

Learning Spaces

Design principle
cards



Utrecht University

Learning Spaces Design Principle Cards

These design principle cards are meant to inspire conversations and discussions about learning spaces for higher education. They can also help with the intentional design of learning spaces, aiding institutions to move away from the 'let's do it as we've always done it' pitfall.

The starting point for these cards was the observation that the behaviour of students and teachers is influenced by the space. Spaces communicate expectations of preferred behaviour quite clearly. Look at a traditional lecture hall. What are you expected to do? For students and the teacher alike, that is pretty obvious.

Spaces can also obstruct or enable preferred behaviours. Ever tried to help a student with an exercise, when he or she sits in the middle of a row?

With these design principle cards we have tried to create an easy-to-use-instrument that helps us to use the power of learning spaces for the good: nudging our teachers and students towards active teaching and learning.



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Who can use these cards?

These cards can be used on different levels. Whether you are a teacher that wants to know how to use a flexible learning space, or you work at the real estates department and are responsible for a new learning spaces concept of your institution.

How to use these cards?

When using these principles, you might notice that some of them are direct opposites. As a consequence, you can never apply all design principles to your learning space. No sweat. You are not meant to.

First of all, you will work on only one type of learning space at a time. So before you start, choose what type of learning space you will be working on. What kind of activities will take place there?

Share this with (a) partner(s) outside of your programme or institution and talk about the context of the teaching and learning and the most important didactical elements.

Start with Perspective

When you start, first select only the yellow Perspective cards. Depending on how much time you have, you can choose to work on just one, two, or maybe all available perspectives. Select all cards that belong to the chosen perspectives and set the rest aside.



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Objective

When you flip your selected perspective cards, you see several objectives, all in different colours. Select two to three objectives and put them in front of you. Set the rest aside.

Principles

Now, select from the deck of principle cards, all cards that have the same colour as the selected objectives and read the principles carefully.

These principles are short and abstract. This has been done in order to be able to generate multiple ideas. If you need a little help with this, you can look at the backside of the card where some examples are given. Now, select three principles that are important for your learning space and hand them over to your partner.

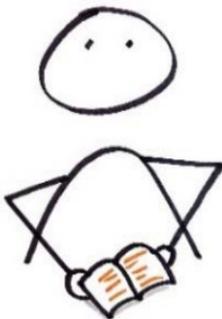
Rapid prototyping

Your partner(s) will use LEGO or another fast 3D visualiser to produce a prototype of your learning space in approximately 10 minutes.

Afterwards: discuss the intentions of this design. If more designs have been made: what elements work best and can you combine them?

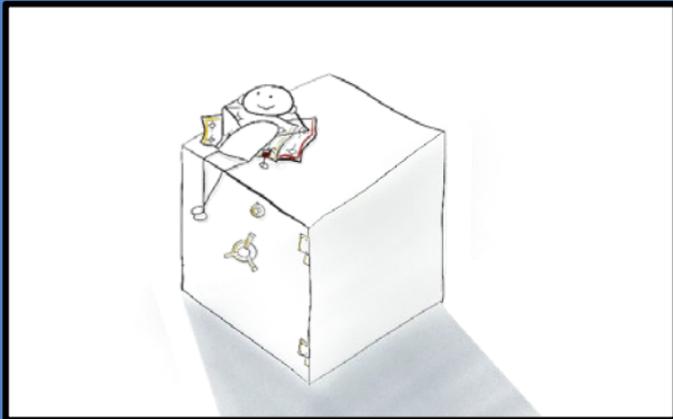


Perspective



The student

Objective



Students feel safe and comfortable.

Principle

*Increase the informality
of the space.*

Objective

Students feel safe and comfortable.



Examples

- Apply homey decorations.
- Make use of colours.
- Apply soft surfaces, such as couches and pillows.
- Apply low furniture, such as coffee tables and tuffets.

Food for thought: what makes coffee bars such popular places?

Principle

Increase the informality of the space.

