

TOWARDS HISTORY EDUCATION FOR THE EPOCH  
OF ANTHROPOCENE

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The purpose of this study is to delineate the structure and critically assess the ongoing scholarly debate concerning the transformation of history education in response to the challenges of the Anthropocene, as well as to identify directions for future research in the field. The analysis concentrates on the specific types of challenges associated with the Anthropocene that individual studies articulate and the solutions they propose. The study identifies and examines three thematic clusters: *The Anthropocene as a Paradigm Shift*, *Particular Dimensions of the Anthropocene*, and *Educational Practice*. The principal findings highlight challenges such as addressing altered conceptions of temporality, confronting the legacies of colonialism, and integrating Indigenous perspectives. Furthermore, the literature reflects a debate on the extent to which established concepts of historical thinking remain valid under the conditions of the Anthropocene. Regarding future research, the study emphasises the importance of collaboration with the field of climate change education and the advancement of empirical studies on pupils' and students' historical consciousness. The conclusions are set in the context of East-Central Europe.

**Keywords:** Anthropocene; History Education; Historical Thinking; Climate Change Education; Environmental Education;

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Cieľom tejto štúdie je vymedziť štruktúru a kriticky posúdiť prebiehajúcu vedeckú diskusiu o transformácii výučby dejepisu v reakcii na výzvy antropocénu, ako aj identifikovať smery budúceho výskumu v tejto oblasti. Analýza sa zameriava na konkrétne typy výziev spojených s antropocénom, ktoré jednotlivé štúdie formulujú, a na riešenia, ktoré navrhujú. Štúdia identifikuje a skúma tri tematické skupiny: *Antropocén ako paradigmový zlom*, *konkrétne dimenzie antropocénu a pedagogická prax*. Hlavné zistenia poukazujú na výzvy, ako je riešenie zmenených predstáv o časovosti, konfrontácia s dedičstvom kolonializmu a integrácia pohľadov domorodého obyvateľstva. Literatúra ďalej odráža diskusiu o tom, do akej miery zostávajú zavedené koncepcie historického myslenia platné v podmienkach antropocénu. Pokiaľ ide o budúci výskum, prehľad zdôrazňuje dôležitosť spolupráce s oblasťou vzdelávania o zmene klímy a rozvoj empirických štúdií o historickom vedomí žiakov a študentov. Závery sú uvedené v kontexte východnej a strednej Európy.

**Klíčové slová:** antropocén; výučba dejepisu; historické myslenie; výučba o zmene klímy; environmentálne vzdelávanie;

### **Towards History Education for the Epoch of Anthropocene: A Literature Review**

On a global scale, constructivist approaches, concentrated under the umbrella term of historical thinking, prevail in the pedagogy of historical education.<sup>1</sup> These approaches established themselves on the one hand on the basis of empirical research in school settings, and on the other hand grew out of contact with historiography that focused on narrativist critiques, coming to terms with the tragedy of the Holocaust and critical investigations of colonialism.<sup>2</sup> The German tradition of history pedagogy and historiography of contemporary history also played an important role here, especially in relation to national socialist and socialist dictatorships and research on historical consciousness.<sup>3</sup> From a Central European perspective – which is also the place from which I am writing this text – individual scholars or teams transferred the concept of historical thinking to their own national conditions.<sup>4</sup>

While this consensus was being shaped, disseminated, and tested in practice, the surrounding situation changed. The concept of the Anthropocene entered the scene at the beginning of the new millennium.<sup>5</sup> The Anthropocene not only brought an emphasis on new themes, but above all made it possible to name epistemological challenges beyond the existing modern and postmodern paradigms.<sup>6</sup> To the questions of the relationship between human and nature, knowledge and power, the relationship between the past, present, and future, the existing answers became no longer sufficient. Like other disciplines, historical scholarship has begun to absorb and respond to the notion of the Anthropocene from its own disciplinary perspective.

The following text summarises and critically evaluates the literature reflecting on the Anthropocene from the perspective of historical education. As an early career historian and scholar in history education, as well as an author of educational materials, I feel the need to create conditions for the emergence of historical education for the era of the

<sup>1</sup> This publication was supported by the Cooperatio Program provided by Charles University, research area History, implemented at the Faculty of Arts of Charles University.; LÉVESQUE, Stéphane – CLARK, Penney. Historical Thinking. In *The Wiley International Handbook of History Teaching and Learning*. John Wiley & Sons 2018; SEIXAS, Peter. *The big six: historical thinking concepts*. Toronto 2013.

<sup>2</sup> LÉVESQUE, Stéphane – CLARK, Penney. Historical Thinking [online] [cit. 12.08.2024]. DOI: 10.1002/9781119100812.ch5.

<sup>3</sup> KÖRBER, Andreas. German History Didactics: From Historical Consciousness to Historical Competencies – and Beyond? In *Historicizing the Uses of the Past: Scandinavian Perspectives on History Culture, Historical Consciousness, and Didactics of History Relat. to World War II*. Transcript-Verlag, 2014.

<sup>4</sup> BOJKOVÁ, Alžbeta – JANČURA, Mikuláš. *Dejiny tvoríš ty!: história - škola - verejný priestor*. Košice 2019; BURES, Miroslav et al. An Innovative E-Learning Support for Modern History Distance Learning and the Experience during the COVID-19 Lockdown. In *Sustainability*, 2022, vol. 14, issue 6.; ČINÁTL, Kamil – NAJBERT, Jaroslav – RIPKA, Vojtěch. Historická gramotnost v aplikaci HistoryLab: realistický přístup k osvojování didaktické teorie dějepisu. In *Historie - Otázky – Problémy*, 2021, vol 13, issue 2; WOJDON, Joanna. Between Public History and History Education. In DEAN, David. (ed.). *A Companion to Public History*. Wiley 2018.

<sup>5</sup> CRUTZEN, Paul J. Geology of mankind. In *Nature*, 2002, vol. 415, issue. 6867.

<sup>6</sup> KUHN, Thomas S. *The structure of scientific revolutions*. Chicago 2009.

Anthropocene. The reason for this is the awareness that this very concept expresses and encompasses under one roof the greatest challenges of our time.

