

Basic social science literacy and material culture

Bernd Wagner

Full Professor of Primary Didactics – Social Sciences at Leipzig University, Germany
bernd.wagner@uni-leipzig.de

Introduction

In 1972, the Club of Rome warned about the limits to growth, which, from the current perspective in 2022, can lead to various catastrophes. Unfortunately, these scientifically based prophecies are very likely to come true in daily life, also in Italy and Germany. This means in terms of education, that it is not just about imparting knowledge about the causes of disasters and fighting them, but also about finding ways of dealing with them, their lasting consequences, and having ideas for a common future. Even though the UN Decade of Education for Sustainable Development has given schools a key role to foster a more sustainable future, further steps are needed, especially in Europe and the countries of the Global North. In schools, this includes talking to children about the occurring multiple crises and their consequences as well as social changes. Children will be particularly affected by future crises. Crises related content is usually taught as part of state curricula in social science classes in elementary schools. In Italy and Germany, national pedagogical approaches have been developed for this purpose, but their impact on the other school system or teacher training has hardly been discussed. In Germany, the cross-cutting school tasks of political education and education for sustainable development as well as multi-perspectivity in science lessons are important (Pech & Rauterberg 2008; Pech, 2009); in Italy active citizenship (Corradini, 2019). It is also questionable whether the current efforts to deal with the climate crisis are more than just social calming measures to disguise that not much is being done to change. This article thematizes that actively dealing with crisis and not avoiding catastrophes means having visions for the future. In the following, an empirically based pedagogical approach is presented on how these visions can be developed with children in intergenerational dialogues with so-called “boundary objects” (Star & Griesemer, 1989), collection objects that evoke different meanings and are an adequate medium for discourses about time and future.

As an empirical example of how intergenerational dialogue about futures can be developed by state institutions within the framework of school-collection partnerships, a research project is presented: *Education and Objects. Historical material learning processes in school-related collections*, funded by the German Research Foundation DFG. The project has been running since 2022 in cooperation with two school-related collections and 10 participating school classes/groups in Italy (Fondo Pizzigoni, Università Roma Tre) and also 10 in Germany (Schulmuseum Leipzig - Werkstatt für Schulgeschichte, Leipzig). The appreciation of cultural heritage and the didactic elaboration of the extensive research on material culture in the social sciences are addressed by the videoethnographic research. The video data are interpreted based on Grounded Theory (Corbin & Strauss, 1996). In the following, perspectives are shown on how this can lead to developing visions of futures with children. First, a short insight into research on learning with collection objects is provided, then perspectives for didactics on intergenerational discourses fostered by cultural heritage are elaborated. The article concludes with empirically based ideas for developing visions for the future with children through material culture in the extensive national collections preserved in Italy and Germany.

1. Children and Collection Objects

Previous research on object-based learning with collection objects gives indications of didactic potentials. They show that children have strategies at their disposal to make unfamiliar objects subjectively available and to attach meanings to them that are available or invented in relation to their lifeworlds. Hans Peter Hahn's (2020) concept of the "Eigensinn der Dinge" (obstinacy of things) is useful for the teaching of science and its didactics, because it not only looks at individual things, but also questions why people are so "sure" of their material environment. Hahn describes the material environment not as a fixed entity, but as an assemblage of things in different combinations. For these "assemblages" different assignments of meaning are necessary. In these arrangements and disarrangements, things can also simply be ignored and forgotten, which precisely emphasizes the subjective scope for shaping the attributions of meaning to objects. Accordingly, subjective perceptions and aesthetically based imaginations are important, i. e. knowing and being able to assign possible meanings. This aspect is largely ignored in Bruno Latour's actor-network theory in favor of the objects as actants.