Principle

*Promote autonomy in
the space.*

Objective

Students feel safe and comfortable.



Examples

- Allow students to alter the learning space: move furniture around, apply decorations.
- Use a pin-up board where students can show their learning process during the course.
- Allow student groups to mark their group table with a logo or mascot.
- Provide different types of furniture, so that students can choose where to work.

Principle

Promote autonomy in the space.

Principle

*Increase the
predictability of the
environment.*

Objective

Students feel safe and comfortable.



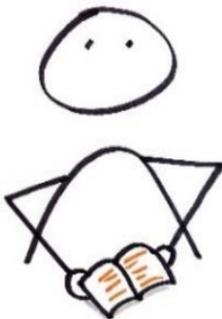
Examples

- Limit the number of learning spaces you use to only one or two.
- Give each student their own seat in the classroom.
- Make sure that the room lay out already gives information about the learning activities that will take place.

Principle

Increase the predictability of the environment.

Perspective



The student

Objective



Students feel active.

Principle

Promote movement.

Objective
Students feel active.



Examples

- Make use of the station rotation model: Different learning activities take place simultaneously at different 'stations' in the room. Students rotate through the stations.
- Give students enough space to move around.
- Use high working surfaces, so that students can work standing, providing more freedom to move.
- Distribute materials and facilities in the space, so that students need to walk to get to them.

Principle

Promote movement.

Principle

Promote active body postures.

Objective
Students feel active.



Examples

- Let students stand up, ie by using sit-to-stand tables.
- Make use of stools and high chairs.
- Make use of chairs with upright backrests.
- Make use of chairs, stools or tuffets without backrest.

Principle

Promote active body postures.

Principle

Promote variations.

Objective
Students feel active.



Examples

- Apply furniture that allows students to vary their body posture (sitting, standing, walking).
- Apply furniture that allows varying between learning activities with a focus on interactions with the teacher, fellow students, the content and outside of the classroom.
- Make use of the station rotation model with different types of furniture and learning activities in each corner of the room.

Principle

Promote variation.

Principle

*Promote curiosity
towards the learning
activities.*

Objective
Students feel active.



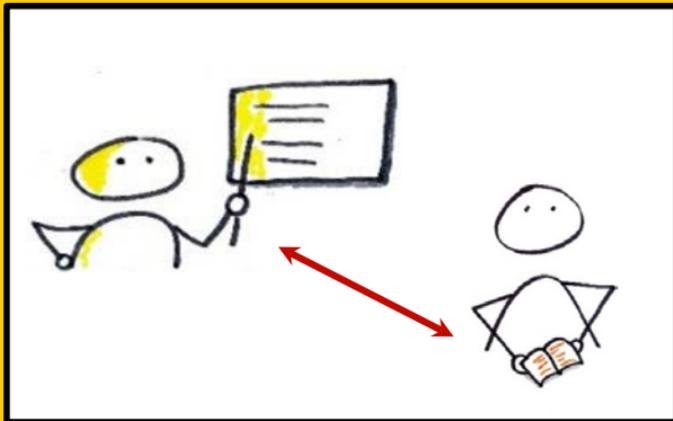
Examples

- Put supporting materials on display that students will need for the learning activities.
- Put content on display for which the link with the subject matter is not yet obvious.
- Put the furniture in an unexpected lay-out.

Principle

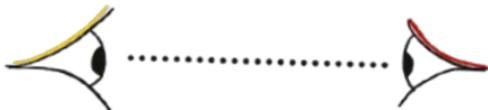
Promote curiosity towards the learning activities.

Perspective



Student – Teacher Interaction

Objective



Student – teacher eye contact.

Principle

*Decrease the distance
between each student and
the teacher.*

Objective
Student-teacher eye
contact.



Examples

- The teacher operates from the middle of the room.
- Shorten the depth of the desk surfaces.
- Shorten the depth of the 'teacher arena'.
- Use a 'landscape' orientation of the room, instead of a 'portrait' orientation, so that the space is wider than it is long.