If historical education is to remain relevant, then the discussion of the implications of the Anthropocene must also be conducted in this field. A review of the literature can be a useful step in this direction. For the purposes of this text, I understand the Anthropocene very broadly, as originally defined as “human-dominated geological epoch” by Paul Crutzen and transferred to the historical scholarship by Dipesh Chakrabarty and others.<sup>7</sup>

I do not connect the Anthropocene with any exact dating, because it is still the subject of debate. The Anthropocene Working Group has proposed a mid-20th century start based on the Great Acceleration and stratigraphic markers like radionuclides and technofossils, but these proposals remain unratified by the International Commission on Stratigraphy. Some scholars criticise this approach, arguing for earlier beginnings (e.g., agriculture, earlier industrialisation) or for viewing the Anthropocene as a diachronic event rather than a discrete epoch. Others focus on the limits of the stratigraphic model and suggest conceptual framing beyond strict geological boundaries — emphasising ongoing human-environment processes rather than a fixed start date.<sup>8</sup>

I understand Anthropocene as a conceptual innovation, which is useful to capture the new situation of mankind. The key features of the Anthropocene in relation to history education are thus thinking in different time-scales, taking into account non-human actors and rethinking the relations between past, present and future. The Anthropocene also presents an opportunity for closer collaboration between the humanities and the sciences. This could lead to using different topics, sources, tasks and educational settings in the educational practice.

In the corpus of results under study, I am interested in the following elements. For all texts, I consider how they engage with the concept of the Anthropocene, specifically the features and manifestations of the Anthropocene they emphasise. The main focus is on the challenges or problems the authors associate with historical education in the Anthropocene era and what solutions they propose. This category is key to the clustering of the texts and formulating key findings and future research options.

### **Researched texts: selection and clustering**

Texts to be included in the corpus must meet the focus on the subject of historical education and the Anthropocene. Although I am aware that the Anthropocene is not just climate change, for the purposes of the search, I have also used the terms: climate change, climate crisis, environmental history and climate change education in combination with the terms: history education, history pedagogy and history didactics. The reason is the fo-

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<sup>7</sup> BONNEUIL, Christophe – FRESSOZ, Jean-Baptiste – FERNBACH, David. The shock of the Anthropocene: the earth, history, and us. London and New York 2016; LATOUR, Bruno. Agency at the Time of the Anthropocene. In *New Literary History*, 2014, vol. 45, issue. 1.; CHAKRABARTY, Dipesh. The Climate of History: Four Theses. In *Critical Inquiry*, 2009, vol. 35, issue 2.; CRUTZEN, Geology of mankind.

<sup>8</sup> CONVERSI, Daniele. The Anthropocene and Its Contenders: Cross-Disciplinary Tools for a Nationally Divided Humanity. In *Earth's Future*, 2025, vol. 13, issue 7.; EDGEWORTH, Matthew et al. The Anthropocene Is More Than a Time Interval. In *Earth's Future*, 2024, vol. 12, issue 7.; SVENNING, Jens-Christian et al. Defining the Anthropocene as a geological epoch captures human impacts' triphasic nature to empower science and action. In *One Earth*, 2024, vol. 7, issue 10.

cus of this text on education rather than on the details of the theoretical debate about the possibilities and limits of the term Anthropocene.

My primary focus is on academic articles in English published between the year 2020 and the middle of 2025. Texts must focus on formal education in primary and secondary schools. The focus on these levels of education is based on the assumption that historical thinking concepts were developed and are applied to both levels in many countries. It is irrelevant to the inclusion of the texts what sub-topic they focus on: whether they deal with curriculum revision, methods, or ways of teaching a particular topic, or empirical research.

In the first step, I researched the Web of Science and Scopus databases.<sup>9</sup> The results are a total of 86 articles (WoS n = 14; Scopus n = 72). Since many discussions in the field of historical education take place in periodicals that are not indexed in WoS and SCOPUS, I supplement my research with Google Scholar (n = 65). Overall, the query brings 151 records in total, after removing duplicates (n = 15), 136 texts remain.

Data was collected and selected using a systematic research method, following the PRISMA 2020 Guidelines.<sup>10</sup> PRISMA is the accepted standard for presenting evidence in systematic reviews and meta-analyses, first established in 2009. The screening process is presented in the Prisma chart (Table 1) and documented in the dataset.<sup>11</sup> Besides the formal criteria (year of publication, form, language), the most numerous reason for exclusion is reason 4, 'different main topic.' These articles usually mention history education or Anthropocene, but only marginally. This category also includes texts on higher education, but this is a separate discussion that is beyond the scope of this text. Texts labelled as 'missing Anthropocene' (Reason 2) are most often publications in the field of history didactics, which, however, did not address the changes associated with the advent of the Anthropocene. On the other hand, the reason labelled as "missing historical thinking concepts" (Reason 3) typically includes theoretical or historiographical texts devoted solely to the concept of the Anthropocene, without any connection to education.

The limitations of this procedure are as follows. First, the result connects the articles from different national contexts and school systems. The history education is thus present in different contexts. This is solved by the focus on the historical thinking concept, which is the primary criterion for the selection and connects all the results. Second, there is a limitation to the English language. The reason for this choice is to capture the debate on an international scale.

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<sup>9</sup> The Boolean research queries for particular databases are following:

WoS: TS=(„anthropocene“ OR „climate change“ OR „climate crisis“ OR „environmental history“ OR „climate education“) AND TS=(„history education“ OR „history pedagogy“ OR „history didactics“)

Scopus: TITLE-ABS-KEY(„anthropocene“ OR „climate change“ OR „climate crisis“ OR „environmental history“ OR „climate education“ OR „history didactics“) AND TITLE-ABS-KEY(„history education“ OR „history pedagogy“ OR „history didactics“).

<sup>10</sup> PAGE, Matthew J. et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. In *BMJ* [online]. 2021, vol. 372. DOI: 10.1136/bmj.n71

<sup>11</sup> SIXTA, Václav. (2026). Documentation of a systematic literature review dealing with the relationship between the Anthropocene and history education, especially historical thinking concepts. [Dataset]. Zenodo. <https://doi.org/10.5281/zenodo.18151903>

Identification	Records identified from: Web of Science (n = 14) Scopus (n = 72) Google Scholar (n = 65)	Records removed <i>before screening</i> : Duplicate records removed (n = 15)
Screening	Records screened* (n = 136)	Records excluded (n = 104) r1 (n = 27) r2 (n = 29) r3 (n = 8) r4 (n = 32) r5 (n = 1) r6 (n = 7)
	Reports sought for retrieval (n = 32)	Reports not retrieved*** (n = 8)
	Reports assessed for eligibility (n = 24)	Reports excluded: Reason 4 (n = 2)
Included	Studies included in qualitative analysis (meta-study) (n = 22)	
Reason 1: unsuitable year of publication. Reason 2: missing the Anthropocene. Reason 3: missing historical thinking concepts. Reason 4: different main topic. Reason 5: different language. Reason 6: different publication format.		

