Varieties of Indoctrination: The Politicization of Education and the Media around the World

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For many decades, scholars assumed voluntary compliance and citizens' commitment to a regime's principles and values to be critical for regime stability. A growing literature argues that indoctrination is essential to achieve this congruence. However, the absence of a clear definition and comprehensive comparative measures of indoctrination have hindered systematic research on such issues. In this paper, we fill this gap by synthesizing literature across disciplines to clarify the concept of indoctrination, focusing particularly on the politicization of education and the media. We then outline how the abstract concept can be operationalized, and introduce and validate an original expert-coded dataset on indoctrination that covers 160 countries from 1945 to the present. The dataset should facilitate a new generation of empirical inquiry on the causes and consequences of indoctrination.

Keywords: Indoctrination, voluntary compliance, education, political communication, expert survey

1. Introduction

In recent years, the entrenchment of autocrats, the rise of populist leaders, and increased polarization in established democracies have led to renewed interest in understanding how political regimes—whether democratic or autocratic—can control and influence public support to maintain power (Fitzgerald et al. 2021; Guriev and Treisman 2019; Przeworski 2022). While studies of political control have primarily focused on coercion and co-optation, this paper joins recent research

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that highlights indoctrination as an alternative strategy that enables powerholders to induce voluntary compliance and establish support among its citizens (De Juan, Haass, and Pierskalla 2021; Hassan, Mattingly, and Nugent 2022; Paglayan 2021; 2022a; 2022b). Yet, indoctrination remains relatively understudied as a tool of political control. Among other problems, conceptual ambiguity and the lack of comparative data have traditionally impeded research in this field. We address these challenges by proposing greater conceptual clarity and by introducing original, expert-coded data to facilitate a new generation of empirical inquiry.

Our work makes numerous contributions to the study of indoctrination. First, we provide a clear and universally applicable definition of indoctrination as a regime-led socialization process that aims to increase congruence between the views and principles of the regime[1] and those of its citizens. While indoctrination has typically been confined to the study of autocracies, we note that our definition lacks any attachment to specific ideologies or regime types. Instead, we argue that the study of indoctrination is applicable to the study of democracies as well.[2] We further reason that indoctrination is primarily channeled through education and the media, and we offer a framework to measure indoctrination across both channels. The framework we propose captures two main dimensions: the potential for indoctrination (i.e., the ability of states to inculcate their citizens) and the content of indoctrination.

Second, we make an empirical contribution to the study of indoctrination by introducing original data. Comparative studies of indoctrination remain constrained by the absence of comprehensive data that cover different regimes, regions, and time periods. The *Varieties of Indoctrination* (V-Indoc) dataset (Neundorf et al., 2023a) we present in this paper draws on the information provided by 760 country experts through a survey fielded in collaboration with the Varieties of Democracy (V-Dem) Institute. The dataset offers a wide array of unique and detailed indices and indicators on indoctrination in education and the media. We consider education provided in schools that are controlled, managed, funded (even if only partially), or subsidized by the public sector. Moreover, the dataset

provides unrivaled coverage as it includes an almost universal sample of countries in the post-World War II period.[3] The V-Indoc dataset should enable richer and more expansive empirical examinations of the causes and consequences of indoctrination around the world and over time.

The dataset should be particularly useful for advancing the understanding of how states use education as a political tool. Whereas existing comparative education data mostly measure the quantity (e.g., Barro and Lee 2013; Lee and Lee 2016) or quality (e.g., Altinok, Angrist, and Patrinos 2018; Angrist et al. 2021) of education, or code factual (de jure) information based on primary or secondary archival records (Del Río, Knutsen, and Lutscher 2023; Paglayan 2021), the V-Indoc data captures mostly de facto education practices, covering diverse topics such as school curricula, teachers, and patriotism. This kind of data should allow researchers to directly examine the mechanisms that link education practices to outcomes of interest, which could not be previously tested explicitly due to the absence of requisite data (Ansell 2010; Paglayan 2021).

Furthermore, our work answers several recent calls in the authoritarian politics literature to move beyond the study of repression for understanding the longevity of these regimes and their ability to amass popular support. Existing research shows a rise in the share of "informational" autocracies around the world and emphasizes the importance of political communication for sustaining authoritarian rule (Guriev and Treisman 2020; 2022; Roberts 2018; 2020). Most recent data collection efforts shift the focus to the content of political communication to uncover substantive cross-national variation in the propaganda strategies of autocracies (e.g., Baggott Carter and Carter 2023). Our conceptualization of indoctrination integrates political communication and our data contribute six new indicators that measure state attempts to control and influence the media. Finally, we demonstrate the application of our data by testing Linz's (2000) argument that military regimes are less likely to engage in indoctrination than other forms of autocratic regimes. We provide initial evidence of how different authoritarian regimes vary not just in terms of leadership selection, but also in their potential to indoctrinate.

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2. Defining Indoctrination

Although recent scholarship in political science highlights the importance of indoctrination as a tool of political control, indoctrination remains an ambiguous concept to define and measure. For example, Hassan, Mattingly, and Nugent (2022, 160–61) define indoctrination as a nonviolent strategy that the state can use to induce compliance, associated with predominantly immaterial benefits. Paglayan (2022b, 11) focuses on education and conceptualizes indoctrination as a tool of state building used "to promote long-term social order by indoctrinating young children to accept the status quo, behave as 'good citizens,' and respect the state and its laws." Brandenberger (2012) describes indoctrination as the process of propagating a coherent narrative or regime mission in the form of a set of (ideological) principles or ideas at the expense of other competing worldviews and principles. Lott (1999, 129) generalizes the concept of indoctrination as "controlling the information received by citizens": in this sense, the state's control over education is similar to control of the media.

The examples above demonstrate a lack of a clear definition of indoctrination. The reason for this vague conceptualization might lie in the contested history of the term (Woods and Barrow 2006). In the late nineteenth century, indoctrination was a synonym for education (Puolimatka 1996, 109). According to the 1901 New England Dictionary, indoctrination is "instruction, formal teaching" (Raywid 1980, 2).[4] However, after World War I, indoctrination acquired a derogatory connotation similar to propaganda and brainwashing (Gatchel 1959, 306)—a trend that continued with the rise of dictatorships in the twentieth century (Moore 1966, 398). We build on this rich historical work on indoctrination and the recent reemergence of the term (e.g., Armstrong 2022). The goal of this paper is to present a clear, unifying definition of indoctrination to allow for the operationalization of such an abstract and multidimensional concept. Here we use indoctrination as an umbrella term making two important assumptions: (1) indoctrination is not limited to autocracies, and (2) indoctrination is not restricted to education.

To conceptualize and measure indoctrination in a way that can facilitate future research on causal effects, we need to distinguish inputs (what is the indoctrination process?) from outputs (does it work?) (see figure 1). Indoctrination effectiveness is a different output-related question that has only scarcely been tested empirically, mainly due to the lack of (comparative) data.[5] Instead, we focus on what the regime can do to shape individuals' beliefs, values, and (public) behaviors to render society more pliant to state directives, as postulated by Hassan, Mattingly, and Nugent (2022) and Paglayan (2022a). The regime's intentions cannot be observed directly but can be inferred from public statements or legislation.[6] Bromley and colleagues (2022), Del Río, Knutsen, and Lutscher (2023), and Paglayan (2021) code the regime's intentions from primary (and in some cases, secondary) sources. However, as Bromley and colleagues (2022, 3) argue, the regime's "publicly stated goals" do not necessarily become legislation: "All [education] reforms contain a discursive dimension, but only some are implemented in part or in full." Unlike the recent de jure data collection efforts, our approach allows us to focus on the implementation phase and gets us as close to the door of the classroom as possible —that is, to what is de facto happening on the ground.[7]

However, the regime's indoctrination efforts might not necessarily go through the standard path via legislation. On the ground, teachers can be pressured by school administrations not to deviate from the official curriculum (Rodden 2010). Legislation that is not explicitly about education, such as penalties for criticizing the regime in times of war, can also be used against teachers and schoolchildren.

What is the objective of indoctrination then? Through indoctrination, any regime ultimately aims to create an "unshakable commitment" (Woods and Barrow 2006, 71) to its core principles that is resistant to shocks in regime performance and other counterinfluences.[8] More specifically, citizens further learn what beliefs and behaviors to display in public, and how to do so. The regime utilizes complementary channels to maximize and maintain its

Figure 1
The Phases of the Indoctrination Process

Regime's intentions → Legislation → Implementation → On-the-ground indoctrination

V-Indoc
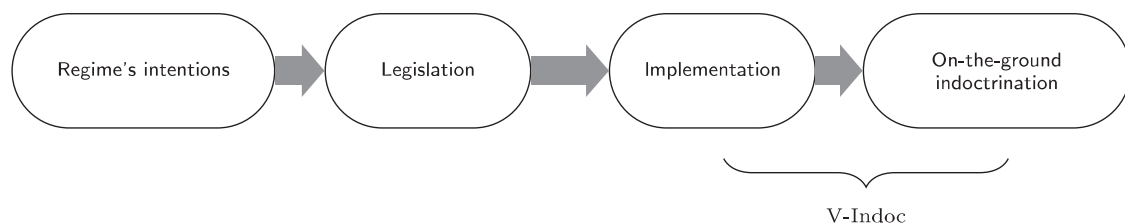
intended impact. Individuals are exposed to political messages and learn acceptable behaviors and values at schools, universities, voluntary associations, and the military (e.g., De Juan, Haass, and Pierskalla 2021), and in the workplace, the media, and the arts. Similar to Hassan, Mattingly, and Nugent (2022), we focus on two channels of indoctrination: education and the media.[9] Through (compulsory) *education*, entire cohorts of children can be exposed to pro-regime messages and narratives when they are young and most malleable. Indoctrination efforts channeled through the media are often synonymous with propaganda or political communication. While indoctrination through education is a long-term process that takes place through regime-led socialization and habituation early in life (Persson 2015), indoctrination through the media mainly targets adult citizens and can serve to reinforce pro-regime messages disseminated through the education system.[10]

It may be helpful to think of indoctrination as ultimately aiming to shape "ideal-type" citizens (or "good citizens" [Paglayan 2022b, 11]), which will vary by regime type. Broadly defined, "ideal-type" citizens in democracies have "internalized the spirit of democracy" (Diamond 2008, 294). They have the habit of actively participating in politics through protests and voting. They are also able to run for office if they wish and are equipped with the civic skills, confidence, and competence needed to hold powerholders to account (e.g., Westheimer and Kahne 2004). Not only do these citizens obey laws, they also participate in making them (Almond and Verba 1963). "Ideal-type" citizens in democracies also uphold democratic values of tolerance and pluralism (e.g., Westheimer 2006, 3). To mold these citizens, education in democracies emphasizes civic competence, democratic norms such as tolerance and pluralism, and the habit of political participation (Finkel and Smith 2011).