Principle

Decrease the distance between each student and the teacher.

Principle

*Decrease the obstacle
surface between student
and teacher.*

Objective
Student-teacher eye
contact.



Examples

- Remove all obstacles.
- Turn screens in a computerroom 90 degrees during teacher instruction.
- Make sure that room dividers, whiteboards and flipovers do not block the teacher's view at the students.
- Make use of horizontal displays, i.e. tablets instead of laptops.

Principle

Decrease the obstacle surface between student and teacher.

Principle

Make it easy for the student and teacher to face each other.

Objective
Student-teacher eye contact.



Examples

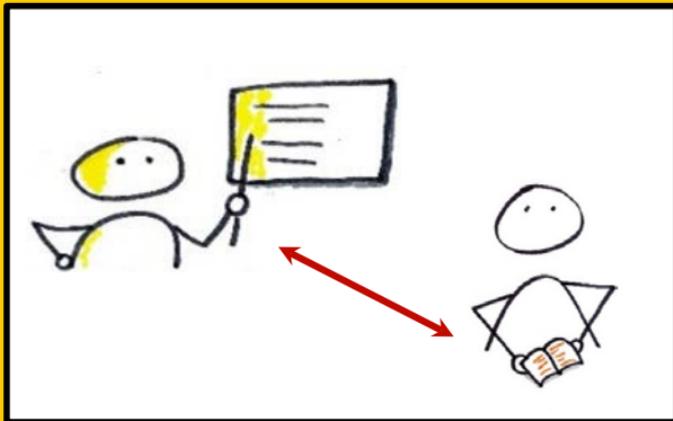
- Students and teacher are facing each other by default.
- Use swivel chairs.
- Use chairs on wheels.

Food for thought: what is within reach for the student when he can turn a 360 degrees? What is not?

Principle

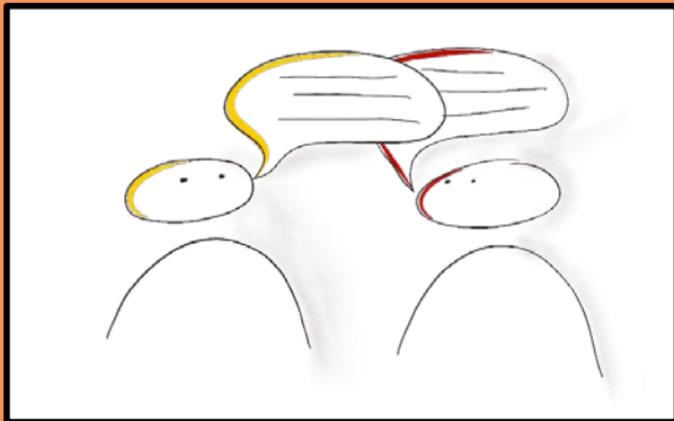
Decrease the obstacle surface between student and teacher.

Perspective



Student – Teacher Interaction

Objective



Student-teacher conversation.

Principle

*Provide better access to
the student for the teacher.*

Objective
Student-teacher
conversation.



Examples

- Add extra corridors between tables.
- Provide enough walking space behind the tables.
- Make use of an 'open' room lay out.

Food for thought: How much time does it take you to reach anyone in class?

When do you make the effort and when do you stop bothering? What's your threshold value?

Principle

Provide better access to the student for the teacher.

Principle

*Increase the teacher's view
of what each student is
working on.*

Objective
Student-teacher
conversation.