Fig. 1. Prisma chart representing the selection process. Created by Václav Sixta.

In total, I work with twenty-two texts (N = 22). The selected articles are divided into three groups according to their focus. The first one I call „The Anthropocene as a paradigm shift“ (n = 5). Here we find texts that focus on the general implications of the Anthropocene for history education. These are often conceptually aligned, theoretically informed texts that understand the Anthropocene as an impetus for rethinking the history education at a general level.

The second cluster consists of texts that also have a conceptual orientation but focus only on a selected aspect of the Anthropocene. This could be, for example, themes such as the transformation of temporality, the issue of agency or the role of indigenous perspectives in history education. I place these texts in the group „Particular aspects of the Anthropocene“ (n = 10).

The last group are texts related to school practice (n = 7). These reflect on specific methods or educational materials on the Anthropocene. They can also be empirical research on teachers' attitudes or proposals for curriculum changes. The „Educational practice“ group thus represents the link between theory and practice within the focus of this study.

### **The Anthropocene as a paradigm shift**

The most comprehensive reassessment of historical thinking is presented by Kenneth Nordgren and a group of authors who have defined themselves as emerging scholars in the field: Heather E. McGregor, Jackson Pind and Sara Karn. In mutual consensus, they understand the Anthropocene as a complex set of changes that affect not only the environment but also our relationship to the past: „As the effects of crossing planetary boundaries are irreversible, this seems to negate the notion of an open future which, for Koselleck, constitutes the core of modernity.“<sup>12</sup> The adaptation to the Anthropocene régime of historicity is also the question of the relevance of historical knowledge and historical thinking.<sup>13</sup> The main challenges for historical thinking to incorporate the Anthropocene are categories such as deep time, non-human agency, and resilience, which need to be integrated into historical education.

The two texts differ in the sources they draw on. Nordgren builds on the historical thinking and emphasises the need to newly synthesise historical education. In a scheme called the „reciprocal device“, he shows that history education has many tools useful for a better understanding of the Anthropocene: inquiry-based learning, first- and second-order concepts, etc.<sup>14</sup> At the same time, several impulses require epistemological changes that extend beyond recent notions of historical thinking. On the one hand, current history education is strong at integrating individual case studies from environmental history. On the other hand, the real challenge is to develop a holistic approach that fully integrates historical thinking and Anthropocene, and which wouldn't be just the newly added chapter of a textbook.<sup>15</sup>

The authors of the study called „A wicked problem“ have a broader selection of areas from which to draw inspiration: indigenous studies, environmental history and climate change education.<sup>16</sup> This is best evidenced by the authors' own proposed framework of provisional learning objectives.<sup>17</sup> They are based on the concepts of radical hope, radical truth, radical imagining, and radical teaching. In this respect, this text goes furthest in terms of specifying educational goals for the Anthropocene era. The content of each concept consists of proposals for activities grounded in inquiry-based learning, thematically linked by case studies from the present and the past.

For example, in the radical hope section, students are asked to describe symptoms, causes, and possible ways of adapting to climate anxiety. Radical truth includes both a reflection on the concept of the Anthropocene and a probe into the natural resource controversy. The experiences of indigenous peoples are most embedded in the radical imagining section. The radical teaching is most focused on students' own engagement – for example, they can film interviews with indigenous people or map the work of environmental activists and organisations.

The remaining two texts in this cluster adopt a different argumentation strategy. They argue for a delimitation from the modern tradition of historical education, which persists

<sup>12</sup> NORDGREN, Kenneth. History curriculum in the Anthropocene; how should we tell the story? In *International Encyclopedia of Education*(Fourth Edition). Elsevier 2023, p. 296.

<sup>13</sup> MCGREGOR, Heather E. – PIND, Jackson – KARN, Sara. A 'wicked problem': rethinking history education in the Anthropocene. In *Rethinking History*, 2021, vol. 25, issue. 4.

<sup>14</sup> NORDGREN, Kenneth. History curriculum in the Anthropocene; how should we tell the story?, p. 298.

<sup>15</sup> NORDGREN, Kenneth. History curriculum in the Anthropocene, p. 298-299.

<sup>16</sup> MCGREGOR – PIND – KARN, A 'wicked problem', p. 485.

<sup>17</sup> MCGREGOR – PIND – KARN, A 'wicked problem', p. 498-499.

in many curricula. Philipp Bernhard and Susanne Popp summarise the current debate on the Anthropocene in historiography and draw conclusions for history teaching.<sup>18</sup> The authors introduce the concept of „Globally Conceptualised National History,“ which is based on the integration of Anthropocene perspectives into existing national curricula. The main principles of such educational policies are: „The change of perspective between the local, national, and global, the construction of overviews from a macro-perspective and the zooming in on specific cases between the micro- and macro-level enable the analysis of complex systems and even the critical reflection of Eurocentric ways of historical thinking.“<sup>19</sup>

Arthur Chapman and Caitriona Ni Cassaithe point out that history is still very much embedded in national historical narratives and lacks the tools to integrate geological time, which creates obstacles to its adaptation to the new situation.<sup>20</sup> They focus on the relationship to the future and on global citizenship as a possible starting point. As this is a short editorial for a thematic issue of Public History Weekly, it can tell us much about the framing of the main theme of this study. The authors identify the main goal of historical education as: „... to equip the next generation with the capacity to read the world as global citizens and to think constructively about the future of the planet.“<sup>21</sup> The main source of adapting the history education to the Anthropocene is civic education.