"Ideal-type" citizens can vary across nondemocratic regimes; however, they too are united by their belief in regime norms and principles. As far as participatory norms are concerned, while electoral autocracies have traditionally encouraged participation in elections, military dictatorships, such as Franco's Spain, have refrained from engaging citizens in the political process altogether. Even in electoral autocracies, however, the main purpose of citizen participation in politics is not co-governance—participation remains "ritualistic" in nature. And, while "ideal-type" citizens in nondemocratic regimes are also equipped with certain civic skills (e.g., Distelhorst and Fu 2019), these mainly represent habits of loyalty and unity (Koesel 2020). To mold these citizens, nondemocratic education emphasizes uncritical acceptance and acquiescence.

To sum up, we propose defining indoctrination as a deliberate regime-led process of socializing "ideal-type" citizens who support the values, principles, and norms of a given regime—whether democratic or autocratic—and who thus voluntarily comply with regime demands and remain loyal in times of crisis. As a regime-led socialization process, indoctrination intends to leverage both the persistence effects of early life socialization through the use of compulsory education of children and broader channels like media, arts, and culture, which can help to maintain and reinforce the effects of education among adult citizens.

3. How Indoctrination Works and Its Dimensions

Following our definition of indoctrination introduced above, we next discuss the multidimensional nature of indoctrination and how it works in more detail. We adapt our approach from the philosophy of education (e.g., Woods and Barrow 2006, 74–75) and focus on the following dimensions: (1) the potential for indoctrination and (2) the (democratic and patriotic) content of indoctrination.

The first dimension relates to the necessary condition for regimes to have the potential or capabilities to shape citizens' political attitudes and (public) behavior. We assume that political authorities need to take control over the structures and processes of the education system and the media to be able to indoctrinate. The main focus of this dimension is whether there is a potential for indoctrination to be successfully implemented. The second dimension of indoctrination then relates to the content that authorities try to indoctrinate, which can be democratic, authoritarian, and/or patriotic.

3.1. Indoctrination Potential

To conceptualize *indoctrination potential*, the first requirement is *coherence* of the regime's doctrine (Linz 2000)—whether democratic or autocratic—and how it is transmitted via education and the media. We could imagine a regime where there is a very coherent single doctrine of political values and model citizenship that is known and promoted by all regime-led agents of socialization, such as schools and state-controlled media. To achieve such coherence, regimes need to *centralize* the education system (Ansell and Lindvall 2013; Paglayan 2022a) and state control of the media. A centralized system is expected to produce a more coherent message, which leads to a higher potential to indoctrinate.

Furthermore, the potential for indoctrination and the ability to deliver a coherent message rests on the premise that values and practices are inculcated by instructional agents who are formally charged with this responsibility (Momanu 2012). *Control over these agents*, such as the regime's control over teachers and teaching practices inside the classroom, is key to bridging the gap between the regime's intent to indoctrinate and the effectiveness of indoctrination (Paglayan 2022b, 13). We assume that the

stricter control is, the stronger (and hence more effective) indoctrination will be.

Centralization and standardization of education alone do not indicate the potential to shape children as future citizens. Here it is crucial to look at the degree of effort and time the school curriculum requires teachers to devote to teaching about the regime's ideology. Thus, as the final dimension of indoctrination potential, we need to include the effort devoted to *political education*, assuming that emphasizing these topics in the curriculum is a direct attempt by the regime to teach its core political principles and norms.[11]

Our concept of indoctrination potential bears similarity to the understanding of nation building as a state-driven process of centralization (Wimmer 2018), standardization (Lipset and Rokkan 1967), and the assertion of power over agents and producers of culture (Kyriazi and vom Hau 2020). But unlike nation building, indoctrination has a stronger political, rather than cultural, focus. While the potential of a regime to indoctrinate is facilitated by some of the same state-related processes that enable nation building, we understand indoctrination to be a regime-led process that can be ongoing and occur well after the "age of nation building."[12] Furthermore, while our understanding of the aims of indoctrination is closer to the more political process of state-building, which seeks to generate obedience and respect for a state's laws (Paglayan 2022b), we emphasize the *regime-led* nature of the indoctrination process, which aims to create loyalty and support for the *regime* via a set of rules for leadership selection and policy making (Geddes, Wright, and Frantz 2014). Regimes may try to leverage nation and state building to aid indoctrination, but the aim is to create support for the regime specifically.[13]

3.2. Indoctrination Content

The second dimension of indoctrination that we distinguish relates to its content. The question of *what* is indoctrinated is considerably more political than a regime's indoctrination potential. More specifically, we distinguish two core elements of this dimension: (1) democratic (versus authoritarian) and (2) *patriotic content.*

First, the political character of indoctrination is closely linked to model citizenship, introduced above. Pluralism of opinions and critical thinking skills are often used to separate model citizens in democracies from autocracies (Gatchel 1959; Westheimer and Kahne 2004). Our goal is therefore to create a unidimensional scale of indoctrination content ranging from democratic (participatory, critical, pluralist) to autocratic (loyal/obedient, uncritical, single view/ideology). To achieve this, we focus on two facets of indoctrination content: the regime's ideology (*what* is taught at school) and the level of contestation

(*how* it is taught). Our definition of *ideology* encompasses the core principles, values, and norms of a society that are used by the regime to legitimize its existence and actions.[14] In this respect, liberal democracy can be classified as an ideology. The content of the "ideology" is thus a helpful indicator of differences in the content of indoctrination within democracies and autocratic regimes.

Another defining characteristic of indoctrination content is the level of *contestation.* The key difference in the use and definition of indoctrination within autocracies and democracies is the degree to which the "ideology" has to be unequivocally accepted by the population. We expect democracies to allow a higher degree of contestation. Indeed, citizens are encouraged to be critical, which is a key part of democratic accountability. The competition over ideas and best policies is explicitly democratic. Nevertheless, democracies also require an "unshakable commitment" to their core principles (Easton 1965). Unlike autocracies, however, democracies will base their indoctrination efforts on persuasion rather than inculcating their principles "beyond argument" and "beyond reasoning" like in authoritarian regimes (Woods and Barrow 2006, 71). In autocracies, therefore, we expect contestation to be very limited and guided by a dominant message—for example, the mission to build a communist society. This is achieved through teaching citizens to accept the regime's ideology uncritically and always to accept this "truth" regardless of evidence. Indoctrination in autocracies is expected to close alternatives through the promotion of a single view (Sears and Hughes 2006) and the censoring of any evidence that can be used to construct alternative narratives.

The second element of indoctrination content that we focus on relates to *patriotism.* By encouraging citizens to identify with the wider political community, both democratic and autocratic regimes hope to benefit by generating loyal, self-sacrificing citizens who might even refrain from criticizing the regime (Koesel 2020; Norris 2011; Sardoč 2020). By emphasizing identification with a politically defined community, patriotism is particularly useful as it avoids the negative connotations of ethnocultural nationalism and the risks of alienating minorities (Shevel 2011), and it allows for greater choice of generally appealing political symbols (Seixas 2005).[15]

Furthermore, in being defined by both political principles and symbols, such as loyalty to the constitution (Seixas 2005), the boundaries between the regime and the wider political community as objects of loyalty can easily be blurred (Kodelja 2020), which means that criticism of the incumbent regime can be conveniently labeled as unpatriotic. The use of patriotic education and political communication to limit political dissent is extensively evidenced in autocracies like Russia and China (Zhao 1998). However, the promotion of uncritical forms of patriotism is by no means exclusive to more authoritarian

regimes. Particularly in the context of perceived threats, such as terrorist attacks (Curren and Dorn 2018, 130; Westheimer 2014) or immigration (De Vries 2018), contemporary democracies display a growing emphasis on patriotism in political discourse and education (Wilson 2015). It is therefore not surprising that the compatibility of patriotism with liberal democracy is hotly debated (Sardoč 2020, 105; Soutphommasane 2012).

To conclude, the methods of promoting patriotism through rituals and symbols that create a sense of belonging and loyalty are common across regime types. But at the same time, it is unclear whether the promotion of patriotic symbols indicates a shift away from more liberal understandings of patriotism toward more autocratic or nationalistic values. For this reason, we measure patriotic and democratic content separately. We leave this debate open as an empirical question, which our data will be able to explore.

4. Measuring Varieties of Indoctrination

In this section, we introduce our novel dataset measuring *Varieties of Indoctrination* (V-Indoc) (Neundorf et al., 2023a), which offers unmatched coverage and can facilitate cross-national and cross-temporal studies on the causes and consequences of indoctrination around the world. We first build on our conceptualization of indoctrination to identify 21 indicators of indoctrination in education,[16] which can be aggregated into composite indices that measure the abstract concepts of indoctrination potential and content.[17] These indicators and indices provide novel and detailed insight into aspects of indoctrination in education that are not captured by any other existing dataset on a similar scale.

We also present six indicators of indoctrination in the media. These are less sweeping than our education indicators, given that existing datasets already and quite comprehensively cover numerous topics related to the state's control over the media (e.g., Coppedge et al. 2022; Mechkova et al. 2021). Instead of constructing indicators that contain overlapping information with such datasets, we design our media indicators so that they can be completed by or supplemented with existing indicators to produce more complete measures of indoctrination in the media. In particular, and as we discuss, it may be particularly fruitful and straightforward to combine our data with V-Dem data because both datasets are constructed and formatted in the same manner.

We choose to focus on education and the media with the assumption that these two channels are most comparable across time and space—unlike other channels of indoctrination (e.g., mass organizations, the workplace, or the military), which vary considerably between countries. Given that all countries have always had education and media systems, this allows us to create indicators that are applicable across the world and back in time.

### 4.1. From Abstract Concepts to Measured Indicators

Our key concepts of indoctrination are (1) *indoctrination potential*, (2) *democratic content*, and (3) *patriotic content*. Each of these concepts and their subcomponents, introduced above, are measured using multi-item indices. Below, we explain the indicators that comprise each index as measured for education and the media. Many of our indicators reflect measures in existing scholarship and cross-national datasets, which can in turn be used to validate our indicators (see section 5.2). See figures 2 and 3 for a visualization of the indices and accompanying indicators. All indicators are based on expert survey questions with most indicators having an ordinal four-point scale. For empirical analysis, these indicators can be used on their own or as part of higher-level indices.

In education, some of our indicators pertain to the official school curriculum. Conceptually, they are located between the de jure legislation phase of indoctrination and the de facto implementation stage (see figure 1). To capture the tension between the legislation and implementation phases, where possible, we explicitly instructed experts to prioritize de facto practices in their answers. For example, the indicators related to civics in the curriculum explicitly asked experts not to focus on the de jure subject labels but rather on the de facto subject content. The two indicators closest to the de jure phase are the indicators of centralized curriculum and textbook approval.

