

## About the Research

This study reports on the state of climate change education policy across kindergarten to grade twelve (K-12) education in the United States. By identifying trends and opportunities for advancing climate change inclusion in education policy, education systems can support the development of climate change solutions within policy and practice.

Benchmarking whether and how states are currently including climate change in education policy materials can help inform and motivate further inclusion. Strong uptake of climate change in education policy helps administrators, educators, parents, and students recognize and mobilize the role of education in climate action, as well as address climate-related mental and social health issues.

## Research Methods

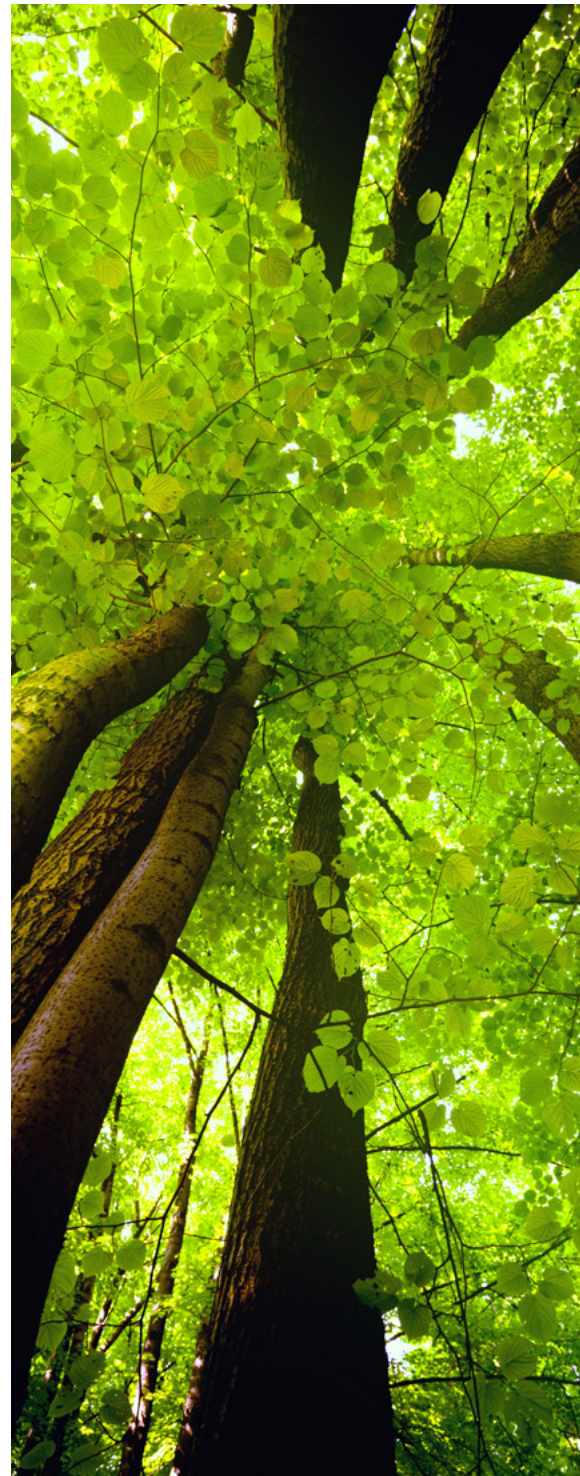
The study includes a review of 802 publicly available education policies across the United States.<sup>a</sup> These policies were found by searching department of education and board of education<sup>b</sup> websites, as well as a web search engine for climate change keywords (herein ‘content’)<sup>c</sup> across all 50 U.S. states and the District of Columbia.<sup>17</sup>

In the study, *education policy* refers to official education policy texts, such as strategic plans, environmental literacy plans, and sustainability policies, as well as curriculum frameworks and state standards,<sup>d</sup> which have been produced by departments or boards of education.