### Particular aspects of Anthropocene

A text that applies a specific disciplinary perspective to this topic is a study by historian of philosophy and intellectual history Tyson Retz.<sup>22</sup> His main interest is the ethical implications of applying the concept of the Anthropocene to history education. Retz identifies three challenges, which can also be seen as areas where the Anthropocene approach to history differs from that employed by contemporary concepts of historical thinking. The first concerns the place of human agency in the perspective of geological time. Retz points out that: „... it is widely believed that taking historical perspectives must accompany any attempt to judge the past. Such fine-grained optics are hard to find on the scale of the Anthropocene.“<sup>23</sup>

The second challenge is a disruption of the concept of agency. This can be attributed to non-human actors and can extend beyond the time period of human lifespan. This also blurs the boundary between intentional and unintentional agency. A final challenge comes from the transformation of temporality. Whereas in the modern conception of history, past events were structured towards the present, in the Anthropocene, according to Retz, the future is the main point of reference. Retz points out that here, as in the previous challenges, there can be uncertainty in relation to the possibilities of agency in the present.

<sup>18</sup> BERNHARD, Philipp – POPP, Susanne. From the National to the Planetary Level. History Education in the Anthropocene. In *International Journal of History Education and Culture*, 2023, vol. 44, p. 36.

<sup>19</sup> BERNHARD – POPP, From the national to the planetary level, p. 36.

<sup>20</sup> NÍ CASSAITHE, Caitriona – CHAPMAN, Arthur. History Education in a Climate of Crisis. In *Public History Weekly* [online]. 2021, vol. 2021, issue 1 [cit. 13.08.2024]. DOI: 10.1515/phw-2021-17415.

<sup>21</sup> NÍ CASSAITHE – CHAPMAN, History Education in a Climate of Crisis.

<sup>22</sup> RETZ, Tyson. Teaching history on the scale of the Anthropocene: Three ethical challenges. In *Historical Encounters: A journal of historical consciousness, historical cultures, and history education*. 2022, vol. 9, issue 2.

<sup>23</sup> RETZ, Teaching history on the scale of the Anthropocene, p. 10-11.

The focus on agency connects Retz's text with Fionnuala Waldron's article.<sup>24</sup> A professor in the field of human rights and civic education lists a series of crises that young people face that can be paralysing. Thus, the Anthropocene is particularly significant for her in its manifestations. The central question is whether history education is capable of supporting students in their active citizenship and ability to co-create the future.<sup>25</sup> Waldron's text can be seen as defining the field of collaboration between historical and civic education in the age of polycrisis. In particular, she sees the areas of critical evaluation of information, reflection on one's own positionality, relationship to community, and active co-creation of the future as key.

The issue of temporality is addressed by several texts in the corpus. Three of them are written by Sebastian Barsch and Andreas Hübner. In their article, they argue: „in order to understand the climate crisis, students must develop the competences to understand 'time' in its various dimensions.“<sup>26</sup> Sebastian Barsch examines ways of thinking about the future among pre-service history teachers. Using a sample of 29 participants in his qualitative research, he shows that the links between ideas about the future and historical knowledge are very weak.<sup>27</sup>

The participants were aware of a whole range of current problems (migration, climate change, the rise of AI), but they did not apply the principles of historical thinking to them.<sup>28</sup> Hübner argues more theoretically, when pointing out that temporality is the key to a critical and depoliticised discussion of the Anthropocene and its place in historical education.<sup>29</sup> He uses this perspective to criticise the simplified use of the term Anthropocene in the debate on historical education (Hübner 2024, 119).<sup>30</sup>

Following the analysis of historical curricula, James Miles and Mati Keynes seek new sources of speculative and future-oriented approaches to history. The authors of the article identify multiscalar, multispecies, and non-continuous history as the main categories.<sup>31</sup> The temporality seems to be a specific thread of the discussion on the Anthropocene in history education. It links theoretical considerations drawn from the scholarly debate with empirical research on curricula and pre-service teachers.

Susanne Popp attempts to distinguish between the terms World-, Global- and Big History and define them across historiography, didactics, and curricula.<sup>32</sup> The most fun-

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<sup>24</sup> WALDRON, Fionnuala. Interrogating History to Imagine a Different Future. In *Public History Weekly* [online], 2021, vol. 2021, issue. 1 [cit. 13.08.2024]. DOI: 10.1515/phw-2021-17409.

<sup>25</sup> WALDRON, Interrogating History to Imagine a Different Future, p. 1.

<sup>26</sup> BARSCH, Sebastian – HÜBNER, Andreas. Concepts of Time in Science Education and History Didactics: Towards an Interdisciplinary Approach to Environmental History. In GAUTSCHI, Peter – FURRER, Markus – FINK, Nadine (hrsg.). *Why History Education*. Schwalbach 2023, p. 316.

<sup>27</sup> BARSCH, Sebastian. Historical thinking, historical knowledge and ideas about the future. In *Journal of Curriculum Studies*, 2025, p. 1-22.

<sup>28</sup> BARSCH, Historical thinking, historical knowledge and ideas about the future, p. 18.

<sup>29</sup> HÜBNER, Andreas. "Simply" talking about the Anthropocene? Pluritemporality, multiscalar history, and history education. In *Historical Thinking, Culture, and Education*, 2024, vol. 1, issue 1

<sup>30</sup> HÜBNER, "Simply" talking about the Anthropocene?, p. 119.

<sup>31</sup> MILES, James – KEYNES, Mati. The problem of teleological history education and the possibilities of a multispecies, multiscalar, and non-continuous history. In *Rethinking History*, 2023, vol. 27, issue 3, p. 502-505.

<sup>32</sup> POPP, Susanne. World History, Global History, Big History: Some remarks on terminology and concepts in relation to history curricula and textbooks. In *Hungarian Educational Research Journal*, 2023, vol. 13, issue 4, p. 470-485.

damental finding is that „world history“ and „national history“ are rather complementary terms than opposite ones. We could replace the adjective „world“ with the word „others“.<sup>33</sup> On the other hand, the concepts of „planetary“ and „big“ history fall within the scope of the Anthropocene. The key features of these concepts are their non-anthropocentric approach and their focus on geological history from the Big Bang to the present.