However, in the sense of Sachunterricht and its didactics¹, which refer to childhood research², these subjective approaches are more connectable and can also strengthen further cooperation with the social science reference disciplines. In addition, Peter Hahn points out that objects do not have to be overly idealized but are sometimes also characterized by casualness in everyday life, i.e. when there are many objects, some are often ignored and not always admired. The exclusive orientation towards the demands of use of objects is also too one-sided. The concept of “affordance” (Norman, 1999) offers in a didactically more productive direction, a notion of the call to action and use that is strongly associated with the design of objects. To develop this concept further in pedagogical terms would mean to emphasize the impulses for action and the call to self-activity in the context of an affordance of objects. This is not necessarily so, because the previous video-ethnographic research results indicate that children do not identify objects individually but include them in object worlds that are close to their life worlds and establish performative interactions making unfamiliar objects familiar to them. For example, in the school museum of Leipzig children interpret a historical leather shoulder bag for school meals in contrast to today’s plastic breakfast boxes and try to deduce from the shape what it might have contained (Keidel, Wagner & Zehbe 2023a, 00:28:30 – 00:29:38)³. In this debate, historical objects are discussed from a contemporary perspective, in particular historical changes in forms of production, especially plastic production. This also relates to the future, to a world in which plastic waste cannot be disposed of. At the centre of another contact zone⁴ is the collection object “Der Kleine Schwede”, a miniature building set in matchbox format with seven wooden building blocks. From a historical perspective, it tells of the emergence of a new type of serial material. It was also used in Leipzig schools in the 1920s and is still in production today. The contact zone around “Der kleine Schwede” is embedded in an urban setting in which the pupils explore historical didactic

-
1. “Sachunterricht and its didactics” is the scientific discipline combined with the German primary school subject “Sachunterricht”, that contains basic science literacy for children. Also, multi-perspective and networked thinking are substantial for this didactic discipline.
 2. Childhood research in Germany includes a broad empirical field on children’s living environments and describes childhood as a phase of life with its own needs and forms of expression.
 3. The corpus of material, consisting of video sequences, is attached to the bibliography.
 4. The term “contact zone” was originally used by Marie Louise Pratt in 1991 in a decolonial discourse. James Clifford (1997) made the term fruitful for museums, so that “contact zones” describe a space where fundamentally asymmetrical positions meet each other and relationships can be negotiated, for example between children and adults, but also between the past and the present or between children and objects. Such negotiations can give rise to new relationships and perspectives that can promote historical learning.

material on the one hand and design their own constructions on the other. After viewing a 100-year-old original in a display case, the children work in groups to try out enlarged replicas of “Der Kleine Schwede”. The results of the group work are reflected upon after the construction phase. The pupils express interesting thoughts regarding the historical continuity, i. e. that this miniature construction set has been produced since 1908. One pupil emphasises that the old collection object is valuable and sensitive due to its historicity. “That is why replicas are needed so that they can be touched.” (Keidel, Wagner & Zehbe 2023a, 00:07:21ff). Others associate the old original version with collecting and the new replicas with current practical use. When the pupils receive the enlarged replicas, they become active very quickly. The activities are accompanied by numerous conversations and other groups are also observed, e. g. to get ideas from them. During the discussions, the children agree on possible structures and strategies such as “stacking” or “pushing together” to realise their ideas with the special building blocks.

The contact zone around the collection object “Der kleine Schwede” with the enlarged building blocks is not only embedded in an urban setting. The museum space we have designed shows the tension between city and nature in the so-called Weimar period of the 1920s. In several European countries, this tension was addressed, for example, by increasingly holding school outdoors and taking all the props, including the blackboard and school desks, with them. This encourages the primary school children involved to have intensive discussions and make references to today (Keidel, Wagner & Zehbe 2023a, 00:04:40 – 00:05:25). Historical change is thematised, which also includes ideas on how we can live together in the future. So it would be possible to discuss, in addition to the philosophical question of the relationship between nature and culture, global warming and urban sealing, for example how planting can be used to cool urban spaces, which relates to transgenerational, future-related aspects.

The subjective processes of appropriation are body-related but can also be accompanied by speech. In this context, dealing with material culture develops different skills than dealing with digital images or tools. While the digital requires more one-sided adaptation to processes and only allows for limited creative or not so varied possible solutions, at least in the case of programming or “coding” activities, the inclusion of material culture creates creative scope. However, this is insufficiently considered if objects are only shown individually and classified with one-sided labelling exercises. For then only categories of a prefabricated world, ordered by adults, are reproduced, which determine an instructional discussion of objects. The “obstinacy of things” also brings to light opposing perspectives, for example on historical change or political participation, and in a didactic sense is not only a possibility to stimulate attributions of meaning in and outside school, but also

