Object Based Teaching and Learning

Object Based Teaching and Learning in practice: a practical guide for teachers and educational support staff

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Introduction

This is a guide for teachers and teaching assistants who want to teach with objects and have their students learn with objects. In this guide you will find different OBTL (object-based teaching and learning) methods that you can use in your teaching. You will also find practical examples to inspire you. With this guide you can start using objects in your teaching practices right away!

Would you like more background on the OBTL learning approach? Visit our website or read our comprehensive module.

Which objects?

It starts with determining your learning goals. Which learning goal(s) are suited for teaching with object(s)? The next question is: which object(s) can you use in this case? You may already have an idea, but you may need help choosing. The options below can provide inspiration:

1. Special collections

The University Library VU (UBVU) curates a large number of collections:

- Academic heritage
- Manuscripts and early primted books
- Maps and atlasses
- Archives
- Art

These collections are available for education. If you are interested in one or more collections, please contact our curators.

2. 3D printing

Is there an object that is not available, but can be produced? In our Tech Lab (NU 1A25) you can decide yourself which object you want to 3D print to use in your education. You can choose to design something yourself, using TinkerCad or Blender. Does this sound too complicated? In that case you can look for an object you want to use in numerous online databases. 3D printed objects are used in education in various ways, for example to develop students' spatial insight or in the gamification of a subject. If you have any questions about 3D printing, you can contact the Tech Lab (techlab.ub@vu.nl).

3. Your own objects

Sometimes the perfect object is already within your reach. Everyday objects can make abstract concepts concrete and provide recognition for students. For example, by starting with something familiar, you increase involvement and activate prior knowledge. For example, you can use Barbie dolls or a pin machine with a smooth keyboard to start a conversation about diversity and inclusivity. Or you can use a collection of cuddly animal toys to bring linguistic processes in the brain to life, see the example that has been written about this. Depending on your learning goal(s), the objects are sometimes already within reach!

How do I use this guide?

This guide serves as inspiration and provides practical tools to get started with various OBTL work forms. The work forms can be used flexibly, and you can easily add your own twist to them. Pick elements, combine them with each other and above all, do what works for you and what fits well with your education.

Each method contains an overview of what skills you can train with it. This can help you choose the right method for your education and gives insight into a wide range of possibilities within teaching with objects. In this guide we focus on four skills, which we have distilled from literature. In our opinion, these skills are the most relevant within a university education. Of course, adjustments of these work forms may also support training of other skills. Be free in this.

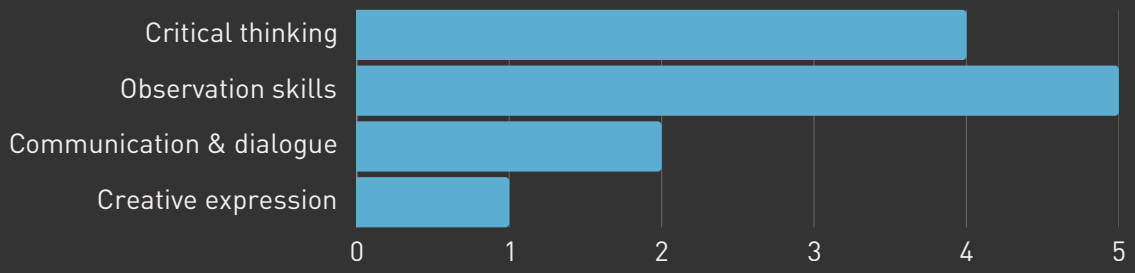
The four skills:

1. Critical thinking includes encouraging asking questions and developing strategies to answer those questions yourself.
2. Observation skills include looking at objects objectively (without interpretations), without attaching interpretations to them.
3. Communication skills and collaboration include starting a conversation and practicing exploring an object together. Students can build on each other's knowledge.
4. Creative expression uses objects to stimulate creativity and enrich the imagination.

In this guide, we first provide a brief description for each method. These will be followed by specific questions and examples of how you can apply the method. You can play around with these examples. For example, you can combine them with each other. We have added practical examples to some methods. This will give you an impression of how other teachers use objects in their teaching.