The following two texts deal with the problem of how to incorporate indigenous perspectives into historical education. The framework of the text by Heather E. McGregor, Sara Karn and Micah Flavin is the possibility of curricular reform that would draw on social studies and humanities education and history education, climate change education, and indigenous studies.<sup>34</sup> The qualitative study is based on 13 interviews with teacher educators and researchers primarily located in Ontario, Canada. The results of the interviews were divided into „barriers,“ „strengths,“ and „suggestions for the future.“<sup>35</sup> Barriers often stem from the legacy of settler colonialism and unfinished decolonisation of institutions and a sense of insufficient pedagogical competencies for such a broad approach to education, as well as from the structure of the curriculum.<sup>36</sup>

Strengths include the proximity of environmental education and indigenous education, and students' strong awareness of climate change. In addition, the authors emphasise that social sciences and humanities education can work in an interdisciplinary manner, highlighting relationships between phenomena, and also operate place-based education.<sup>37</sup> As impulses for the future, respondents mentioned working with histories of disconnection and displacement, prioritising environmental relations, incorporating indigenous and species-oriented perspectives into the educational process, preserving and nurturing our willingness to struggle, dwelling in moments of spiritual ecological connection, and engaging in futures thinking.<sup>38</sup>

Greenlandic author Silke Reeploeg asks a similar question in her text.<sup>39</sup> The incorporation of an indigenous perspective—in this case, Inuit—is framed by UNESCO's Education for Sustainable Development. The author points out that the principles of historical thinking are based on European historiography, which is not always compatible with indigenous knowledge.<sup>40</sup> Historical thinking emphasises critical analysis of sources, contextualisation, and distance from subjectivity. Indigenous knowledge, on the other hand, is often based on oral history, stories, and experience, where personal and community perspectives are not a problem but a value. These differences lead to methodological and epistemological tension—what is considered „evidence“, or a „reliable source“, varies. „Unthinking“ historical thinking means reflecting on the cultural conditioning of historical thinking and moving toward epistemic plurality in historical education.<sup>41</sup>

<sup>33</sup> POPP, *World History, Global History, Big History*, p. 478.

<sup>34</sup> MCGREGOR, Heather E. – KARN, Sara – FLAVIN, Micah. *Regenerative capacities: Bringing social studies and Indigenous studies together for education that responds to climate crisis*. In *Canadian Journal of Environmental Education (CJEE)*, 2024, vol. 26, p. 119 – 140.

<sup>35</sup> MCGREGOR – KARN – FLAVIN, *Regenerative capacities*, p. 125.

<sup>36</sup> MCGREGOR – KARN – FLAVIN, *Regenerative capacities*, p. 126-128.

<sup>37</sup> MCGREGOR – KARN – FLAVIN, *Regenerative capacities*, p. 129-131.

<sup>38</sup> MCGREGOR – KARN – FLAVIN, *Regenerative capacities*, p. 131-135.

<sup>39</sup> REEPLOEG, Silke. *Unthinking historical thinking: lessons from the Arctic*. In *History Education Research Journal*, 2023, vol. 20, issue. 1, p. 1-17.

<sup>40</sup> REEPLOEG, *Unthinking historical thinking: lessons from the Arctic*, p. 9-10.

<sup>41</sup> REEPLOEG, *Unthinking historical thinking: lessons from the Arctic*, p. 2.

## **Educational Practice**

The first text focuses on the traditional educational medium of the textbook.<sup>42</sup> The Stanford University authors focus on how climate change is portrayed in textbooks in Texas and California, USA. The main research method was computer processing of digitised textual data, comparing them with a dictionary extracted from key climate documents published by intergovernmental organisations. The results of the analysis showed that, when it comes to climate change, the approaches of all the textbooks under study are similar. The authors summarise their findings in three points.

First, in depicting the relationship between humans and nature, there is a predominant emphasis on governments (e.g., the establishment of national parks) and prominent individuals (e.g., Henry D. Thoreau) in portraying the actors in the field. Conversely, local actors or movements are completely absent. Second, the textbooks consistently portray large industrial projects (e.g., dams, power plants) as progress. They relativise the risks to human and non-human actors and communities and possible disasters. Finally, climate change is described in textbooks as a controversial topic. The implication, according to the authors of the study, is that there is a blurring of the scientific consensus that anthropogenic global warming is occurring.<sup>43</sup>

Heidi Eskelund Knudsen's research focuses on the relationships between the human and the non-human and on the historical narratives presented in five Danish history textbooks from the 20th century.<sup>44</sup> Although there has been a noticeable development in the history teaching in Denmark over time, the author argues that the non-human perspective is absent from textbooks. Danish textbooks thus continue to be dominated by dualistic narratives separating humans and nature, Denmark from „others,“ and so on.<sup>45</sup>

The sample also includes papers that propose specific topics and lessons as suitable for integrating the Anthropocene into history teaching. One of these is an article by a scholar in history didactics, Urte Kocka.<sup>46</sup> The Columbian Exchange, the Great Acceleration, and the New Temporal Dimension are three areas in which the relationship between humankind and the environment can be explored. According to Kocka, the Columbian Exchange can serve as an example of global change that has affected all areas of life. Similarly, the author considers another change, which is the Great Acceleration—here, too, its significance lies in its complexity and the extent to which it has affected entire ecosystems.<sup>47</sup> Finally, the author argues for greater representation of geological time in history teaching.

The text by McGregor, Karn, Evans, and Pind is based on piloting three lessons in an environmental education course by 24 participants in four surveys.<sup>48</sup> The aim was to test

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<sup>42</sup> D'APICE, Hannah K. – BROMLEY, Patricia. Climate change discourse in U.S. history textbooks from California and Texas. In *Environmental Education Research*, 2023, vol. 29, issue 11, p. 1637–1658.

<sup>43</sup> D'APICE – BROMLEY, Climate change discourse in U.S. history textbooks from California and Texas, p. 1651-1652.

<sup>44</sup> KNUDSEN, Heidi Eskelund. The Anthropocene Question in Danish History Education: A Case Study of Textbooks. In *International Journal of History Education & Culture*, 2023, vol. 44

<sup>45</sup> KNUDSEN, The Anthropocene Question in Danish History Education, p. 72-73.

<sup>46</sup> KOCKA, Urte. The Anthropocene and new challenges for teaching history. In *International Journal of History Education & Culture*, 2023, vol. 44, p. 77-86.

<sup>47</sup> KOCKA, The Anthropocene and new challenges for teaching history, p. 83.

