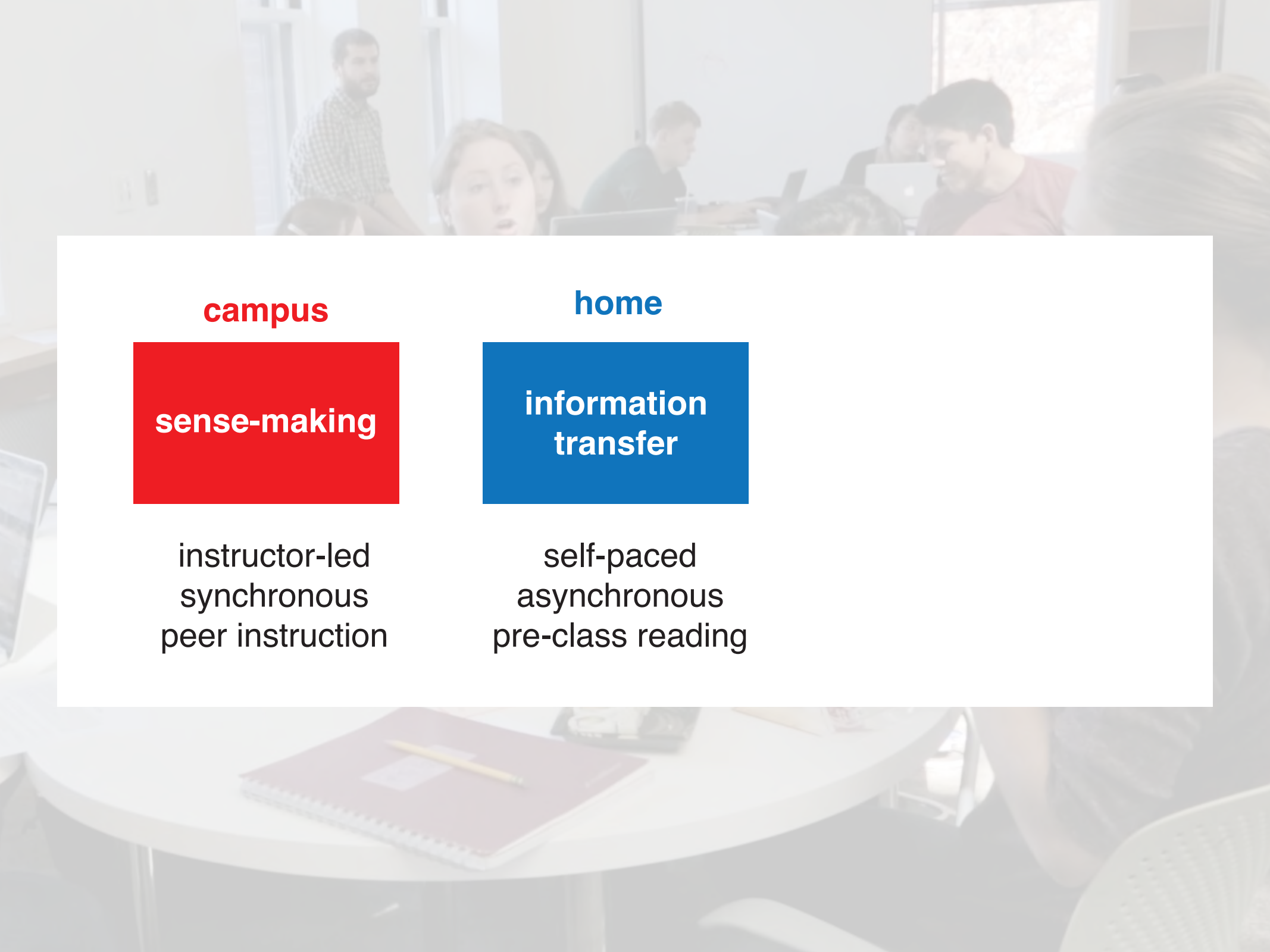


campus	home	home
information transfer	**information transfer**	**sense-making**
instructor-paced synchronous lecture	instructor-paced synchronous **online** lecture	self-paced asynchronous home work/study