Methods

1. Zoom in-out



Description

With this method, students work on their observation skills and the elimination of interpretations. It starts with silently observing an object up close and choosing one detail in particular. Then, participants are asked to describe this detail without moving on to interpreting the object. Starting with these details, the curator and/or teacher makes a connection to the bigger picture so the background of the object or the connections between the different objects are revealed.

General steps you can follow:

1. Focus on detail. Describe without judgment.
2. Connect the details to the bigger picture.
3. Link to the background of the object or the connection between the objects.

Sample assignments

Assignment 1:

Draw the entire object and a close-up of the object (detail).

Assignment 2:

Ask students to select a detail .
(1) Draw or describe a detail .
(2) Students exchange their drawings or descriptions and see if they can find the object in question based on the detail.

Assignment 3:

Have students name and describe a detail of the object – without judgement, so purely objectively (zoom in).

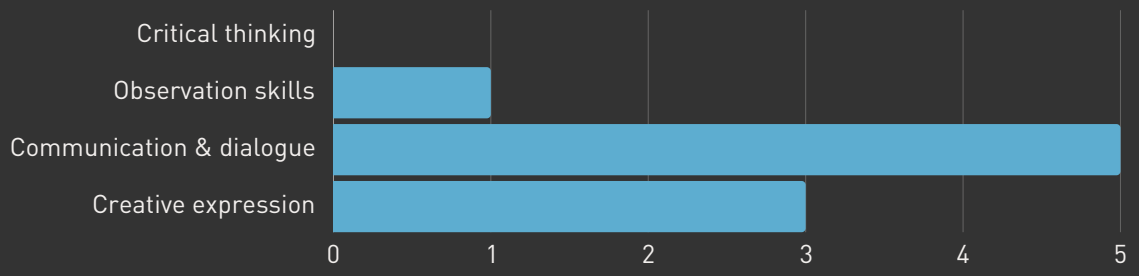
(1) Have students describe their first associations with the detail.

(2) Have students describe their first associations with the entire object (zoom out).

(3) Ask students what they think the object is.

(4) When using multiple objects: what do the objects have in common?

2. Expressing feelings



Description

With this method, you address the feelings, emotions and empathy of the student that an object can evoke. This mainly practices communication skills.

- This method is well suited to be used in combination with another method.
- The object can serve as a starting point for difficult topics of conversation.
- You ask questions that are tied to the emotions/empathy for the object.
- This method is well suited to be used for students of pedagogy, psychology, medicine, etc. where conversation techniques are important – and where students have to inquire after feelings in their future practice.

Sample assignments

Assignment 1:

1. Students interview each other in pairs
    a. Ask what your first first associations are with the object.
    b. Then ask about emotions and feelings. This could involve asking the following questions:
        i. What kind of feeling does this initially evoke?
        ii. How do you feel about that feeling being evoked?
        iii. Where does that feeling come from?
        iv. Etc.

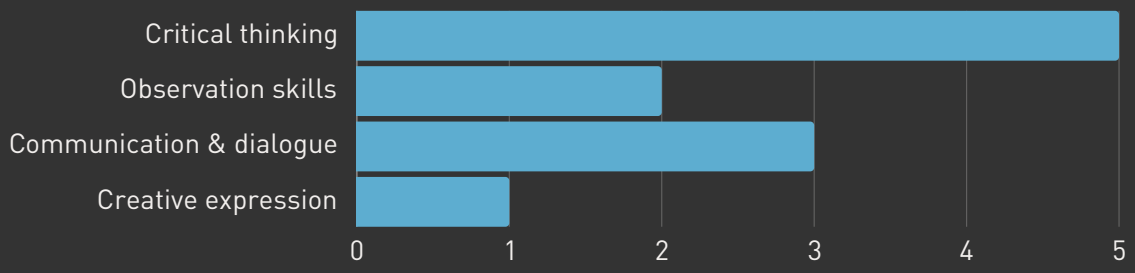
Assignment 2:

1. Ask students for their first association with the object. For a large group of students, you can have them work in groups of four. For a smaller group, you can sit in a U-shape so everyone can look at each other.
    a. Discuss the associations. If necessary, ask questions such as: how did you arrive at that association? What do you base your association on?
    b. Ask students the following question: what emotion does the object evoke in you? (Without knowing the context of the object).
    c. After this, provide context for the object.
    d. Ask the students: does the context change or impact your feelings?