4.1.1. Indoctrination through Education. We measure *indoctrination potential* in education as a higher-level index that is composed of two indices: *indoctrination coherence* and *political education efforts*. The *indoctrination coherence* index is composed of two subindices. First, the *control over agents* index measures the extent of state control over teachers and is based on several indicators highlighted in the literature: (1) the existence of teacher unions independent from the state (e.g., Moe and Wiborg 2016; Paglayan 2014), (2) teacher autonomy and teachers' ability to deviate from the curriculum inside the classroom (e.g., Cribb and Gewirtz 2007; vom Hau 2009), and indicators of the likelihood that teachers may be (3) hired (e.g., Pierskalla and Sacks 2020) or (4) fired (e.g., Balcells and Villamil 2020) for political reasons. Second, the *centralization* index[18] includes the degree to which (1) the curriculum in schools is centralized at the national level (e.g., Gvirtz and Beech 2004), and (2) the degree of centralized textbook approval (e.g., Brandenberger 2012; Zajda 1980).

We also create an index for the *political education effort*, which combines three indicators: whether there is a mandatory class on political education (predominantly focused on teaching political values) in the curriculum at the (1) primary and (2) secondary levels, and (3) whether there

Figure 2
Mapping Our Concepts: Indoctrination in Education
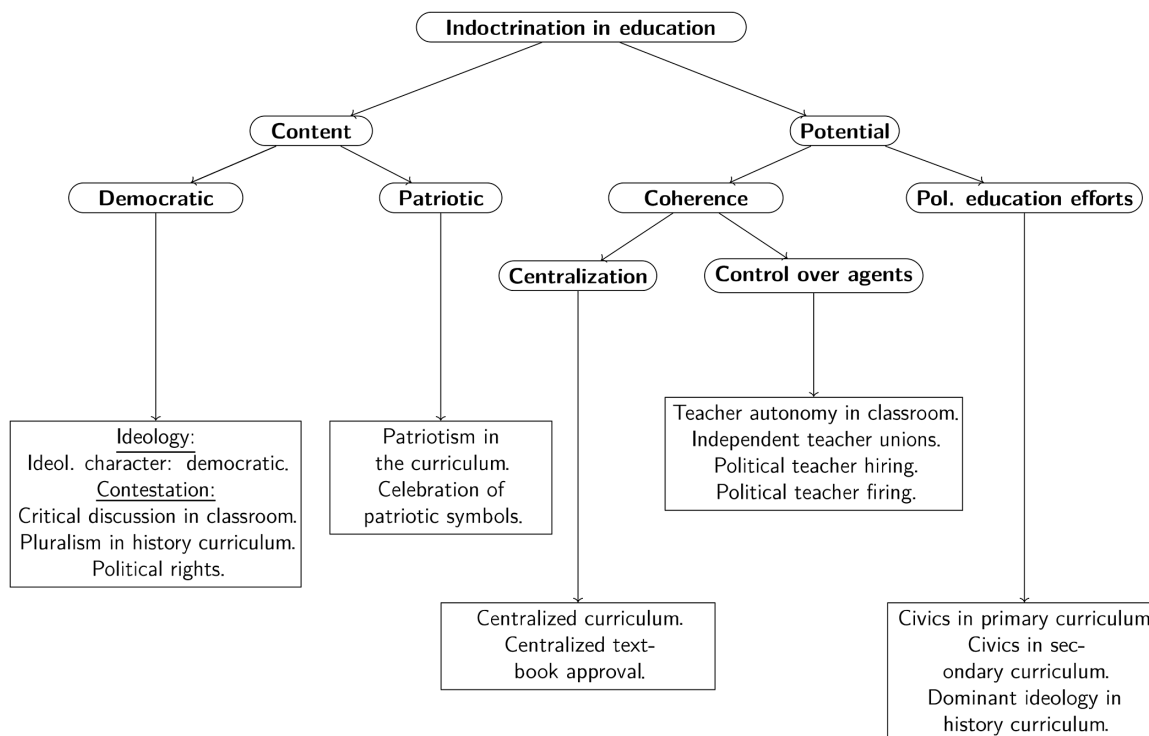
Note: The rounded boxes indicate V-Indoc indices, and plain boxes indicate measured variables (V-Indoc indicators). See figure E-7 in appendix E for more details (i.e., with labels for the V-Indoc indices and indicators added).

is a dominant ideology promoted through the history curriculum.[19] Unlike Del Río, Knutsen, and Lutscher (2023, 6) who collect data on (de jure) mandatory standalone civic-related courses, we leverage education experts' knowledge of school subjects beyond subject labels in the official curriculum. We follow Galston (2001, 219) and explicitly assume that "all education [can be] civic education."[20]

We construct the *democratic content* index using four indicators that assess the extent to which democratic values are emphasized in the official curriculum. V-Indoc contains one indicator of the regime's *ideology* and three proxy indicators for the level of *contestation*. Conditional on the existence of the dominant societal model or ideology promoted in the history curriculum, we firstly are interested in the ideology of the regime. We use the following classification of ideologies,[21] which include (1) nationalism, (2) socialism or communism, (3) restorative or conservative ideology, (4) personality cult, (5) religious ideology, (6) ideology related to ethnicity, (7) clan or tribe, as well as (8) democratic ideology based on teaching democratic norms (liberalism, pluralism) and/or (9) emphasizing democratic institutions (e.g., elections).[22] The regime's ideological character is then recoded into a binary variable that

indicates whether democratic norms or institutions (8, 9) are the principal ideologies that are promoted.[23]

Second, the indicator measuring critical discussion in the classroom probes the level of *contestation* that is promoted in school education. This indicator measures the extent to which students have opportunities to discuss what they are taught in history classes. We model it after similar questions from the International Civic and Citizenship Education Study survey (hereafter ICCS; IEA 2018, 36–39) and the Teaching and Learning International Survey (hereafter TALIS; OECD 2018, 23) on how often tasks assigned by teachers require critical and independent thinking, which is part of learner-centered pedagogy in education for democracy (Schweisfurth 2002, 305). The remaining two indicators are related to contestation indirectly and focus on the curriculum. The pluralism indicator evaluates the extent to which students are exposed to diverse views and/or interpretations of historical events.[24] Lastly, the political rights and duties indicator measures whether subjects that teach political values cover topics related to individual political rights and duties (Willeck and Mendelberg 2022).[25] If democracy is a dominant societal model, this indicator should capture the extent to which the principles of democracy are

Figure 3
Mapping Our Concepts: Indoctrination in the Media
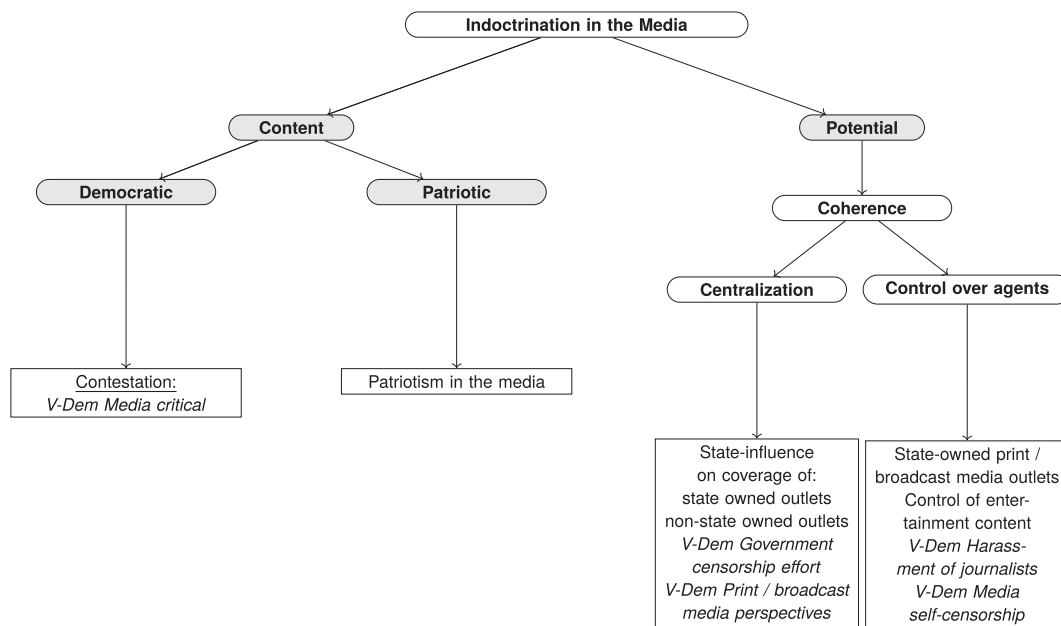
Note: The rounded boxes indicate V-Indoc indices and the plain boxes indicate variables (V-Indoc indicators). We do not have indices of the media *content* (the boxes are grayed out). The *democratic* and *patriotic content* are measured as separate indicators. The index of indoctrination *potential* in the media is equivalent to the index of *coherence* (the box with *potential* is grayed out). For the index of indoctrination *coherence*, we combine the existing V-Dem indicators (highlighted in italics) with the novel V-Indoc indicators. See figure E-8 in appendix E for more details (i.e., with labels for the V-Indoc indices and indicators added).

promoted in the curriculum. We consider these two indicators as necessary conditions for critical discussion in the classroom.

The *patriotic content* index is composed of two indicators that measure the extent to which patriotism is inherent in education: (1) patriotic education in language studies (for example, specific narratives can celebrate the country's military past, national origin stories, or accomplishments in the economic or technological sector);[26] and (2) whether patriotic symbols, such as flags or portraits of leaders, are displayed and celebrated through flag-raising ceremonies or singing the national anthem. We focus on patriotic symbols as these represent the norms and principles of a country, and serve as a means for members of a common community to identify themselves (Margalit and Raz 1990). We measure patriotism as a separate dimension to democratic content as in many contexts patriotism can be promoted alongside either democratic or autocratic values.[27]

4.1.2. Indoctrination through the Media. Figure 3 presents a visualization of the media indices and indicators, which focus on the state's intention to indoctrinate via print and broadcast media.[28] In our approach, we follow Djankov and colleagues (2003) and focus on state ownership of the media and state influence over state and nonstate media as the *intentions* of the state regarding control of the media's content.[29]

The *indoctrination potential* index in the media is equivalent to the *indoctrination coherence* index, which consists of the *centralization* and *control over agents* subindices in the media. These subindices are supplemented with additional indicators from V-Dem data. The former index captures the ability of the state to influence the coverage of political issues by state and nonstate media outlets, and also includes V-Dem's indicators of government censorship and diversity of media perspectives. The latter index is made up of indicators that measure the degree of state ownership of print and broadcast media,[30] the state's control over the production of entertainment content,[31] and two V-Dem indicators that measure the harassment of journalists by the state and media self-censorship.

We do not have an index that is comparable to the *political education effort* index in education. The values and ideologies portrayed in the media can be much more heterogeneous than those taught through education, and thus it would be highly demanding to expect education experts to consistently and accurately code indicators related to the substantive nature of diverse media

landscapes. For similar reasons, our measures of indoctrination content in the media are limited. We have one indicator for patriotic content in the media, which measures the promotion of patriotic narratives in media outlets.[32] While we do not have indicators of democratic content in the media, the V-Dem data contains indicators that can act as a proxy for democratic content such as whether major print and broadcast outlets routinely criticize the government (print/broadcast media critical) (Coppedge et al. 2022, 203).