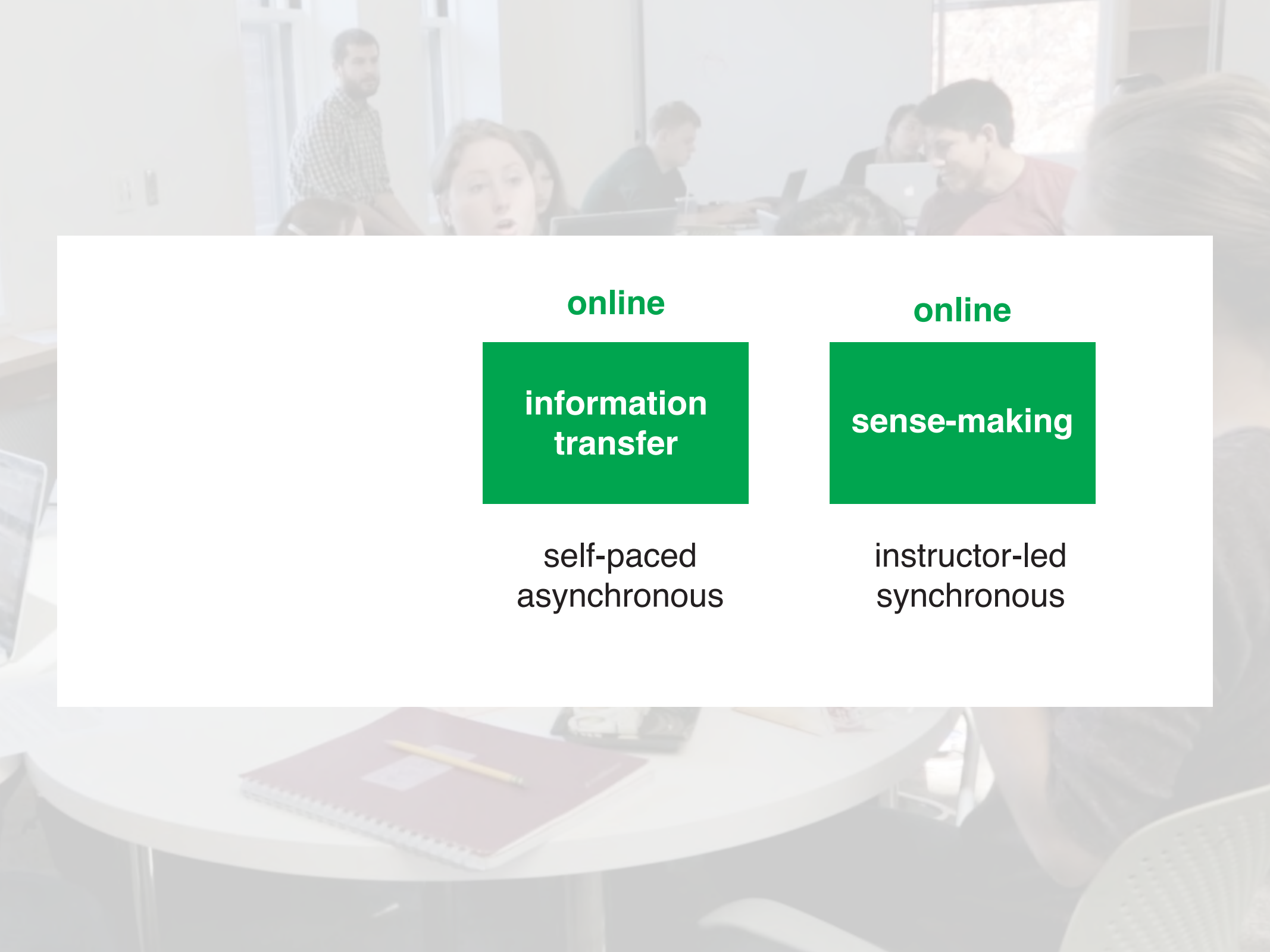


campus	home	home
information transfer	**information transfer**	**sense-making**
instructor-paced synchronous lecture	instructor-paced **a**synchronous **recorded** lecture	self-paced asynchronous home work/study


campus
home
home
information transfer
information transfer
sense-making
ALONE!
instructor-paced synchronous lecture
instructor-paced asynchronous recorded lecture
self-paced asynchronous home work/study



campus	home
sense-making	**information transfer**
instructor-led synchronous peer instruction	self-paced asynchronous pre-class reading