to exchange (intergenerationally) about them. In addition to the discursive opening of representations of the material world, reflections on the multi-perspectival views on things can contribute further focal points for a didactic theory of learning with objects. The research results from the reference disciplines encourage us to describe the didactic principle of activation (Marton & Säljö, 1997) in more detail and to formulate it further for material learning processes. They contribute to the fact that objects can lead to impulses for action and activation. To this end, not unknown but slightly unfamiliar objects have already been highlighted as particularly attractive. In the sense of the “obstinacy of things”, it is about the perceptual surplus of things. What do these “evoke” in children of different ages or how can these “evocations” arise and be discussed in material learning processes? One example from the current research project on school-related collections is the interaction of 9–11-year-old children with an enlarged replica of a pinhole camera in a contact zone with collection objects from the Weimar period in the Leipzig School Museum. The pupils want to try out the replica pinhole camera and test how it works, attempt to focus an image and recognise the reverse image (Keidel, Wagner & Zehbe, 2023a, 00:05:00 ff.). The replica leads to cooperative testing situations in which the camera is carried around the room. In addition, it could be observed how moving objects invite children to demonstrate their own abilities or to follow their movement ideas. In another contact zone in the Leipzig School Museum, moving gymnastic figures have been created inspired by ideas and practices of gymnastics and outdoor school in the 1920s.



Fig. 1 - Keidel, K. (2023). *Wooden Figures by Mady Piesold for a contact zone in Schulmuseum. Werkstatt für Schulgeschichte Leipzig* [Photograph]. Leipzig.

In the video sequences it can be reconstructed that the participating children try, without being asked, to recreate/imitate the positions they have built with the wooden figures also with their own bodies. This leads, for example, to trying to put one leg on another child's shoulder, doing the splits and trying out other movements (Keidel, Wagner & Zehbe, 2023b, 00:06:30–00:07:50). Moreover, provided historical photos encouraged children to create a contrasting lifeworld context. In addition, spontaneous discussions take place; one group of children, for example, philosophised for minutes on the historical photos about “school outside” in their school, which did not require any moderation. The little insights into the extensive data material of the current research project show that unusual objects lead to testing situations.

As in the case of the pinhole camera, the general use is estimated but exact modes of operation are unknown. Furthermore, objects that stimulate forms of movement that can be mimetically imitated in the children's group arouse interest. Objects that are contrastingly related to one's own life world also provoke interactions.



Fig. 2 - Keidel, K. (2023). *Children and wooden Figures in Schulmuseum* [Videostill]. Leipzig.

The selected objects are activating for the 9 to 11-year-old primary school children because they do not provide self-explanatory one-dimensional solutions but require additional experimentation, and different attributions of meaning are possible (König & Wagner 2023; Wagner, 2021). These activating collection objects in contact zones support learning processes and can contribute to further didactic research on material culture.

2. Perspectives for didactics on cultural heritage

The research conducted so far in the two school-related collections provides indications of how and which collection objects in contact zones activate 9 to 11-year-old children, and points to their didactic potential. The indications support the thesis that media access, such as the digitized objects of the collections, can be used in a supportive way, e. g. in the follow-up to visits to the collections, but they do not replace the self-activating forms of engagement with the “multi-perspective nature” of the material. The interactions with multi-perspective collection objects represent a basic anthropological prerequisite that can be further developed in school as an important cultural technique and, in a German didactic sense, can serve the personal development of primary and pre-school children (Klafki, 1967; Ducker & Kremling, 2010; Duncker, 2002). A first step towards this would be to show the storage rooms of collections, which are extensively financed in many countries, not only as display depots in exhibitions, but also to open them up for children. Further investigation is needed on so called boundary-objects that are particularly suitable for stimulating an intergenerational dialogue. The possible meanings of objects in the diverse collection spaces offer occasions for discussion, e. g. on the topic of futures, on what kind of meanings, performative interactions and ideas can be developed together.

Since the objects give indications of multi-perspectivity without first having to be applied to a topic, they are suitable as learning material and teaching objects. At the same time, in addition to the material dimensions, they refer to immaterial dimensions of meaning, to which children can establish performative access and which can be worked on more intensively, for example in the form of philosophising with children (Krösche 2020, Brill et al., 2017). The didactic questions of how confrontations with material culture can establish connections to immaterial cultural heritage will have to be further investigated. The aim is not to convey certain ideas and interpretations, but rather to design cultural education as an imaginative space that can be shaped. In this space, for example, narratives that are effective in intergenerational relationships can be considered critically and examined regarding the question of how we want to live in the world and shape futures. A multi-perspectival approach to cultural material and immaterial heritage then serves a greater independence and imaginative capacity in shaping the world with the participation of children. Irritating, but not completely unfamiliar objects encourage performative experimentation in their variety of meanings. These boundary objects bring children into contact with each other and encourage them to engage in discussions about a world which can be shaped. This can be used to facilitate transgenerational exchange in collections through boundary objects. This exchange should not only look back

in history at the school 100 years ago, but also include what has remained of the fundamental reform ideas today and how the future can be shaped with the involvement of children. To summarise, we can conclude that there is empirical evidence of how boundary objects can be used didactically with children. This plays a particularly key role in preparing and following-up lessons for museums and collections visits that can be used as part of inter-generational discourses.