4.2. Expert Surveys

Our dimensions of indoctrination are latent concepts that cannot be directly observed or measured, but they can be estimated by identifying and drawing on the information contained in observable indicators that reflect these underlying concepts. While factual data (e.g., education statistics) typically capture various outputs related to indoctrination, our focus is instead on measuring the regime's intentions to indoctrinate (see the earlier discussion of figure 1 in section 2). Primary sources (e.g., official documents) can offer pertinent data on policies related to our concepts, but gathering such data for a global sample of countries over an extended period would be highly resource intensive and perhaps even infeasible, especially for older periods. More problematically, information on de jure policies can often fail to sufficiently or accurately capture de facto practices and behaviors, and thus measures based on the former may share weaker causal links with outcomes related to indoctrination. It may be possible to overcome such limitations by collecting and hand-coding archival records of actual indoctrination practices, but data

availability and resource demands would likely constrain such an endeavor to a small subset of countries.

On the other hand, expert surveys offer a viable alternative for developing measures of indoctrination that can be both accurate—and thus useful for testing theoretical propositions—and comprehensive in coverage. Experts can draw on their in-depth knowledge and evaluative judgment of the topics at hand to offer guided insight into our difficult-to-measure concepts (Marquardt and Pemstein 2018),[33] and generate data that can be used to construct novel measures of indoctrination practices around the world.

To achieve the highest possible quality of expert coding, we collaborated with the Varieties of Democracy (V-Dem) Institute at the University of Gothenburg to take advantage of the institute's established data-gathering and methodology infrastructure. After conducting two pilot surveys and several rounds of revisions of the expert survey questions, we reached out to 24,000 education experts from around the world in 2021.[34] More than 1,400 experts expressed interest in participating in the final survey. We then carried out an expert vetting process and fielded the final survey from January to May 2022. Appendix C provides a more detailed discussion of the pilot surveys, the expert vetting process, and the ethical considerations of this study. In the survey, experts were asked to respond to 27 questions related to our indicators through a set of ordinal responses, providing ratings for their country of expertise for every year between 1945[35] and 2021.[36]

760 vetted experts completed the survey and provided responses that cover 160 countries. As figure 4 indicates, we have at least three unique coders for many countries across all regions of the world, though coverage is

Figure 4
Number of Unique Coders by Country
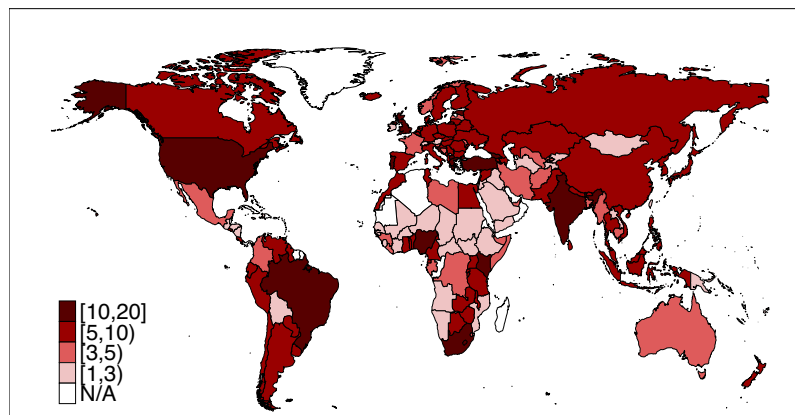
Note: The number of coders may vary across indicators within a country as some experts may not have had the expertise to code all indicators for all years.

Figure 5
Percentage and Number of Countries Covered in the V-Indoc Dataset
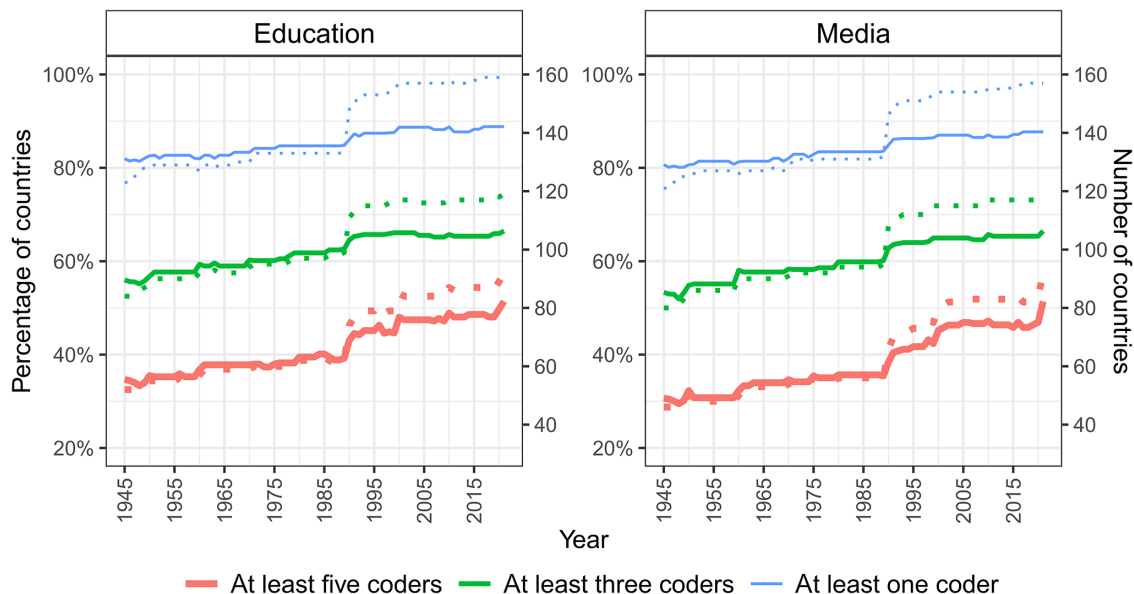
Note: The percentage of countries relative to the total number of countries in the V-Dem dataset (Coppedge et al. 2022) (left axis; solid lines) and the number of countries (right axis; dotted lines) are based on two indicators in the V-Indoc dataset: (1) education (the centralization of the school curriculum) and (2) media (state-owned print media).

relatively more sparse for Africa and the Middle East. The median number of coders per country-year is five, with a minimum of one coder (e.g., for Angola, Burkina Faso, Bolivia, Gambia, etc.) and a maximum of 20 coders (Brazil, the United States). While democracies tend to have a greater number of coders than autocracies, many autocracies nonetheless draw on multiple coder responses (e.g., the mean number of coders for democracies and autocracies in 2021 is 6.58 and 4.83, respectively).[37]

In addition, figure 5 plots over-time variation in the number of coders for one education indicator and one media indicator.[38] When limiting the sample to countries with at least three expert coders, our data covers around 120 countries for the most recent years, which represents over 60% of countries worldwide. Our full sample (i.e., including countries with fewer than three coders) covers about 90% of countries. The remaining countries that are not covered in our data are predominantly small states with fewer than one million inhabitants. These countries were however not targeted in the expert recruitment process.

Because the expert survey relies on human judgment, some responses may reflect coder bias (e.g., Little and Meng, forthcoming). Coders may also draw on cognitive heuristics when responding to questions (e.g., Weidmann 2023).[39] To mitigate these concerns, we follow the V-Dem project (Knutsen et al. 2023, 14–15) by designing very specific items that should be less prone to general bias

and using ordinal response scales with specific definitions for each category; different categories are aimed to serve as distinct "benchmarks" to reduce ambiguity. While some bias may nonetheless be present in coder responses, V-Dem's measurement model adjusts for variations in both expert scale perceptions and reliability when constructing estimates to further address such issues (Pemstein et al. 2020).

4.3. Measurement Model
We use V-Dem's Bayesian item response theory measurement model to convert the expert-coded ordinal responses into a country-year format for each of our indicators (Pemstein et al. 2020). More specifically, these ordinal responses are regarded as subjective ratings of latent (i.e., not directly observable or measurable) concepts of indoctrination, which are mapped to a single continuous variable by the measurement model. When constructing estimates of these variables, the measurement model accounts for cross-coder divergences (i.e., differences across coder responses), disparate coder thresholds (i.e., different interpretations of responses), coder reliability (i.e., systematic or nonsystematic coder mistakes), and coder confidence ratings (i.e., coder confidence in their responses may vary across questions or years). This further reduces potential sources of bias that may be inherent in individual coder responses and strengthens the cross-national comparability of the estimates.[40]

The measurement model then aggregates the indicators to construct our indices of indoctrination. The aggregation method for the indices depends on the number of indicators that comprise each index: indices that have more than two components (e.g., the *indoctrination potential* and *democratic content* indices in education) are aggregated using Bayesian factor analysis, while those that have two components are aggregated via averaging.

In sum, the measurement model generates posterior distributions that represent the range of probable values for each country-year estimate of the indicators and indices. The medians of these distributions can be treated as point estimates and will typically be the variable of choice for quantitative analysis. The dataset also provides the lower and upper bounds of the 68% credible interval, which captures the interval in which the measurement model places 68% of the probability mass for each estimate. The interval generally approximates bounds that extend one standard deviation from the median and reflects measurement uncertainty—narrower (wider) credible intervals are associated with greater (lower) certainty about our estimates.[41] As a general rule of thumb, one can be reasonably confident that the difference between two point estimates is not due to measurement error if their respective 68% credible intervals do not overlap (Pemstein et al. 2020). In addition, the dataset also presents information about the number of coder responses used to construct each country-year observation for our indicators and indices.[42] Estimates that draw on one or two coder responses could be less reliable or more susceptible to coding errors. As such, and in general, we suggest using observations that are coded by at least three experts to achieve higher confidence in the results or checking that results remain robust when dropping observations with fewer than three coders.

5. Data Validation

The V-Indoc dataset offers the most expansive measures of indoctrination to date as it covers 160 countries from 1945 to 2021 for a total of 10,923 country-year observations.[43] In this section, we explore and validate our measures using tests of face, convergent, and construct validity.