Examples

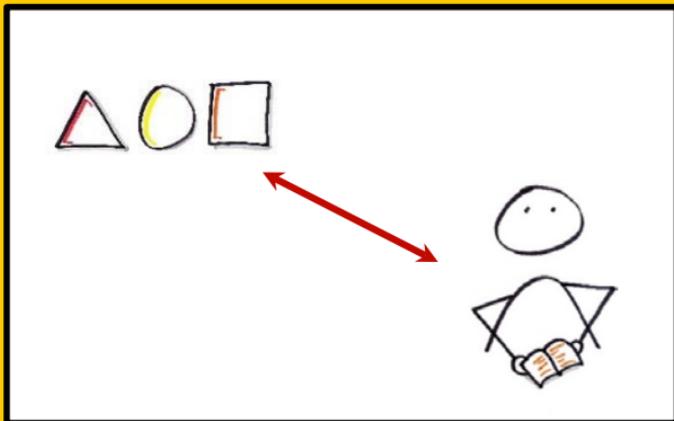
- Make student's work visible on a big screen, or a whiteboard.
- Make the student's work visible on an online platform that can be viewed by the teacher.

Food for thought: What triggers you to give feedback during a class?

Principle

Increase the teacher's view of what each student is working on.

Perspective



Student - Content Interaction

Objective



Student annotates, manipulates or creates products in relation to the subject matter.

Principle

Increase the visibility of assignments and learning content.

Objective

Student annotates, manipulates or creates products in relation to the subject matter.



Examples

- Decrease the distance between students and screens that can be used to display assignments and learning content.
- Increase screen sizes that can be used to display assignments and learning content.
- Use multiple displays to show complementary information.
- Let students bring their own device to view assignments and learning content.
- Make use of VR or AR technology to enhance the visibility of the content.

Principle

Increase the visibility of assignments and learning content.

Principle

*Increase access to physical
and/or digital working
materials for students.*

Objective

Student annotates, manipulates
or creates products in relation
to the subject matter.



Examples

- Increase access to power sockets for students.
- Provide multiple surfaces for students to work on.
- Provide a storage with crafting materials (paper, markers, cardboard, play-dough, LEGO) in the space.
- Let students bring their own devices.

Principle

Increase access to physical and/or digital working materials for students.

Principle

Minimise distractions.

Objective

Student annotates, manipulates or creates products in relation to the subject matter.



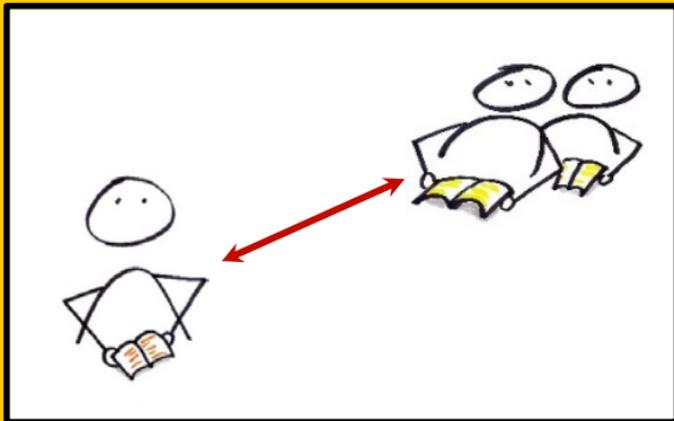
Examples

- Create ambient (visual and aural) noise.
- Create an internet deadzone.
- Increase the distance between students.
- Decrease visual distractions by intentionally aiming direction of sight.
- Decrease aural distractions by using acoustic panels.
- Provide or allow headphones in class.
- Provide quiet places to work by yourself in the classroom.

Principle

Minimise distractions.

Perspective



Student – Fellow students
Interaction

Objective



Students have a group discussion.

Principle

*Make it easy for students
to face each other.*

Objective

Students have a group discussion.



Examples

- Students are facing each other by default (group tables).
- Use swivel chairs.
- Use chairs on wheels.

Food for thought: what (other) focal points do you want your student to have during class? And when they look at one of them, can they do what they need to do? (ie taking notes, looking at complementary information, interact.)

Principle

Make it easy for students to face each other.

Principle

*Separate student groups
from each other.*

Objective

Students have a group discussion.



Examples

- Use separate group tables.
- Provide each group with its own project room.
- Use room dividers.