3. Developing visions for futures with children

Current global crises are often addressed based on ‘sustainability’ (World Commission on Environment and Development, 1987; UNESCO, 2005) or ‘resilience’ (Werner & Smith, 1971; Ricci & Maggi, 2022) in national curricula for primary education. These originally scientific terms promise technical and social controllability of crises (von Herrmann, 2018), which do not do justice to the complexity of the world (Ceruti 2014). If the concepts are also charged up by society with utopian ideals, they shift present social risks into the future and thus hide them (Koselleck, 1973). This can lead to “obstacles to knowledge” (Bachelard, 1978), because the risks themselves often arise from basic cultural assumptions about the way of life and coexistence which are not further questioned in the present (Bolz, 2004). Children are particularly affected by this in their present and future lives. Regarding the crises and their own future in society and the world, children must thus take responsibility for conditions that they did not cause. This requires a dialogue with the adults who cannot fulfill their task to handing over a livable planet. This article provides examples of school-museum partnerships that mediate in these conflicts. Furthermore, it is an approach to cultural education in the sense of a critical examination of material heritage, for which children already have basic anthropological prerequisites. The previous results of a research which is oriented towards both childhood research and didactics of material culture point to potentials for coping strategies with the manifold social crises. A pedagogical approach to the impending catastrophic scenarios requires pointing out possibilities for living in them and acting within them. The current way of dealing with disasters that have already occurred does not tend to strengthen the sense of self-efficacy of adults and children. Social science research shows that not only a reaction to crises, but also visions of the future are necessary to develop sustainable concepts. Designing these together with children, through intergenerational dialog inspired by boundary-collection objects in the extensive collections conserved by Italy and Germany, is a social task.

Bibliography

- Bachelard, G. (1978). *Die Bildung des wissenschaftlichen Geistes: Beitrag zu einer Psychoanalyse der objektiven Erkenntnis*. Suhrkamp.
- Bolz, N. (2004). *Blindflug mit Zuschauer*. Fink.
- Brill, S., May-Krämer, S., Nießeler, A., & Wagner, B. (2017). Technische und ästhetisch Sachlernprozesse im Museum als Ausgangspunkt kultureller Bildung für Grundschul Kinder. In G. Weiß (Ed.), *Kulturelle Bildung. Bildende Kultur* (pp. 197-210). Transcript.
- Ceruti, M. (2014). *La fine dell'onniscienza* (The End of Omniscience). Studium.
- Club of Rome (Rd.). (2022). *Earth for All. Ein Survivalguide für unseren Planeten*. Oekom.
- Clifford, J. (1997). Museums as Contact Zones. In J. Clifford, *Routes: travel and translation in the late twentieth century* (pp. 188-219). Harvard University Press.
- Corbin, J., & Strauss, A. (1996). *Grounded Theory. Grundlagen qualitativer Sozialforschung*. Beltz PVU.
- Corradini, L., & Mari, G. (2019). *Educazione alla cittadinanza e insegnamento della Costituzione*. Vita e Pensiero.
- Duncker, L. (2002). Methodisches Lernen im Sammeln und Ordnen. In M. Hempel (Ed.), *Lernwege der Kinder. Subjektorientiertes Lernen und Lehren in der Grundschule. Baltmannsweiler* (pp. 76-93). Schneider.
- Duncker, L., & Kremling, C. (2010). Sammeln als Form frühkindlicher Weltaneignung explorative Beobachtungen und Befragungen von Vorschulkindern. In H.-J. Fischer, P. Gansen & K. Michalik (Eds.), *Sachunterricht und frühe Bildung* (pp. 53-65). Klinkhardt.
- Hahn, H. P. (2020). Der Eigensinn der Dinge – Einleitung. In Ders. (Eds.), *Vom Eigensinn der Dinge. Für eine neue Perspektive auf die Welt des Materiellen* (5. Aufl.) (pp. 9-56). Neofelis.
- Hahn, H. P. (2016). Die Unsichtbarkeit der Dinge. Über zwei Perspektiven zu materieller Kultur in den Humanities. In H. Kalthoff, T. Cress, & T. Röhl (Eds.), *Materialität. Herausforderungen für die Sozial- und Kulturwissenschaften* (pp. 45-62). Fink.
- Hauff, V. (Ed.) (1987). *Unsere gemeinsame Zukunft : der Brundtland-Bericht der Weltkommission für Umwelt und Entwicklung*. 1. Auflage. Eggenkamp.
- Herrmann, von F. (2018). *Language and Thinking in a Post-Metaphysical Age: Plato, Aristotle, Husserl, and the Unthought Question of Ethics and Politics*. Duncker und Humboldt.
- Keidel, K, Wagner, B., & Zehbe, K.-Chr. (2023a, April 19). Videography [Unpublished raw video data]. Leipzig University.
- Keidel, K, Wagner, B., & Zehbe, K.-Chr. (2023b, June 16). Videography [Unpublished raw video data]. Leipzig University.