Assignment 3:

1. Go to a museum or a room with different objects. You can also put your own objects in a room.
2. Have the students walk around the room so that they can take in the objects.
3. Let the students choose an object that "calls out" to them (or appeals to them).
4. Have students ask themselves the following question: what does the object evoke in you? Which aspect of it touches you? (This is really only about emotions - associations of the object are not considered)
    a. You can have students write down the answers to these questions in keywords or short sentences, or by drawing.
5. Students discuss their object and the answered questions in pairs. Each of the two students are given 15 minutes to discuss their thoughts/emotions associated with their object. The other student listens and may ask questions, such as: how do you feel about that emotion coming to you? Is there a particular detail of the object that touches you? Etc. Let students engage in the conversation with each other.
6. After this, you could go into what associations students have with their chosen object. And after that, ask whether their answers to the previously asked questions change based on the provided context.

3. Inquiry-based learning



Description

With this method, students are encouraged to explore and discover the object either together or independently. This approach focuses on discovering and exploring properties, relationships and connections. General research skills are further developed, and an inquisitive attitude is encouraged.

General steps that can be followed, based on the inquiry based learning cycle:

1. Confrontation: introduce the object
2. Exploration: have students look at the object and ask questions
3. Investigation: students engage with questions by doing research
4. Conclude: students bring their findings together
5. Presenting results: students process and present the conclusions
6. Deepening and broadening: the curator/teacher elaborates on the concepts

To encourage student interaction with the object, it helps to ask open-ended questions. You can choose how you want students to answer the questions - in a broad discussion led by the curator and/or teacher, in small groups or individually. You can also choose to have them write down the answers and elaborate further in an assignment.

Possible questions:

1. How would you describe the object to someone who cannot see it?
    a. What are its dimensions (height, weight, diameter)?
    b. Why is it this size?
    c. What materials were used to make it?

    a. Why were certain materials chosen?
    b. How accessible were these materials to the maker of the object?
    c. How was it created?
    d. How fragile or durable is the object?
2. Who do you think uses or has used the object?
3. Why do or did they use it?
4. Are there versions of this object that you have come across in your own life?
    a. What are their differences and similarities?
    b. If someone fifty, a hundred or five hundred years ago saw this object, what would they have thought of it?
5. For what reason(s) was the object made?
    a. Who made the object?
    b. What inspired the creator?
    c. Where was this object made?
    d. What types of symbols or ideas are represented?
    e. What is the function of any decoration?
6. What can we say based on this object about the person or people who use it or have used it? What does it tell us about the user and his or her culture?

Sample assignments

Assignment 1:

- Have students prepare a list of questions based on the list above and have students answer their own questions (independently or in groups, their own questions or different questions per group). Discuss the answers centrally.
    - Follow-up option: students can develop this further after the lesson in the form of an assignment, by conducting further research using secondary sources.

Case study

"A brain in your hands."

University lecturer in applied linguistics, Jing Lin, used 3D printed brains to bring linguistic processes in the brain to life. Using several case studies, students drew information processing pathways on the 3D print. Where does language enter? Which hemisphere processes it? And how does this work in people with an ear infection? Students answered these questions, among others, by drawing information processing pathways. Curious about what students thought of this method? Read it in the article we wrote about it.

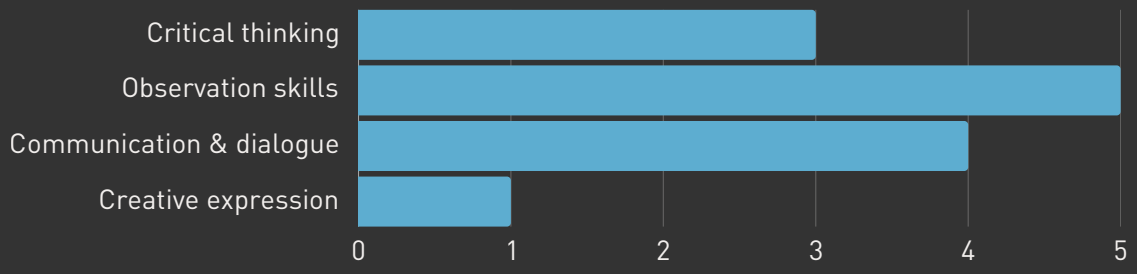
Assignment 2:

- Have students:
  - (1) First share what they know about the object, suspicions they have about the object and what they would like to know about it.
  - (2) Then take students through additional objects/information sources that tell more about the object (e.g. detailed steps of the object's production, information about the artist, what the images, symbols or text on the object mean, etc.).

Assignment 3:

- Follow-up questions historical context - Get students to thinkabout the broader historical context.
  - (1) What did you learn from this object that you might not have been able to learn anywhere else?
  - (2) What other documents or objects would you use to better understand the event or time period in which this object was used?

4. Close experience



Description

IIn this method, students are going to experience the object up close. This means not only looking, but also feeling, smelling and listening to the object. Central to this is that this is done without assumptions and/or interpretations. In this method, students can describe the object to each other, in pairs or groups, thus not only training their observation skills but also working on translating their observations, working on communication and dialogue.

Sample assignments

Assignment 1:

- Form groups of 3-4 students. Think of 10 adjectives or descriptive phrases about the object and write them down.
  - Compare these with those of your fellow students and discuss the similarities and differences.

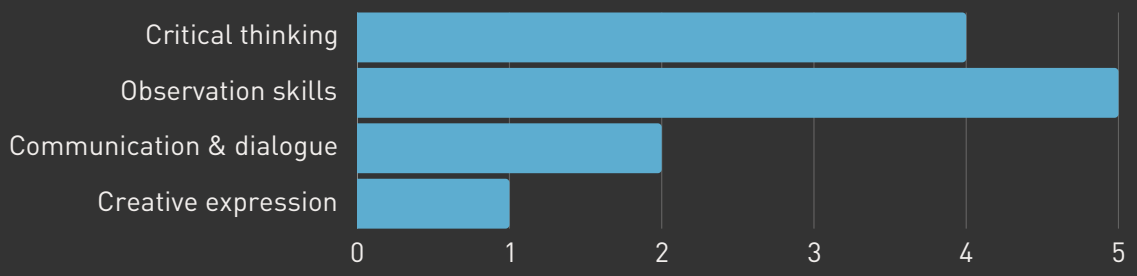
Assignment 2:

- Work in pairs. Set up the object so that one student can see it and the other cannot. Have one student describe the object to the other student.
- Things to think about: shape, colour, texture, size, weight, age, condition, moving parts or whatever is written on it.

Assignment 3:

1. Set up several objects in the room. Ask students to choose an object.
   a. Each student studies the object in silence for 5 minutes.
   b. After this, they have a choice of the following activities:
      i. Write a haiku about the object.
      ii. Sketch the object in 60 seconds.
      iii. Design a diagram/model describing the details of the object (e.g. name all the colours in this work, or highlight the direction of each line in a painting).
   c. Have students share their results and experiences with each other.

5. Comparing objects



Description

By having students compare objects with each other, they learn to look for details and nuances in objects and thereby become aware of the relationship between different objects and the relationship of objects with their environment and context. Through this, they develop awareness of cause-and-effect relationships, learn to make connections and think logically. They can later apply this to other situations outside the lecture hall.

Sample assignments

Assignment 1:

- Have students compare objects using criteria or questions. You can set these criteria or questions yourself (perhaps you want students to focus on specific differences?) or you can have students determine them.

Example: for architecture, for example, comparing dimensions or the materials.

Assignment 2:

- Have the students classify the objects based on, for example:
  - Timeline
  - Size
  - Enz.
- Have students explain why they classified the objects in this way to let them practise cause-effect and make connections between aspects of the object and the larger context.

Example: this object comes later in the timeline than that object because the former is made of stone and the latter of metal.