Only policy materials within public state-level departments or boards of education were collected.<sup>e</sup>

The study used a whole institution approach for data collection and analysis and considered four institutional domains of potential climate change activity: 1) institutional governance, 2) teaching and learning, 3) facilities and operations, and 4) community partnerships (see Figure 1). Past research has indicated that a whole institution approach is an effective framework for ensuring higher levels of sustainability and climate change education in education policy and practice.<sup>18,19,20</sup> A whole institution approach to climate change education is also recognized as an effective model by UNESCO.<sup>21,22</sup>

For policy analysis, the extent and type of climate change inclusion in policies were examined, supported by NVivo 12 qualitative research software.<sup>f</sup> The relative frequency of climate change keywords within education policies was used to measure the extent of state-level inclusion of climate change in education policy.



<sup>a</sup> Policies were collected from April 2021 to July 2021.

<sup>b</sup> Some states have separate websites for their departments and boards of education. State educational authorities are usually referred to as the state departments of education, which are usually personified through the state board of education. State boards of education differ in relation to their policy authority in every state. Within 45 states, state boards of education adopt the learning standards for all students in the state (NASBE, 2022).

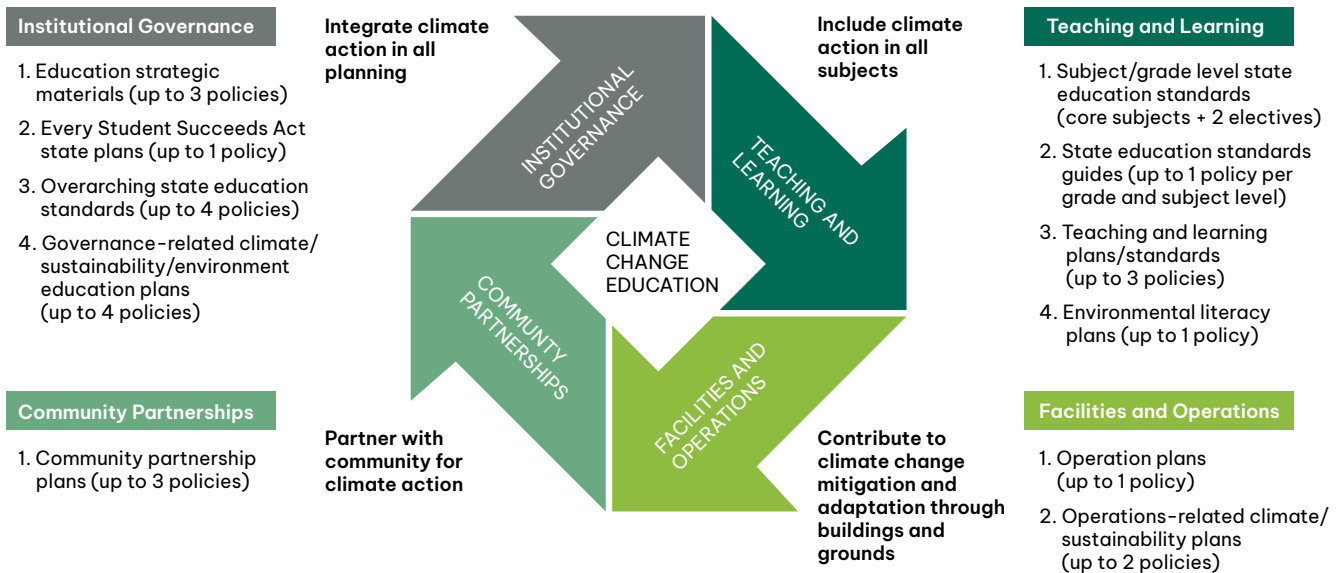
<sup>c</sup> Mention of climate change content within the policies was reviewed to ensure it referred to climate change.

<sup>d</sup> State education standards indicate what students should know and be able to do by the end of each grade level and within particular subjects to pass state assessments.

<sup>e</sup> Policies from the private education sector or local authorities (e.g., school districts) were not collected. Standards for career and technical education at the primary and secondary level were also not collected. States rarely have one policy for their career and technical education standards. More commonly, the standards are separated by career clusters or individual courses, which are selected at the district level. For states that use course-specific standards, this often would have meant collecting course outlines for hundreds of classes to obtain a comprehensive list of all the standards used for a career cluster.