5.1. Face Validity

We first investigate the face validity of our measures by demonstrating that they conform to existing expectations about levels of indoctrination around the world (Adcock and Collier 2001). To this end, we examine the cross-national and cross-temporal variation in our three main indices of indoctrination in education—that is, *indoctrination potential, democratic content,* and *patriotic content.* For space reasons, we focus on education in this section. Corresponding plots for the indoctrination potential index in the media are presented in appendix G.[44]

5.1.1. Cross-National Variation. Figure 6 shows cross-country scores for the *indoctrination potential* index in 2021, which range from 0 (low potential) to 1 (high potential). The patterns are consistent with expectations, as more authoritarian countries—notably North Korea (0.932) and China (0.866)—generally possess a higher potential for indoctrination (see figure 7). Furthermore, figure 8 plots levels of *democratic* and *patriotic indoctrination* content in 2021. As expected, consolidated democracies generally possess higher levels of democratic indoctrination content and lower levels of patriotic content than other types of regimes. As seen in figure 9, and unsurprisingly, the indoctrination content in North Korea is the least democratic (0.031) and the most patriotic (0.96). China's indoctrination content is also less

Figure 6
Indoctrination Potential in Education (2021)
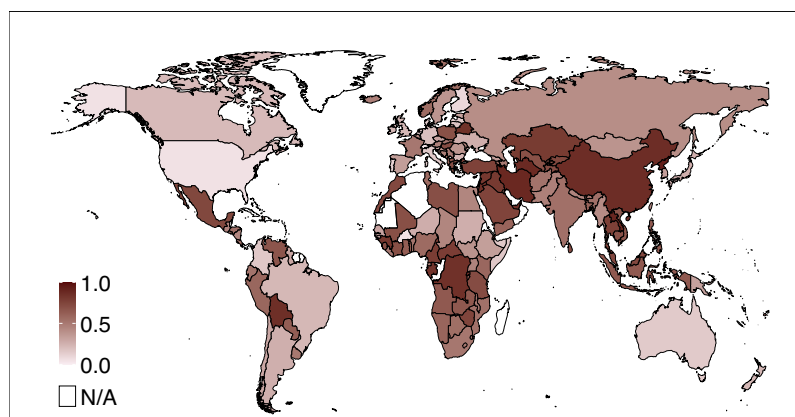
Figure 7
Indoctrination Potential in Education (2021): Bottom/Top Cases
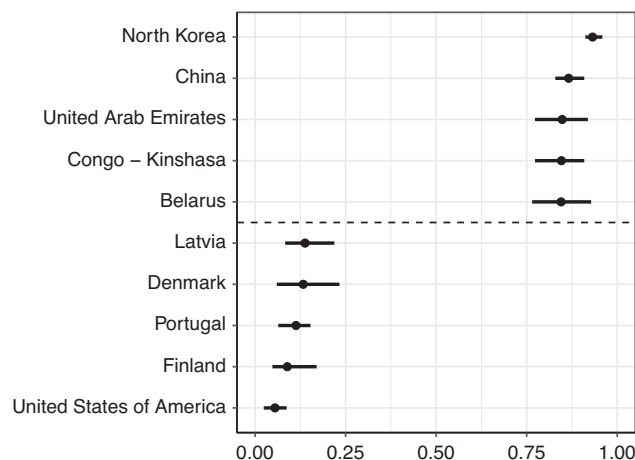
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals. It shows the five highest/lowest scoring countries on the index that are coded by at least three experts on average. The full list of countries can be seen in appendix H.

democratic (0.295) and more patriotic (0.824) than that of many countries.

The association between levels of democracy and our indoctrination indices can be observed more systematically in figure 10, which shows the distributions of V-Dem's liberal democracy index and our three main education indices, along with pairwise correlations and scatterplots. In accordance with the maps, these plots indicate that democratic countries are more likely to score higher on the *democratic content* index and lower on the *indoctrination potential* and *patriotic content* indices.[45] Figure 11, which shows temporal trends in the indices across democracies and autocracies (as categorized by V-Dem), also corroborates such patterns.[46] The figure also reveals a noticeable downward and upward trend in the *indoctrination potential* and *democratic content* indices from around 1985 to 1990, respectively, which coincides with the rise of competitive authoritarian regimes and the collapse of the Soviet Union.

Nonetheless, these figures also indicate that variations in indoctrination strategies are not fully captured by levels of democracy/autocracy. For example, Norway is one of the most democratic countries but scores 0.566 on the *indoctrination potential* index in 2021, which is above the mean index score for that year and higher than the scores of a large subset of autocratic countries. Conversely, Benin ranks 95th out of 160 countries on V-Dem's liberal democracy index in 2021, but its concurrent score on the *democratic content* index ranks 22nd, which exceeds the scores of many democratic countries such as Cyprus and Japan.

In addition, if a country possesses high potential for indoctrination but is not committed to instilling a specific ideology, or strives to deliver education content that is

strongly autocratic/democratic but is handicapped by low potential for indoctrination, then indoctrination in general may have diminished effects. In other words, indoctrination may only have discernible effects when both indoctrination potential and content (whether autocratic or democratic) are high. In appendix K, we demonstrate one method of constructing a composite indoctrination index in education that captures both indoctrination potential and democratic indoctrination content and presents accompanying descriptive figures for this composite index.

5.1.2. Case Study: Russia. As we mentioned in the previous conceptual discussion (see section 4), some indicators are included in the aggregate indices of indoctrination potential and content pertaining to the official school curriculum. In this section, we use the case of Russia to explore the tension between the de jure and de facto changes using the V-Indoc data.

Figure 12 plots temporal trends across the three education indices for Russia (the top panel), as well as selected indicators included in these aggregate indices (the bottom panel). We focus on the following de facto indicators: (1) whether teachers can be fired for political reasons (part of indoctrination potential), (2) whether students are allowed to discuss what they are taught in history classes (part of democratic content), and (3) to what extent patriotic symbols are celebrated in schools (part of patriotic content). In addition, we combine our indicators with the data on education reforms (in Russia) from the World Education Reform Database (WERD) by Bromley and colleagues (2022). For Russia, the WERD codes the reforms between 1939 and 2011.

Figure 8
Indoctrination Content in Education (2021)
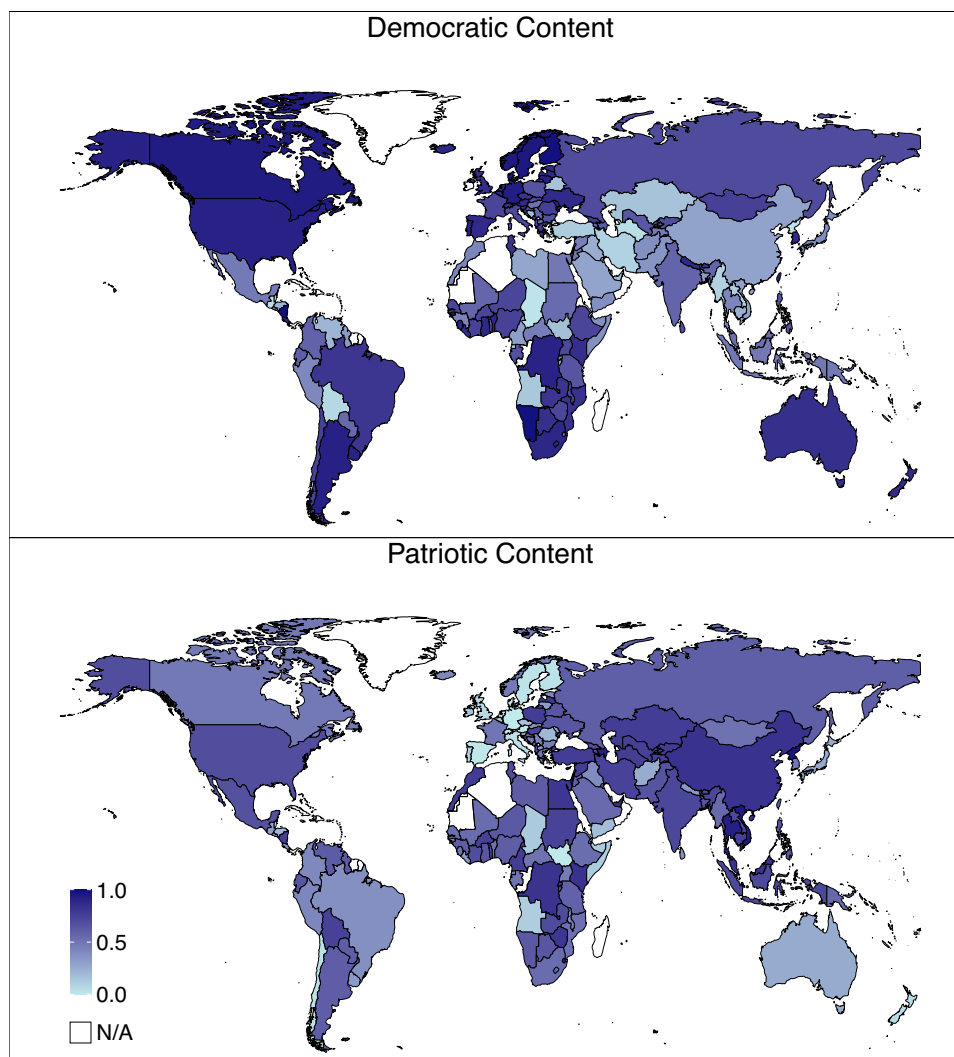
After 1945 and until the late 1980s we do not observe significant variation in these indices: indoctrination potential remains high, and the content is both highly authoritarian and patriotic. This corresponds with the aftermath of the "Great Patriotic War" (World War II), which saw Soviet education ideology shift to being more militaristic and patriotic (Zajda 1980, 206–7) to cultivate obedient and loyal citizens (Koesel 2020, 250).

In the late 1980s, with *perestroika* and *glasnost* under Gorbachev, we observe a rise in the *democratic content* index after a series of education reforms were made to promote democratic ideas in the curriculum (Bromley et al. 2022). At least de jure, Gorbachev promoted a more critical approach to education in the classroom (a dialogue instead of a monologue): "Whereas teachers were previously expected to teach that the Party was infallible, … as a

result of glasnost, they [now could] acknowledge to students that the Party can indeed make mistakes" (Long 1990, 411, 414).

The first changes in the de facto indicators of political teacher firing (part of indoctrination potential) and critical discussion in the classroom (part of democratic content) precede the de jure changes of the late 1980s. The figure also shows a sharp decline in the indoctrination potential and patriotism indices after the collapse of the Soviet Union; the introduction of the 1992 Law on Education, which in part emphasized freedom and pluralism in education (Bromley et al. 2022); and the approval of the first post-Soviet textbooks in history by the Ministry of Education in 1992 (Zajda 2017, 7).

Beginning in the 2000s, these trends started to reverse with Putin's rise to power. At least as far back as 2003,

Figure 9
Indoctrination Content in Education (2021): Bottom/Top Cases
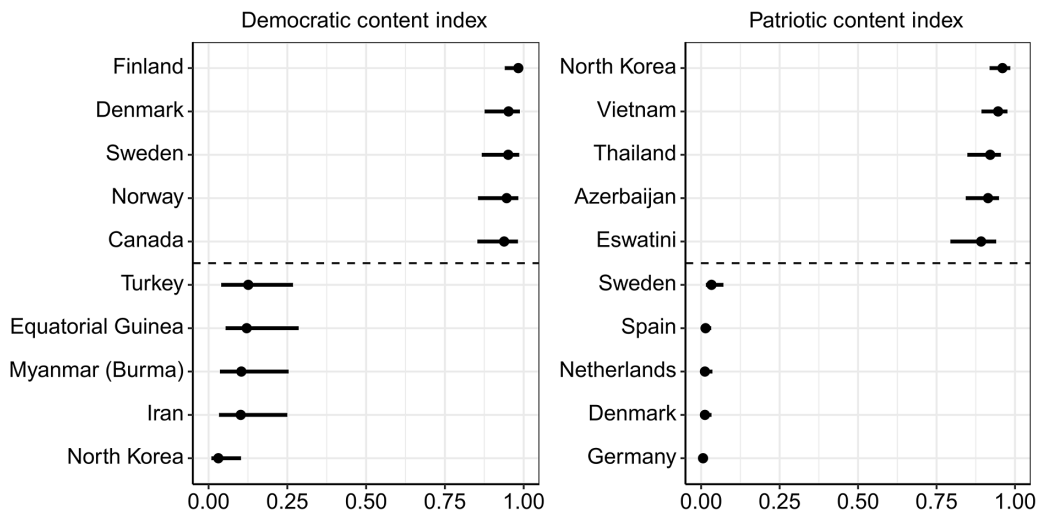
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals. It shows the five highest/lowest scoring countries on the index that are coded by at least three experts on average. The full list of countries can be seen in appendix H.