<sup>48</sup> MCGREGOR, Heather E. et al. Piloting historical thinking lessons to address climate change. In *Canadian Social Studies*, 2022, vol. 53, issue 1, p. 3.

the connection between historical and environmental education. The three lessons differ greatly in their approach, but at the same time, cover various principles of historical thinking. The “Golden Spike” lesson focuses on continuity and change and most directly links history and environmental education. The “Angry Inuk” lesson is based on a film and emphasises working with different perspectives. The last lesson, which focuses on disinformation, is devoted to historical consciousness. The piloting confirmed the following benefits of the lessons: “developing critical and historical thinking, collaboration between students, and the flexibility to adapt the lessons for different educational contexts.”<sup>49</sup>

The starting point for Amanda Power and Alison Kitson is that climate change is predominantly taught in British schools as part of science.<sup>50</sup> In their article, the authors offer arguments as to why climate change should also be part of the humanities curriculum. Among the reasons for the marginalisation of the humanities, they cite the emphasis on ‘proving’ with hard data and the consequences of the traditional division between culture and nature.<sup>51</sup> According to the authors, historical education can help overcome two important obstacles to understanding climate change: the narrative of progress and scientific determinism. Historical perspective can show change in a broader interpretative framework than how it is portrayed by the current media. This would involve complementing traditional perspectives, such as political and social history, with environmental history.<sup>52</sup>

Jacques Ngong Atembone’s text draws on reports from school inspectors and interviews with teachers in Cameroon.<sup>53</sup> Like other texts in this literature review, he states that the current method of teaching history has been a legitimising narrative of the nation state.<sup>54</sup> In proposing solutions for how to include environmental topics (the author uses the term ‘eco-history’) in history teaching, he draws on the seventeen Sustainable Development Goals and methods of environmental education. Atembone points out that the Sustainable Development Goals contain a number of concepts that can be developed within historical education, such as social crises, pollution, environmental degradation, anthropocentrism, and pandemics.<sup>55</sup> Another goal of such education should be to transfer knowledge into practice in the form of civic engagement and empathy towards others.

The last text focuses on how students narrativise the Anthropocene.<sup>56</sup> Using a sample of sixty-seven Swedish high school students, the authors investigate whether and how students narrativise the Anthropocene. Based on an analysis of responses to open-ended

<sup>49</sup> MCGREGOR et al., Piloting historical thinking lessons to address climate change, p. 10.

<sup>50</sup> POWER, Amanda – KITSON, Alison. The role of school history in helping young people to navigate their future at a time of climate crisis. In *History Education Research Journal*, 2024, vol. 21, issue 1.

<sup>51</sup> POWER – KITSON, The role of school history in helping young people to navigate their future at a time of climate crisis, p. 4.

<sup>52</sup> POWER – KITSON, The role of school history in helping young people to navigate their future at a time of climate crisis, p. 9-10.

<sup>53</sup> ATEMBONE, Jacques Ngong. How Should History Teaching in Cameroon Respond to the Arrival of the Anthropocene Era? In *International Journal of History Education & Culture*, 2023, vol. 44

<sup>54</sup> ATEMBONE, How Should History Teaching in Cameroon Respond to the Arrival of the Anthropocene Era?, p. 92-3.

<sup>55</sup> ATEMBONE, How Should History Teaching in Cameroon Respond to the Arrival of the Anthropocene Era?, p. 95.

<sup>56</sup> GRIPE, Albin Sönnergren – SANDAHL, Johan. Students’ historicisation of the environmental crisis: A narrative of industrialisation, ignorance and greed. In *Historical Encounters: A journal of historical consciousness, historical cultures, and history education*, 2024, vol. 11, issue 1, p. 1-17.

questions, the authors summarise: „... students' explanations typically focused on basic aspects of technology, economics, lifestyle and demographics. Many did not go beyond pointing out mechanistic connections between the rise of industrial production or mass consumption and environmental degradation.“<sup>57</sup> The cultural and political dimensions of the Anthropocene were notably absent from the students' responses, let alone the idea of alternative development options. The authors attribute this to the limited ability of history education to lead students to their own political engagement. When students mention their own activity, it is about lifestyle change and the reduction of consumption.

### **Key findings**

How does recent history education stand in the context of the Anthropocene in light of the texts presented above? First, there is a consensus that the Anthropocene is not just another new topic to be added to the textbooks, but a complex transformation of the field. In this respect, we can speak about a transfer from recent earth sciences, historiography and philosophy in the history education. From the field of Earth sciences, the most often mentioned are members of the Anthropocene Working Group.<sup>58</sup> The most cited theorists of Anthropocene are Dipesh Chakrabarty, Bruno Latour and Donna Haraway.<sup>59</sup>

In addition, there are several authors who understand the Anthropocene through its manifestations.<sup>60</sup> It reminds us that this is a multi-layered problem. It is not only the gradual transformation of temporality and the regime of historicity and its reflection, but also about the actual needs of students and teachers who face the various manifestations of the Anthropocene in its diverse forms, such as extreme weather, natural disasters, and pandemics.<sup>61</sup>

In the corpus under research, the term „big scale“ appears frequently. Mostly in the form of the need to develop ways to encourage actors in education to adopt large-scale thinking linked to geological time. Conversely, Marnie Hughes-Warrington points to the risks of the dominance of large-scale history education at the expense of subaltern voices. From my perspective, the debate about „big scale“ in history education is where the boundaries of a reductive conception of the Anthropocene may eventually lead.<sup>62</sup> Following Chakrabarty, I argue that understanding Anthropocene as a big scale is reductive and counterproductive, especially for educational purposes. First, the concept itself incorporates the local manifestations of climate change, the non-human actors and the shift towards relational thinking. There is a risk that these features of the Anthropocene

<sup>57</sup> GRIPE – SANDAHL, Students' historicisation of the environmental crisis, p. 24.

<sup>58</sup> ZALASIEWICZ, Jan et al. eds. *The Anthropocene as a Geological Time Unit: A Guide to the Scientific Evidence and Current Debate*. Cambridge 2019.; LEWIS, Simon L. – MASLIN, Mark A. *Defining the Anthropocene*. In *Nature*, 2015, vol. 519, issue. 7542.; EDGEWORTH, Matthew et al. *The Anthropocene Is More Than a Time Interval*; CRUTZEN, *Geology of mankind*.

<sup>59</sup> e. g. CHAKRABARTY, *The Climate of History*; LATOUR, *Agency at the Time of the Anthropocene*; HARAWAY, Donna J. *Staying with the Trouble: Making Kin in the Chthulucene*. Duke 2016.

<sup>60</sup> e. g. WALDRON, Fionnuala. *Interrogating History to Imagine a Different Future* [online] [cit. 13.08.2024]. DOI: 10.1515/phw-2021-17409; NÍ CASSAITHE, Caitriona – CHAPMAN, Arthur. *History Education in a Climate of Crisis* [online] [cit. 13.08.2024]. DOI: 10.1515/phw-2021-17415.