Assignment 3:

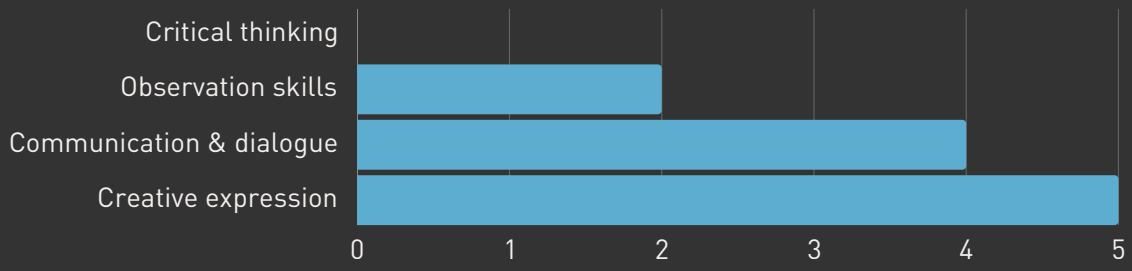
- Choose two objects made by two parties with different interests at heart. Have students list the differences between the two objects. Have students explain why these differences exist and where the differences might come from (due to the different interests, for example).

Assignment 4:

- Have students compare objects from the past with objects from the present. Discuss the differences and have students explain what the differences show about, for example, social changes over time.

Example: comparing the washing machine and an older laundry rack. Perhaps this tells us something about the role of women in society? That they are less and less present in the household, more at work and less time for washing by hand. Etc.

6. Storytelling



Description

OObjects are great catalysts for storytelling. Using artefacts in a story can create a strong connection between the listener and the time in which the story takes place. In addition, an object can also stimulate a student's creativity and help spark imagination. Below are some examples you can use to facilitate this.

Sample assignments

Assignment 1:

- Have students create a story around an object. This can be a made-up story or a historically accurate one.

You can ask (any of) the following questions:

- What associations do the objects evoke in you, what stories emerge?
- What adjectives can you use to bring the object to life in the story.
- Link your heritage object to a "sense of place". Describe how the object relates to its environment and what role the object plays in this environment.
- What role does the object play in social relations between people?

You can give the following guidance here:

- Zoom in on one detail of the object and take this as the starting point of your story. Connect to the bigger story from here. Start with a detail the audience is not expecting.
- Limit yourself to telling one story. Objects often contain many interesting aspects, but don't try to tell all the stories at once.
- Keep your story accessible to a large audience, so don't make it too scientific, use little jargon or mannerisms.

- Divide your story into steps and make sure each step offers a new perspective or depth.
- Put yourself in the shoes of the object and bring it to life by connecting it to the user/owner/etc.

Assignment 2:

- You can also use objects to have students tell stories about individuals or groups of people. In doing so, you could ask the following questions:
  - Which person or people used this object and for what?
  - What does the object say about these people?
  - What role does the object play in certain traditions and social rituals of the people?

Assignment 3:

- Practice creative writing. Give students assignments in which they use objects as:
  - A reason for certain action. For example, when people want to own it.
  - A bridge to a story (an object mentioned earlier returns later, thus connecting the story).
  - A revelation of a character's personality (trait).
  - To symbolise a feeling or wish.

Assignment 4:

- Have students give the object a character, creating a story around it:
  - This can be done using the list of questions on pages 21-22 in the following resource linked here.

Other case studies

1. “Tossing dog toys”

Students learned how different parts of the brain respond to seeing, hearing and naming by tossing a dog toy to each other. The teacher gave students several case studies in which students had to demonstrate the linguistic information process “through the brain”. They did this by tossing the dog toy over to different parts of the brain. The students themselves took roles of the brain. Want to know more about this? Read the article here!

2. First introductions

Ask students to choose an object from their surroundings that tells something about themselves, their background or their field. Sharing these objects provides an approachable start to a meeting and opening for introductions. It also encourages openness and interaction. In small groups, all students can briefly take turns to explain their chosen object. In larger groups, it is better to form groups of +/- 4 students, in which they present their objects to each other. This working form not only promotes acquaintance, but also creates space for personal stories and possible connections with a discipline.