Food for thought: how and when does the exchange of information, thoughts and ideas between groups take place?

Principle

Separate student groups from each other.

Principle

Promote intelligibility when someone is talking.

Objective

Students have a group discussion.



Examples

- Make use of microphones and speakers.
- Install acoustic panels.
- Decrease talking distance within one interaction group.

Principle

Promote intelligibility when someone is talking.

Principle

Promote non-verbal communication.

Objective

Students have a group discussion.



Examples

- Remove all barriers (ie tables) to make body language better visible.
- Make use of soapboxes for students when they speak.
- Decrease talking distance within one interaction group.

Principle

Promote non-verbal communication.

Principle

Provide all students with an equivalent position in the interaction group.

Objective

Students have a group discussion.



Examples

- Sit or stand in a circle.
- Use a 'campfire' layout; students positioned around low displays that are visible for everyone.

Food for thought: would you like the teacher to also have an equivalent position when he or she joins the group?

Principle

Provide all students with an equivalent position in the interaction group.

Principle

*Minimise distractions from
the group discussion.*

Objective

Students have a group
discussion.



Examples

- Enable the teacher to easily remove or turn off the display of non-relevant information.
- Do not provide tables or other surfaces to keep books, phones, laptops and other non-relevant materials.
- Provide lockable storage with power for students to leave (and charge) their phones.

Principle

Minimise distractions from the group discussion.

Principle

*Enable collaborative
thinking.*

Objective

Students have a group discussion.



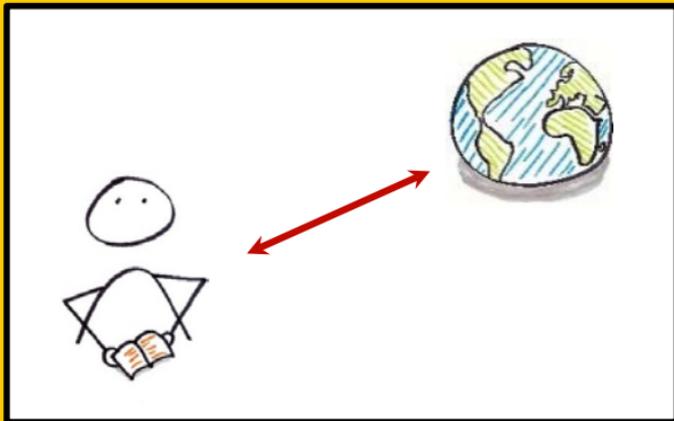
Examples

- Provide student groups with large working surfaces, such as white boards, white board foils, touch screens, flipovers or writable tables.
- Provide student groups with materials that can be used for rapid 3D prototyping, such as play dough, LEGO, et cetera.

Principle

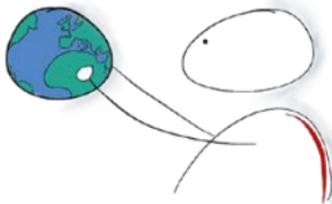
Enable collaborative thinking.

Perspective



Student – Outside world
Interaction

Objective



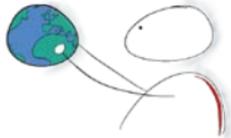
Students learn from the real world.

Principle

Bring the outside in.

Objective

Students learn from the real world.



Examples

- Use video conferencing for bringing in experts from outside.
- Use hybrid active learning classroom technologies to enable students to co-operate with partners outside of the classroom.
- Make use of public university spaces: botanical gardens, libraries.
- Organise learning activities at lobby's or entrance halls and make them accessible for people passing by.

Principle

Bring the outside in.

Principle

Take the class outside.

Objective

Students learn from the real world.



Examples

- Organise a class on a (professional) location relevant for the topic.
- Let students interact with Utrecht's citizens during class.
- Organise a working space for students at the office of a project's commissioner.
- Make use of outdoor facilities, such as green zones or outside stairs.

Principle

Take the class outside.

Perspective



Objective



Principle



Objective

Examples



Principle