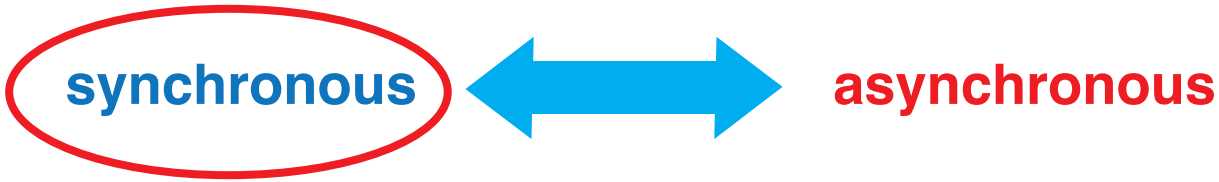
	online	online
	information transfer	**sense-making**
	self-paced asynchronous	instructor-led synchronous


online
online
information transfer
sense-making
interactive
self-paced
asynchronous
instructor-led
synchronous

Improving education

synchronous  asynchronous

Improving education



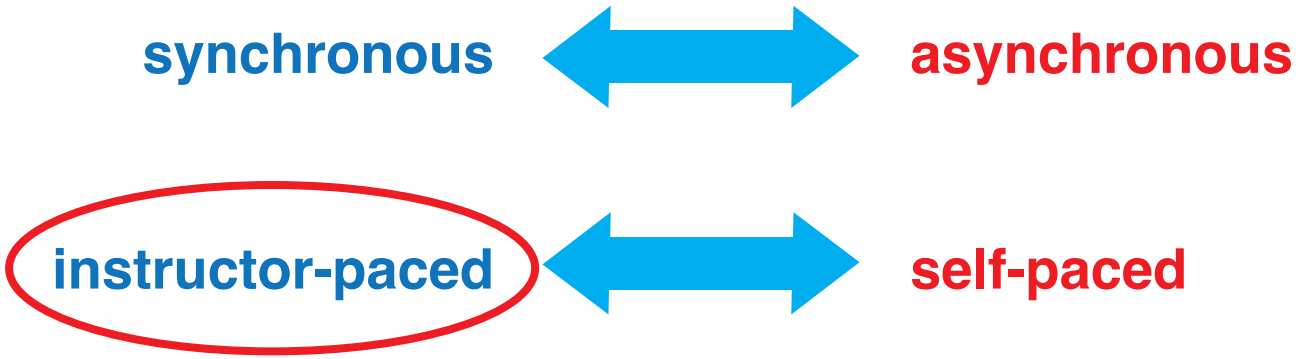
everybody together
at the same *time*

Improving education

synchronous  asynchronous

instructor-paced  self-paced

Improving education



everybody together
at the same *pace*

Improving education

lecture

synchronous ⟷ asynchronous

instructor-paced ⟷ self-paced

Improving education

recorded lecture

synchronous ⟷ **asynchronous**

instructor-paced ⟷ self-paced

Improving education

lab

synchronous ⟷ asynchronous

instructor-paced ⟷ self-paced

Improving education

homework/study

synchronous ⟷ **asynchronous**

instructor-paced ⟷ **self-paced**

Improving education

synchronous → asynchronous

instructor-paced ↔ self-paced

Improving education

synchronous → asynchronous

instructor-paced → self-paced

Improving education

synchronous → asynchronous

instructor-paced → self-paced

more time to help students where it really matters!

for a copy of this presentation:

mazur.harvard.edu

resource sheet: bit.ly/fliponline

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