Reference List

Chatterjee, H. J. (2007, January 1). Staying Essential: Articulating the Value of Object Based Learning. https://www.researchgate.net/publication/255589274_Staying_Essential_Articulating_the_Value_of_Object_Based_Learning

Dona, T. (2021, June). Immersive storytelling naar een next level met nieuwe stemmen en nieuwe plaatsen. MMNieuws. https://www.mmnieuws.nl/article/immersive-storytelling-naar-een-next-level-met-nieuwe-stemmen-en-nieuwe-plaatsen/

The Frick Pittsburgh (n.d.). Object-Based Learning. Retreived September 17, 2025 from https://www.thefrickpittsburgh.org/Files/Admin/website-images/Object-Based-Learning.pdf

Gonzáles, E. (2014, December 9). Storytelling with Simple Objects. Medium. https://medium.com/front-line-interaction-design/notebooks-164430ac5ce6

Juma, A. (2018, March 28). Zoom Out, Then Zoom In: How To Solve Problems and Make Decisions. Aly Juma. https://alyjuma.com/zoom/

Kador, T., & Chatterjee, H. (2020). Object-Based Learning and Well-Being (T. Kador & H. Chatterjee, Eds.). Routledge. https://doi.org/10.4324/9780429425868

Kraaij, D.A. (2015). Onderzoekend en ontwerpend leren. Retreived September 17, 2025 from https://www.wur.nl/nl/show/Onderzoekend-en-ontwerpend-leren-2.htm#:~:text=Onderzoekend%20leren%20is%20een%20werkvorm,te%20vinden%20op%20hun%20vragen

Making Comparisons. (2018). Let's Talk Science. https://letstalkscience.ca/educational-resources/teaching-stem/making-comparisons

National Archives (n.d.). Analyze an Artifact. Retrieved September 17, 2025, from https://www.archives.gov/files/education/lessons/document-analysis/english/analyze-an-artifact-intermediate.pdf

de Nil, B.(2018). Objectstorytelling Geeft Mensen Een Stem. FARO Vlaams Steunpunt Voor Cultureel Erfgoed Vzw. https://faro.be/blogs/bart-de-nil/objectstorytelling-geeft-mensen-een-stem

Parry, M. (2020). Getting to Grips with Difficult Histories in Medical Museums. In T. Kador, & H. Chatterjee (Eds.), *Object-Based Learning for Health and Wellbeing: Exploring Material Connections* (pp. 173-182). Routledge. https://doi.org/10.4324/9780429425868-11

Shaikh, M. (2023, February 7). Mental Model : Zoom In, Zoom Out. *Medium. https://medium.com/@moomal/problem-solving-zoom-in-zoom-out-2021de468bbf*

Pickering, L.-A., Batchelder, M., & Molson, K. (n.d.). *The secret life of objects* https://hwb.gov.wales/api/storage/019122c5-f39a-44d6-900b-1aad43896a0e/ArtSEdNetwork_The%20Secret%20Life%20of%20Objects%20English.pdf

Storm, T. D. (2018, December 14). How to Use Objects to Create More Powerful Stories. *Storm Writing School.* https://www.stormwritingschool.com/objects-in-fiction/

Living Museums. (2022). *Storytelling through Objects.* https://www.dreamingmuseums.com/storytelling-through-objects

Straughn-Navarro, R. M. (2020 3). Thinking about Object-based Teaching and Learning. *TPS Collective.* https://tpscollective.org/notes-from-the-field/thinking-about-object-based-teaching-and-learning/

TED (2019, December 13). *Objects & Storytelling | Tom Weis* [Video]. *YouTube.* https://www.youtube.com/watch?v=e0xQH7ZE8hEE

Utah Museum of Fine arts (2014) *Understanding the objects: looking at objects and questioning.* https://umfa.utah.edu/sites/default/files/2017-07/teaching%20with%20objects.pdf

Wannaroo Regional Museum (n.d.). *Comparing objects in the home past and present.* Retrieved September 17, 2025, from https://www.wanneroo.wa.gov.au/download/downloads/id/3783/comparing_past_and_present_objects_in_the_home_%E2%80%93_

Woodward, S., Sheehan, J., & Hanbury, A. (2023) Storytelling Toolkit: Methods using Objects. *NCRM*. https://www.ncrm.ac.uk/resources/online/all/?main&id=20794