**Figure 1. A whole institution approach to climate change education framework and the policy types collected within each domain.**



The keywords were divided into clusters that represent different ways climate change can be engaged in K-12 education (see Table 1). Due to few results returned for climate justice, mitigation, and adaptation, more detailed searches were conducted for related keywords within one paragraph of the word *climate* to capture broader climate change content at the paragraph level. Keywords related to the United Nations (UN) were also searched within one paragraph of the word *climate* to determine if/how key UN policy initiatives were referenced in the policies.

<sup>f</sup> To consider varying policy lengths and numbers of policies per state, keyword frequencies were standardized by 1,000,000 words.



**Table 1. Keyword clusters searched using NVivo 12.**

<b>Climate Change-Overall:</b>			
<ul style="list-style-type: none"> <li>• “climate change”</li> <li>• “climate hazard*”</li> <li>• “climate impact*”</li> <li>• “climate vulnerable*”</li> <li>• “climate action*”</li> </ul>	<ul style="list-style-type: none"> <li>• “climate resilience”</li> <li>• “carbon footprint*”</li> <li>• “global warming”</li> <li>• “GHG emission*”</li> <li>• “greenhouse gas emission*”</li> </ul>	<ul style="list-style-type: none"> <li>• “CO<sub>2</sub> emission*”</li> <li>• “carbon dioxide emission*”</li> <li>• “low emission*”</li> <li>• “net-zero emission*”</li> </ul>	<ul style="list-style-type: none"> <li>• “carbon neutral”</li> <li>• “climate mitigation*”</li> <li>• “climate adaptation*”</li> <li>• “just transition*”</li> <li>• “climate justice”</li> </ul>
<b>Green Schools:</b>	<b>Environmental or Climate Change Laws:</b>	<b>Energy:</b>	<b>Environmental Protection Agency:</b>
<ul style="list-style-type: none"> <li>• “green school*”</li> <li>• “green ribbon school*”</li> <li>• “eco school*”</li> <li>• “eco certification*”</li> </ul>	<ul style="list-style-type: none"> <li>• “climate change law*”</li> <li>• “climate change education law*”</li> <li>• “climate law*”</li> <li>• “climate action law*”</li> <li>• “environment* law*”</li> <li>• “environment* education law*”</li> </ul>	<ul style="list-style-type: none"> <li>• “fossil fuel*”</li> <li>• “renewable energy*”</li> <li>• “renewable resource*”</li> <li>• “alternative energy*”</li> </ul>	<ul style="list-style-type: none"> <li>• EPA</li> <li>• “Environmental Protection Agency”</li> </ul>
<b>Keywords searched within one paragraph of the word “climate”</b>			
<b>Justice:</b>		<b>Adaptation and Mitigation:</b>	<b>United Nations:</b>
<ul style="list-style-type: none"> <li>• justice</li> <li>• civics</li> <li>• citizenship</li> <li>• vulnerable</li> <li>• “social movement*”</li> </ul>	<ul style="list-style-type: none"> <li>• protest*</li> <li>• strike*</li> <li>• disproportionate</li> <li>• “at risk”</li> <li>• marginalized</li> </ul>	<ul style="list-style-type: none"> <li>• mitigate</li> <li>• mitigation</li> <li>• mitigating</li> <li>• adapt</li> <li>• adaptation</li> <li>• adapting</li> </ul>	<ul style="list-style-type: none"> <li>• UNFCCC (&amp; spelled out)</li> <li>• UN (&amp; spelled out)</li> <li>• “Paris Agreement”</li> <li>• ACE (&amp; spelled out)</li> <li>• “2030 Agenda”</li> <li>• SDG (&amp; spelled out)</li> <li>• “Kyoto Protocol”</li> <li>• “Doha Work Programme”</li> <li>• UNESCO (&amp; spelled out)</li> </ul>

\*Indicates multiple variations of the word or words were included in the search

Suggested citation: MECCE Project & NAAEE. About the research excerpt from *Mapping the Landscape of K-12 Climate Change Education Policy in the United States*. Monitoring and Evaluating Climate Communication and Education Project and North American Association of Environmental Education.

Citations for footnotes and endnotes are included in the full report referenced above.