Putin expressed the hope of further centralizing the education system and strengthening patriotic education. After meeting with history scholars, Putin expressed concerns that diverse narratives in history books should not "become a platform for a new political and ideological struggle" and that textbooks should "inspire, especially among young people, a feeling of pride for their own history and for their country" (Putin 2003). Moreover, around the annexation of Crimea in 2014, the Russian government implemented various laws that would penalize "falsifying" history and criticizing Russia's military glory in a way that is "disrespectful to society." In 2014, Article 354.1 was added to Russia's criminal code and used to prosecute the falsification of historical narratives (Levchenko 2018). Teachers also began to face increased pressure to promote a single patriotic narrative in schools, as the standards for history education were revised in 2014 to promote a unified concept of teaching Russian history (Zajda 2017, 7), and Putin declared patriotism to be the main unifying national ideology in Russia in 2015 (*Moscow Times* 2016).

Such de jure changes are reflected in our key indices of indoctrination in education. The post-2000 patterns in our indices and indicators (as well as a high frequency of education reforms coded in the WERD during this period) correspond with Putin's efforts to recentralize the education system and promote a dominant narrative that would resolve the various "contradictions" in the understanding of Russia's history, and foster a "positive" take on Russia's history to increase levels of patriotism among the youth. Interestingly, unlike the indicators of

political teacher firing and critical discussion in the classroom, the de facto emphasis on patriotic symbols in schools remained high until the late 1980s, and then gradually decreased and stabilized at a lower level from the early 1990s until 2014. During this period, patriotism in the official curriculum—a more de jure component of patriotic content—was the main driver of the observed changes in the aggregate index. Unlike the indicator of patriotic symbols, the emphasis on patriotism in the official curriculum started to increase even prior to 2014. The political pressure on teachers increased (e.g., Kravtsova 2018) and critical discussion in the classroom decreased after the 2014 annexation of Crimea.

Overall, de jure changes in education policies should be expected to generally correspond with de facto changes in education, though of course, this may not always be the case (e.g., due to ineffective implementation [Viennet and Pont 2017]). In addition, not all changes in our indices and indicators are driven by actual reforms. In the case of Russia, for example, changes are driven by conflicts and perceived threats, consistent with the arguments made by Paglayan (2022a) and Aghion and colleagues (2018).

5.2. Convergent Validity

A measure with convergent validity should share empirical associations with other measures of the same concept (Adcock and Collier 2001). Given the relative dearth of comprehensive comparative data on indoctrination, we focus on the indicators that factor into our

Figure 10
**Democracy and the Indoctrination Indices in 2021**
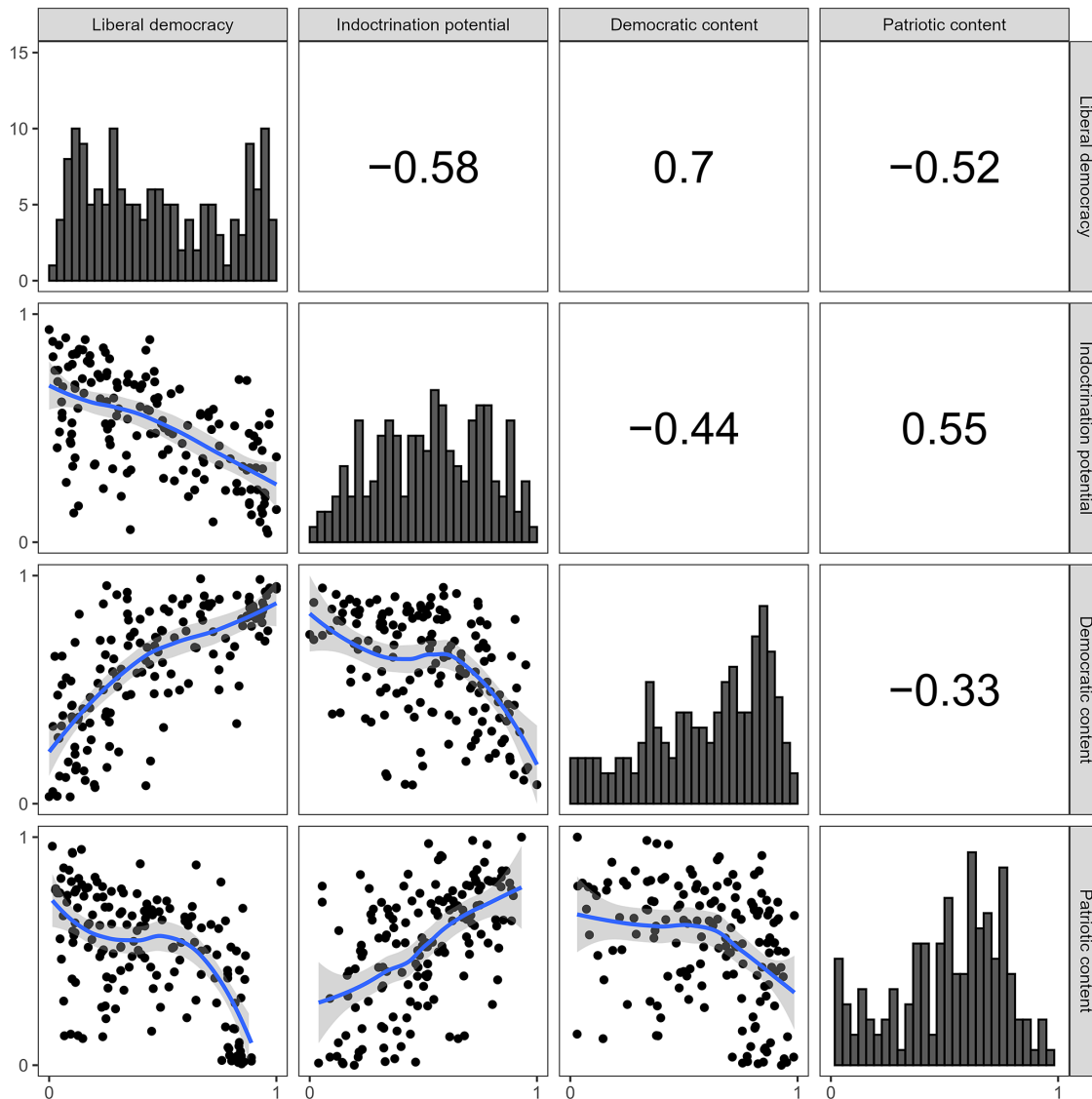
Note: Lines and confidence intervals are produced by LOESS smoothing. Both (1) country-labeled plots for the first column and (2) correlations between these indices and other measures of democracy can be seen in appendix I.

indices of indoctrination. We validate our indicators against comparable variables from multiple sources, such as expert-coded variables from V-Dem, factual data from the World Bank, and published academic works. It should be noted that this exercise is not possible or limited for some indicators as alternative measures may not exist, offer restricted coverage, or only partially overlap with the content of our indicators. We identify potential validation variables for 22 of our 27 indicators.[47]

In table 1, we report the five highest and lowest correlations (for validation variables that are continuous) and correct classification rates (for validation variables

that are categorical)[48] from this exercise. Appendix L reports the full list with more detailed information about the validation variables. On average, the mean magnitude of the correlations/classifications is 0.57,[49] which can be considered to be quite strong given the content of many validation variables only partially overlap with those of our indicators. For example, the correlation between the education requirements for primary school teachers indicator and the World Bank's teacher training variable is the weakest, though this is likely because the former distinguishes between different levels of education requirements while the latter simply measures the percentage of teachers who have received the minimum

Figure 11
Indoctrination Potential and Content in Education across Regimes
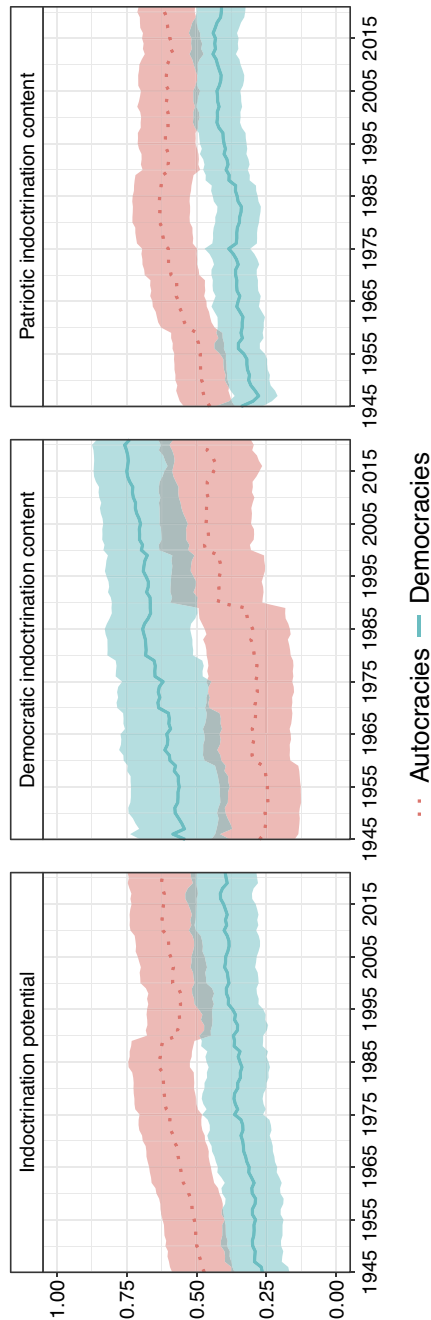
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

⋯ Autocracies — Democracies

training requirement.[50] We also note that our media indicators appear to consistently perform very well in these tests despite being coded by education experts.

5.3. Construct Validity

Construct validation is based on the premise that a valid measure of a concept should behave as theoretically expected when used in evaluations of hypotheses that involve the concept (Adcock and Collier 2001). To this end, we test whether our index of *indoctrination potential* in education corroborates Linz's (2000) argument that military regimes are less likely to engage in indoctrination relative to other types of autocratic regimes. According to Linz (163–69), military authoritarian regimes are characterized by vague "mentalities that are more difficult to diffuse among the masses [and] less susceptible to be used in education," and the military regime's lack of ideology limits its ability to engage in "political socialization and indoctrination."