- König, P., & Wagner, B. (2023). Bildungspotentiale materieller Kultur in Sachlernprozessen. *Widerstreit Sachunterricht* 27. <http://dx.doi.org/10.25673/101598>
- Krösche, H. (2020). Die Bedeutung von Dingen der materiellen Kultur für das frühe Historische Lernen. In S. Barsch, & J. van Norden (Eds.), *Historisches Lernen und Materielle Kultur. Von Dingen und Objekten in der Geschichtsdidaktik* (pp. 127–136). Transcript.
- Klafki, W. (1967). *Studien zur Bildungstheorie und Didaktik*. Beltz.
- Kosellek, R. (1973). *Kritik und Krise. Eine Studie zur Pathogenese der bürgerlichen Welt*. Suhrkamp.
- Latour, B. (2007). *Eine neue Soziologie für eine neue Gesellschaft. Einführung in die AkteurNetzwerk-Theorie*. Suhrkamp.
- Marton, F., & Säljö, R. (1997). Approaches to learning. In F. Marton, D. Hounsell, & N. J. Entwistle (Eds.), *The Experience of Learning*. Edinburgh (pp. 39-58). Scottish Academic Press.
- Norman, D. A. (1999). Affordance, Conventions, and Design. *Interactions*, 6 (3), 38– 42.
- Pech, D., & Rauterberg, E. (2008). Auf den Umgang kommt es an. „Umgangswesen“ als Ausgangspunkt einer Strukturierung des Sachunterrichts. Skizze der Entwicklung eines „Bildungsrahmens Sachlernen“. *Widerstreit Sachunterricht*. Beiheft 19. <http://dx.doi.org/10.25673/92557>
- Pech, D. (2009). Sachunterricht – Didaktik und Disziplin. Annäherungen an ein Sachlernverständnis im Kontext der Fachentwicklung des Sachunterrichts und seiner Didaktik. *Widerstreit Sachunterricht*, 13. <http://dx.doi.org/10.25673/92413>
- Pratt, M. L. (1991). Arts of the Contact Zone. *Profession*, 99, 33–40.
- Ricci, A., & Maggi, M. (2022). *Educazione emozionale: Strategie e strumenti operativi per promuovere lo sviluppo delle competenze emotive a scuola e in famiglia*. FrancoAngeli.
- Star, S., & Griesemer, J. (1989). Institutional Ecology, ‘Translations’ and Boundary Objects: Amateurs and Professionals in Berkeley’s Museum of Vertebrate Zoology, 1907–39. *Social Studies of Science*, 4 (19), 387-420.
- UNESCO (2005). Website der Deutschen UNESCO-Kommission e.V.
- Wagner, B. (2021). *Kulturelle Bildung im Museum: Sprachhandeln in Lernumgebungen zu Sammlungsobjekten*. In A. Scheunpflug, C. Wulf, & I. Züchner (Eds.), *Kulturelle Bildung* (pp. 83–104). Edition ZfE 12. Springer VS.
- Werner, E., & Smith, R. (1971). *The children of Kauai: A Longitudinal Study from the Prenatal Period to Age ten*. University of Hawaii Press.