<sup>61</sup> e. g. HARTOG, François. *Regimes of Historicity: Presentism and Experiences of Time*. New York Chichester, West Sussex 2015.; CHAKRABARTY, *The Climate of History*.

<sup>62</sup> HUGHES-WARRINGTON, Marnie. *History's Trolley Problem*. In *Public History Weekly* [online]. 2021, vol. 2021, issue 1 [cit. 13.08.2024]. DOI: 10.1515/phw-2021-17580.

will be lost in the case of reducing the Anthropocene to a big-scale perspective. Next, there is an important pedagogical principle that for pupils and students, it is better to begin to learn from the phenomena which are local and familiar to them. This principle is well-developed and consensually accepted, also in the field of climate education.<sup>63</sup>

The basic assumptions of history education, in the form of historical thinking and inquiry-based learning, remain unchallenged as fundamental principles. Despite this, there are impulses to rethink the particular principles of historical thinking, especially in the first two clusters. For example, analysing causes and consequences became complicated because non-human actors stepped into the historical processes. Also, the ethical judgments are blurred if we accept that climate change is “an unintended consequence of human actions.”<sup>64</sup> I emphasise that the sensitive topic in this respect is historical consciousness, which covers the areas of historical significance and ethical dimension. The advent of the Anthropocene has disconnected the past, present, and future.<sup>65</sup> To re-establish a relationship to the past in this context is one of the challenges for recent history education. I would like to stress that, according to the results of this literature review, we do know very little about the preconceptions of pupils and students in relation to this issue.

Looking especially at the texts of Kenneth Nordgren or Arthur Chapman, recent history education seems to be capable of integrating individual lessons on the relationship between humans and nature in its various forms. The limitations, and therefore the challenges, lie in synthesis, or its materialisation in curricula and textbooks. To prepare a curriculum structured around the concept of the Anthropocene is the horizon to which all the texts in the first cluster turn. The closest to this goal is the text by a Canadian trio of authors who present their own proposal for the structure of such a curriculum.<sup>66</sup> In the context of the corpus, however, this text is exceptional in that it draws on concepts that have so far had little place in mainstream debates about historical thinking (radical imagining, radical hope, etc.).

It cannot be overlooked that the Anthropocene perspective widens the contact zone between historical and civic education. Authors across clusters agree that the goal of history education should be to foster student engagement and imagination in relation to possible alternatives in the future.<sup>67</sup> On the contrary, the inclusion of the indigenous perspective is an ongoing and still sensitive challenge both on the epistemological and practical levels.<sup>68</sup>

Another significant area for development – at least from my perspective – lies in the near absence of links between the fields of history and climate change education.<sup>69</sup> Of the

<sup>63</sup> EVANS, Rebecca S. – MCGREGOR, Heather E. – REED, Brenda. Pedagogical principles for encouraging (socially just) youth climate action: A schema for citizenship education curriculum analysis. In *Education, Citizenship and Social Justice*, 2025, vol. 20, issue 3, p. 457; MORRISSEY GLEESON, Emma – MORRISSEY, John. Towards a fit-for-purpose climate change education: a systematic literature review identifying core principles and potential barriers. In *Environmental Education Research*, 2025, vol. 31, issue 11, p. 2320.

<sup>64</sup> CHAKRABARTY, *The Climate of History*, p. 221.

<sup>65</sup> CHAKRABARTY, *The Climate of History*, p. 197.; HARTOG, *Regimes of Historicity*.

<sup>66</sup> MCGREGOR – PIND – KARN, A ‘wicked problem’.

<sup>67</sup> e. g. MCGREGOR – PIND – KARN, A ‘wicked problem’; WALDRON, *Interrogating History to Imagine a Different Future*; GRIPE – SANDAHL, *Students’ historicisation of the environmental crisis*.

<sup>68</sup> REEPLOEG, *Unthinking historical thinking: lessons from the Arctic.*; MCGREGOR et al. *Piloting historical thinking lessons to address climate change*.

<sup>69</sup> CHANG, Chew Hung. *Climate change education: knowing, doing and being*. London & New York 2023; STEVENSON, Robert B. – NICHOLLS, Jennifer – WHITEHOUSE, Hilary. *What Is Climate Change Edu-*

entire corpus of texts, only one text mentions climate change education as a source of inspiration.<sup>70</sup> Its authors observe that climate change education focuses on disciplines other than history: ecology, geography, natural sciences, etc. They also point out that disrupting an anthropocentric worldview and promoting student agency are common goals of history and climate change education.

For further research, it should be noted that insight into how students perceive the relationship between past, present and future in the context of the Anthropocene is limited. There are only a few texts in the corpus under investigation that deal with research on historical consciousness. Most of them are isolated studies based on a small sample of respondents. Representative national and transnational studies of historical consciousness thus represent one of the horizons of the debate on the Anthropocene and historical education.

The other challenge is undoubtedly to develop and pilot comprehensive educational materials based on the concept of the Anthropocene. A similar disproportion applies here as in the previous case. If academics agree that it is necessary to respond to changing temporality, it is essential to develop and test functional lessons for schools. At the conceptual level, the main question is whether it is enough to reform the principles of historical thinking or whether we need the intervention of concepts from different pedagogical and epistemological traditions. This debate is certainly not closed and will continue alongside the debate on the Anthropocene in the humanities.

Last, but not least, there is a challenge to integrate indigenous perspectives into the history education. Authors from different regions state that integrating indigenous perspectives could bring new experiences and epistemologies into this field. This could look like giving more space to oral history and storytelling, or to issues like the pre-colonisation era, the experience of colonisations or the relations between indigenous societies and the environment. Taking into consideration indigenous perspectives and experiences is challenging, because it opens a space for activities, approaches and sources which were marginal in history education so far.

### *East-Central European perspective*

I mentioned at the beginning of this text that its authorship is situated in East-Central Europe. How does the debate presented above appear from this regional semi-peripheral perspective? The countries of East-Central Europe are among the regions where historical thinking has established itself through academia, but also in projects that have strongly linked academic approaches with transfer to the classrooms.<sup>71</sup> For example, concepts of

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cation? In *Curriculum Perspectives*, 2017, vol. 37, issue 1.; UNESCO. Not just hot air: putting climate change education into practice [online]. UNESCO, 2015 [cit. 15.08.2024]. DOI: 10.54675/JEZC9407.