We first classify autocratic regimes as dominant-party, personalist, military, or monarchy using the Autocratic Regimes dataset (Geddes, Wright, and Frantz 2014). We estimate a country fixed-effects regression model with the *indoctrination potential* index as the dependent variable and dummy variables for each of the autocratic regime types with military regimes excluded as the reference category. We also include logged GDP per capita as a general control for levels of economic development and state capacity. The analysis covers 103 countries from 1946 to 2010 for a total of 4,018 observations. We also repeat the analysis after constraining our sample to observations for which the mean number of coders for the indoctrination potential index is at least three. This reduces our sample to 72 countries and 2,563 observations. Coefficient plots of the results and corresponding 95% confidence intervals are presented in figure 13, and summaries of the variables and full results are reported in appendix M.

In accordance with Linz's prediction, the results indicate that both dominant-party and personalist autocratic regimes exhibit higher levels of indoctrination potential than those ruled by the military.[51] These findings suggest that the centralization of decision-making power in the hands of a single leader (Geddes, Wright, and Frantz 2014; Linz 2000, 87–90) in personalist regimes might extend to the centralization of education. For example, Stalin was known to personally edit and approve school textbooks (Brandenberger 2012), reflecting his desire to personally control education. On the other hand, and interestingly, the model indicates that the level of indoctrination potential observed in monarchies is far *lower* than that observed in other types of autocratic regimes, including military regimes.[52] Moreover, our results remain robust when constraining our sample to observations that rely on at least three coders.

Figure 12
**Indoctrination Potential and Content in Education (Russia)**
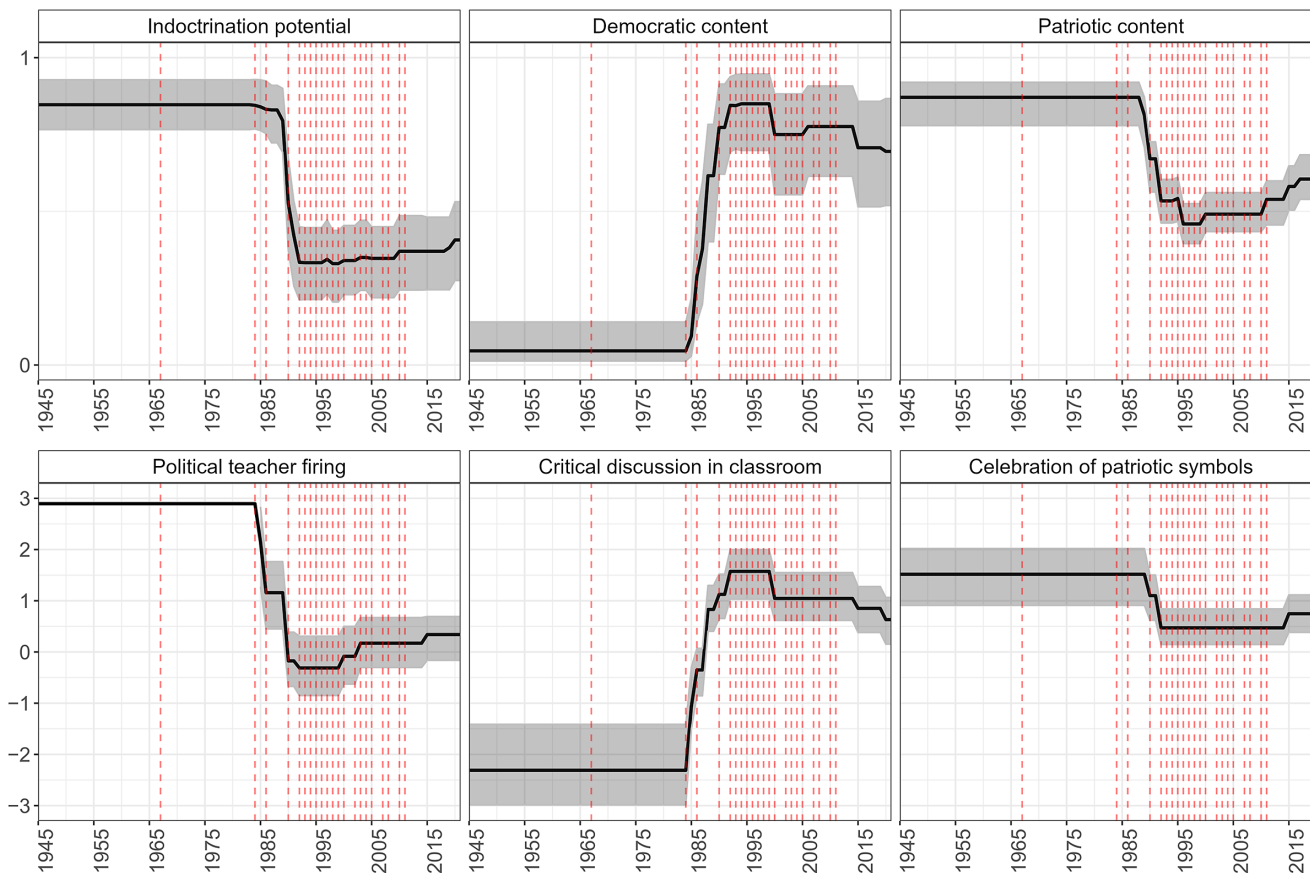
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals. The indices vary between 0 (low values) and 1 (high values). The indicators reflect interval measures converted by the measurement model, and vary between roughly –3 (low values) and 3 (high values). Red vertical lines indicate education reforms from the WERD (Bromley et al. 2022). In the case of Russia, education reforms are coded in the WERD for the period between 1939 and 2011. The top panel plots aggregate indices of indoctrination potential and democratic/patriotic content. The bottom panel plots corresponding indicators for each of the aggregate indices: political teacher firing for the index of indoctrination potential; critical discussion inside the classroom for the index of democratic content; patriotism in the curriculum for the index of patriotic content.

Table 1
Highest and Lowest Correlations/Classifications

V-Indoc indicator	Validation variable	Correlation/ classification
Centralized textbook approval	Is there evidence that the textbook has been developed to meet official curriculum requirements?	0.74
Democratic ideology character in the curriculum	To what extent is the ideal of electoral democracy in its fullest sense achieved?	0.72
Political influence, state-owned media	Of the major print and broadcast outlets, how many routinely criticize the government?	−0.70
Teacher firing for political reasons	If a citizen posts political content online that would run counter to the government and its policies, what is the likelihood of that citizen being arrested?	−0.68
Critical engagement with education content	Does the textbook generally assume that the student should develop his/her own point of view, or interpretation, of history or social issues?	0.67
Teacher hiring for political reasons	To what extent are appointment decisions in the state administration based on personal and political connections, as opposed to skills and merit?	−0.47
Political rights and duties in the curriculum	To what extent does the textbook discuss rights, freedoms, and liberties?	0.45
Ideology in the curriculum	To what extent does the current government promote a specific ideology or societal model to justify the regime in place?	0.42
Political rights and duties in the curriculum	To what extent does the textbook discuss duties, responsibilities, and obligations of citizenship?	0.36
Education requirements for primary school teachers	Trained teachers in primary education are the percentage of primary school teachers who have received the minimum organized teacher training (pre-service or in-service)	0.34

Note: Underlined values represent classification matches conducted with ordinal versions of the V-Indoc variables. See appendix L for the complete list and more information about the validation variables.

Figure 13
Indoctrination Potential in Education across Autocratic Regime Types
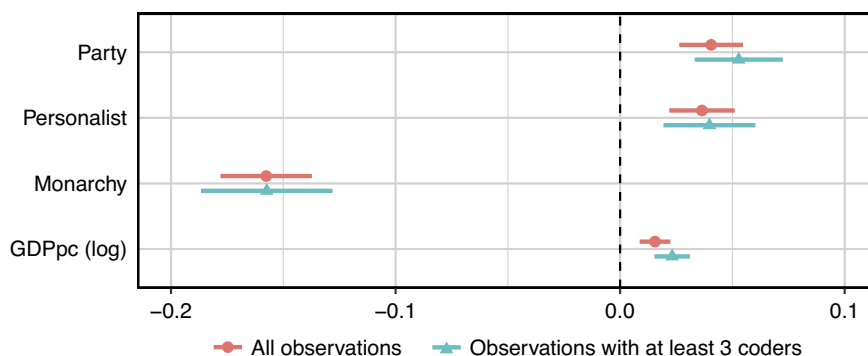
Note: Military regimes are excluded as the reference category in the fixed-effects model. The figure plots coefficient estimates along with the lower/upper bounds of the 95% confidence intervals. The full results are reported in table M-5 in appendix M.

These results corroborate Linz's argument concerning indoctrination and autocratic regime type, which lends positive evidence regarding the validity of the *indoctrination potential* index.[53] Furthermore, the results present some novel insights into how autocratic regimes might differ in their potential capacity to indoctrinate. Without the V-Indoc data, it was unknown that monarchies may be the least likely of all regime types to use indoctrination. This finding could be investigated in more detail in future research.

6. Conclusion

What is indoctrination? Why and when do states invest in it? And what are the political consequences of indoctrination?

We require a clear concept and comprehensive comparative measures of indoctrination to systematically answer such questions. Synthesizing insights from the literature on education, socialization, and nation building, among others, we have argued that indoctrination is a regime-driven process of socializing "ideal-type" citizens who espouse the values, principles, and norms of a given regime. Indoctrination is a multidimensional process that involves not only content that corresponds to a regime's ideology but also the institutional potential of inculcating the entire population with a coherent message through control of the creation of the content and the agents who propagate it. Indoctrination targets people throughout different times of their lives: regimes use education to leverage the powerful long-term effects of early life socialization and the media to continue reinforcement in later life.

Unlike existing datasets that focus on the quality and quantity of education, our indicators are tailored to capture the multidimensional nature of indoctrination. The expert-coded data introduced in the paper allow for broad and consistent temporal and geographic coverage of 160 countries between 1945 and 2021. With the help of topic-specific country experts, we have gathered information on mostly de facto indoctrination that cannot be fully observed through de jure indicators. While expert surveys might suffer from certain biases (Little and Meng, forthcoming; Marquardt and Pemstein 2018), they are more feasible in terms of coverage. Nevertheless, our dataset is limited temporally as it starts only in 1945, thus missing the initial wave of education expansion in the age of nation and state building, particularly in established democracies. Future data collection can address this gap.

The breadth and depth of our V-Indoc dataset allows the systematic study of comparative questions of how and when regimes invest in indoctrination and the implications of indoctrination on regime survival and political attitudes. Our expert-coded indicators can potentially be compared to similar indicators coded from primary and secondary archival sources (e.g., Del Río, Knutsen, and Lutscher 2023; Guevara, Paglayan, and Pérez Navarro 2018). Our education data will allow researchers to explore substantive as well as methodological questions.