<sup>70</sup> MCGREGOR – PIND – KARN, A 'wicked problem', p. 495-497.

<sup>71</sup> WOJDON, *Between Public History and History Education.*; BOJKOVÁ – JANČURA, *Dejiny tvoríš ty!: história - škola - verejný priestor*; ČINÁTL, Kamil et al. *Digitální technologie ve výuce dějepisu a dalších společenskovedních předmětů*. In *Marginalia Historica*, 2017, vol. 8, issue 1; PINKAS, Jaroslav. *Třetí odboj v didaktické perspektivě*. Praha 2020; ČINÁTL et al. *Digitální technologie ve výuce dějepisu a dalších společenskovedních předmětů*; BURES, Miroslav et al. *An Innovative E-Learning Support for Modern History Distance Learning and the Experience during the COVID-19 Lockdown.*; ČINÁTL – NAJBERT – RIPKA, *Historická gramotnost v aplikaci HistoryLab: realistický přístup k osvojování didaktické teorie dějepisu*. 2021; WOJDON, *Mysłac o wieloletniczości*. 2018.

historical thinking based mainly on the work of Seixas and Morton, Levstik and Barton, and Levesque, supplemented by the German school of historical pedagogy, were translated into a specific simplified model and applied to several educational materials in the Czech Republic.<sup>72</sup> In Slovakia, several educational activities follow these appropriations of historical thinking into the national context.<sup>73</sup>

Although these approaches have established themselves mainly on themes related to contemporary history (Czech-German relations, modern dictatorships, the Holocaust, forced migrations), the Anthropocene and environmental themes have gradually gained attention in recent years. The situation corresponds to what has been diagnosed by a number of authors above: individual lessons and materials devoted to the changing relationship between humans and nature and to environmental topics are emerging.<sup>74</sup> What is missing, however, is a more comprehensive approach.

A significant difference is also the thematic scope and the source of case studies for educational materials. While cases related to colonialism and its consequences dominate the debate described above, the question for East-Central European educators is where to find the focus of their educational materials and curricula in order to integrate the challenges of the Anthropocene. This is a debate that needs to be conducted in the near future in order to think about history education for the Anthropocene era in the semi-peripheral conditions of East-Central Europe.

For future research and educational materials development, I suggest the following issues. First, it seems necessary to broaden the scope of interest in history pedagogy. It means to leave the dominant focus on contemporary history and develop more educational materials and pedagogical research dealing with the modern and pre-modern past, including archaeology. There is a potential to focus more on the long-term historical processes, the relations between society and the environment and to capture also the agency of the non-human actors.

This does not mean to resign to dealing with the experiences of modern dictatorships and their heritage. The Anthropocene perspective can bring a new perspective on processes such as industrialisation, the intensification of agriculture, massive construction in the post-war era, and the relationship with the so-called Third World, among others. It is essential to note that all these phenomena align with the Great Acceleration graph.<sup>75</sup> The potential also lies in the material traces of both dictatorships visible in the landscape. These are not only witnesses or products of violations of human rights, but also a specific form of modernity, including its relationship between society and environment.

<sup>72</sup> ČINÁTL – NAJBERT – RIPKA, Historická gramotnost v aplikaci HistoryLab HistoryLab.cz — Web application that works with historical sources. In HistoryLab [online] [cit. 13.08.2024]. Accessible online: <https://historylab.cz/en>; Soudobé dějiny: pro 9. ročník základních škol a víceletá gymnázia. Plzeň 2022.

<sup>73</sup> LUKÁČOVÁ, Katarína – SVATOVÁ-FILČÁKOVÁ, Mária. K perspektívam školského dejepisu v kontexte elektronických médií. In Česko-slovenská historická ročenka. 2021, vol. 23, issue 1.; BOJKOVÁ – JANČURA, Dejiny tvoríš ty!: história - škola - verejný priestor; LUKÁČOVÁ, Katarína – FOGELOVÁ, Patrícia. Local History - Regionálne dejiny inovatívne, výskumné a digitálne (Metodická príručka pre učiteľov dejepisu základných a stredných škôl). In <https://www.localhistory.sk/>. 2025 [cit. 27.12.2025].

<sup>74</sup> NAJBERT, Jaroslav – PALATKA, Stanislav. Expedice Podvltavy: Devět mlýnů a Podmolí: náměty na badatelské aktivity pro žáky základních a středních škol. Praha and Znojmo 2017; FASORA, Lukáš. Didaktické inspirace k aktivizační výuce ve středoškolském dějepisu. Brno 2023.

<sup>75</sup> ELLIS, Erle C. 4. The Great Acceleration. In ELLIS, Erle C. Anthropocene: A Very Short Introduction. Oxford University Press, 2018 [cit. 27.12.2025].

The biggest challenge of the above-mentioned is incorporating the indigenous perspective. Who are the indigenous? What does it mean in the East-central Europe? These questions seem nonsensical. Following the Australian environmental philosopher Freya Mathews, being native means to accept the given reality and experience as deeply as possible its relationality.<sup>76</sup> I tentatively suggest transferring this approach to history education by emphasising the materiality of traces of the past and accepting the semi-peripheral position of the region. I mean, for example, focus with the pupils and students on the history of everyday commodities like chocolate and tea, or to discover the history of particular sites, buildings or landscapes. These approaches can connect the Anthropocene perspective with the reality of the local histories of a particular school. What it means to be native in the East-Central European context is actually the direction for future research and discussion.

To conclude, the debate about the Anthropocene and historical education can be built on a shared need to respond to a changing situation and on the principles of constructivist pedagogy and inquiry-based learning. Collaboration between academia and school practice is a key factor here. The second essential factor here is the ability to cross disciplinary boundaries between history, civics and other fields of education.

It is under these conditions that the principles of historical thinking can be meaningfully and systematically reconsidered for the Anthropocene epoch. Several challenges have been identified in the results: the need for better insight into the pupils' and students' historical thinking in relation to the Anthropocene, the incorporation of the indigenous perspective, the synthesis towards a systematic curriculum and closer collaboration with climate change education.

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<sup>76</sup> MATHEWS, Freya. *Becoming Native: An Ethos of Countermodernity II*. In *Worldviews* [online]. 1999, vol. 3, issue 3, p. 243-271.

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