We consider that one of the main advantages of our novel V-Indoc dataset is that it allows scholars to test various conceptualizations of indoctrination and measure them empirically. Those who prefer a narrower definition of indoctrination (compared to our broader definition of regime-led socialization) could use the original V-Indoc indicators instead of the constructed indices. For example, following the definition of indoctrination more widely used in the philosophy of education, the indicator for critical thinking can be used as a standalone proxy to represent indoctrination whereby the absence of critical engagement with education content constitutes the presence of indoctrination.

Despite its richness, the V-Indoc data has some limitations. For example, the data focuses on indoctrination in formal public or publicly funded schools and the media only. Future research should further explore how these two central channels relate to other potential indoctrination settings, such as voluntary associations and the workplace.

Supplementary Material

To view supplementary material for this article, please visit http://doi.org/10.1017/S1537592723002967.

Notes

1 The relevant literature on indoctrination and nation building uses a variety of terms to designate who is indoctrinating—e.g., the state, regime, and government. We use the term "regime" to apply in both autocratic and democratic contexts as a shorthand to mean the wider ruling group of elites within either regime type.

2 Indeed, congruence between the views and principles of the regime and those of the citizenry can promote social and political order across different types of regimes (Almond and Verba 1963; Claassen 2020; Easton 1965; Levi, Sacks, and Tyler 2009; Norris 2011). According to Lipset (1959, 83), for example, legitimacy, or the belief in the appropriateness of political institutions, is a key "requisite" of stable democracy.

3 For more information and comparisons with the existing cross-national datasets, please see appendix A.

4 Perhaps not surprisingly, the existing scholarship has predominantly focused on indoctrination in education. Between 60% and 75% of academic texts in social sciences published between 1900 and 2020 that mention indoctrination also refer to education or schools (see figure B-4 in appendix B). For more

discussion of the history of the term "indoctrination," see appendix B.

5 One exception includes the study by Cantoni and colleagues (2017), where they demonstrate the strength of school indoctrination in the case of China by studying the effects of introducing new pro-regime content in the curriculum. Their results show that a curriculum reform led to higher trust in government officials and a realignment of views on democracy with those promoted by the authorities.

6 One important exception is the study of the regime's leaked propaganda communication in China by King, Pan, and Roberts (2017).

7 We acknowledge that we do not directly observe what is happening inside the classroom. At the stage of on-the-ground implementation, other actors, especially teachers, can interfere with the regime's indoctrination efforts. Such cases are tricky to uncover in practice. Gvirtz and Beech (2004, 376–77) examined student notebooks in Argentina in the 1970s and uncovered that "even in this highly centralized model, schools and teachers generally discarded certain themes that were included in official study plans, and included some non-official contents into their lessons," and that "teachers also resisted the ideological content in curricular documents." See further discussion in section 4, as well as the discussion of the trade-offs associated with our expert-based approach in section 4.2.

8 Armstrong (2022, 273) notes that the "*uncritical implantation* of beliefs" (Gatchel 1959, 309, emphasis added) is a common aspect of the definitions of indoctrination in the philosophy of education. Here we explicitly divert from this "pejorative meaning" (Callan and Arena 2009, 105) attached to the term and instead go back to its origin as a synonym for instruction. Our definition of indoctrination makes the enhancement of critical thinking an essential component of regime-led political socialization efforts in democracies. In our view, it is an empirical question of whether and how democracies and autocracies vary in their efforts to enhance critical thinking among their citizens. Our data allows us to answer this question, and results are presented in figure B-5 in appendix B, where we discuss this issue in more detail.

9 "Indoctrination need not end with school" (Hassan, Mattingly and Nugent [2022, 161]). Focusing only on these two channels of indoctrination is a limitation of our study. We would expect that if indoctrination efforts are high through education and the media, the regime will most likely put effort into indoctrinating through other channels such as mass organizations or the workplace, assuming that the state has some influence over these settings. We would expect other channels to have weaker effects, as they firstly have

weaker state control and secondly usually only affect a subset of the population (e.g., the military), while the entire population is exposed to education and the media.

10 Similar to education, indoctrination through the media can be used for nation-building purposes —i.e., to strengthen nationalistic and patriotic identification (Blouin and Mukand 2019; DellaVigna et al. 2014). Communication channels are not limited to traditional media outlets. The regime's intention to indoctrinate can encompass arts and culture (Belodubrovskaya 2017; Esberg 2020; Kenez 1985). For example, the Ministry of People's Enlightenment and Propaganda run by Goebbels consisted of departments handling the press, radio, theater, music, creative arts, and film (Lee 2010, 53).

11 Unfortunately, we do not have similar indicators for the media.

12 Indoctrination attempts after the first wave of literacy expansion might not have the same strength of effects (Darden and Grzymała-Busse 2006). Furthermore, the potential to indoctrinate is not the same as state capacity in general (Hanson and Sigman 2021). States may effectively extract tax revenues, maintain an effective military, and deliver high standards of medical care and education without prioritizing the political socialization of citizens through education or the media.

13 Our distinction is inspired by Easton's (1965) distinction between political objects and a political system. Citizens' national identities and patriotic loyalties to the state may not always coincide with support for the regime *in situ*. Our distinction is important, particularly in the post-1945 context where nation and state building is largely complete, and yet we still have regime change.

14 Many people associate certain ideologies, such as communism or fascism, with indoctrination, which certainly inspired important work in this area (Arendt 1951; Friedrich and Brzezinski 1956). Figure B-3 in appendix B confirms that the bulk of the earlier academic works about indoctrination (especially between 1930 and 1970) make reference to either of these all-encompassing ideologies. However, recent research that mentions indoctrination increasingly refers to regime legitimacy or weak ideologies such as nationalism, which constitute more than 50% of studies that refer to indoctrination in the past 20–30 years.

15 While there is an agreement in the literature that patriotism signifies a deeply felt attachment or pride and love for one's country or nation (Sardoč 2020, 3), there is also much agreement that patriotism is not the same as nationalism conceptually, the former being an attachment to the political rather than a

more ethnocultural community (Blattberg 2020). In a well-known study, Kosterman and Feshbach (1989) empirically distinguish between nationalist and patriotic attitudes. However, Mylonas and Tudor (2023) critique the distinction, arguing that philosophers and political scientists label forms of nationalism they find personally acceptable as "patriotism." In appendix N we further explore the relationship between patriotism and nationalism, which are only moderately related.

16 We focus on the regime's indoctrination efforts —i.e., what happens in public, or publicly funded, schools. This is how we define public education for the purposes of the expert survey provided to the experts: "We are interested in formal public or publicly funded education: that is, schools that are controlled, managed, and funded by the public sector (a relevant national/subnational/local public authority), as well as schools that are partially funded or subsidized by the public sector but operated by a private body (for example, schools that charge tuition but also receive some public funds or subsidies). We are not interested in schools fully controlled, managed, and funded by a private body (for example, a nongovernmental organization, a religious body, a special interest group, a foundation, or a business enterprise). This means, for example, that religious schools will be included in our definition only if they are operated by a public authority or publicly funded or subsidized by the public sector" (Coppedge et al. 2022, 87).

17 Note that 15 of the 21 indicators of education are used to construct our indices; some are used as filtering variables while others did not present a sufficient match (either substantively or empirically) with our indices.

18 Ansell and Lindvall (2020) construct a similar index of centralization in primary education in the pre-World War II period.

19 We use history as a proxy to capture whether a dominant ideology is incorporated into teaching, as it can be a highly politicized subject that is almost universally taught across space and time (unlike many other subjects) (Nelson 2015; Wojdon 2018; Zajda 2017).

20 Civic education was a separate subject in the school curriculum only in 11 out of 24 countries in 2016; in most cases it was integrated into other subjects (Schulz et al. 2018, 16).

21 Unlike the existing V-Dem indicator of government ideology (Coppedge et al. 2022; Tannenberg et al. 2021), the V-Indoc indicator of ideology character includes democracy as an ideology.

22 Coders could pick up to two ideology options. If coders pick both or one of democratic options (8) or (9), democratic content is coded as 1. If coders pick

any of the remaining ideological options, democratic content is coded as 0.

23 All ideology types are included in the V-Indoc data as indicators and can be explored separately.

24 We use history as a proxy to capture a possible tension between the state-approved historical narratives and alternative interpretations.

25 We model this indicator after the ICCS question on "promoting knowledge of citizens' rights and responsibilities" (IEA 2018, 36–39).

26 We focus on language studies to capture variation in patriotic education across different contexts and over time. Measuring our concept for a subject that is predominantly political, such as history (e.g., Wang 2008; Zajda 2017), can produce artificially high levels of patriotism in the curriculum. Although even math can be a political subject (e.g., Wojdon 2018), on average, we would expect to see low levels of patriotism promoted via the math curriculum. We expect patriotic education via the language curriculum to be located between the two extremes (e.g., Starkey 2007).

27 Some forms of patriotism promote loyalty to democratic principles—e.g., "civic patriotism" (Seixas 2005)—whereas others might focus on uncritical loyalty and self-sacrifice—e.g., through military service (Bækken 2019).

28 With the rise of the internet and social media (and the loss of monopoly over information dissemination), autocrats' strategies include internet shutdowns (Vargas-Leon 2016), strategic censorship (King, Pan, and Roberts 2013; Roberts 2018; 2020), and distraction (King, Pan, and Roberts 2017; Sobolev 2019; Stukal et al. 2019). Existing V-Dem data already include many of these indicators (Coppedge et al. 2022; Mechkova et al. 2021).

29 Djankov and colleagues (2003) find that state ownership of the media leads to state capture and undermines media pluralism.

30 We model our print/broadcast indicators after the cross-sectional media concentration variable from Djankov and colleagues (2003) and Guriev and Treisman (2020) (broadcast only) and extend their coverage over time.

31 Censorship of the arts, such as in films, can be used to impact popular support for the regime (Esberg 2020).

32 The most common topic in modern autocrats' political communication is nationalism and national pride, while democratic leaders appeal to collective memory (Maerz 2020, 532).

33 While also navigating potential de jure and de facto tensions.

34 Existing data and indicators that tap into aspects of media indoctrination are more widely available. Examples include the media battery of the V-Dem dataset (Coppedge et al. 2022) and the data of the

Digital Societies Project (Mechkova et al. 2021). See appendix A for a more detailed list. As a consequence, our education indicators are more numerous than indicators measuring indoctrination in the media. Given this principal focus on education, we prioritized recruiting education experts for our survey.

35 We selected 1945 as the earliest start year of our data as our pilot study revealed that experts have significantly less confidence in their ratings for earlier time periods.

36 An example of the interface that coders used to record their responses for a given country-year can be seen in appendix D.

37 Using V-Dem's "Regimes of the World" classifications.

38 Education experts may be less likely to answer all questions related to the media. Although we do see a difference prior to the 1990s (education vs. media with more than five experts per country), the overall coder coverage for education and media questions is comparable.

39 In our case, it is possible that experts may consistently assign democratic/authoritarian countries low/high values on some questions—e.g., some coders may perceive centralization to be an authoritarian trait. However, empirically, we observe within-country and over-time variation in indicators such as the one on centralization, even in cases where the democratic status of the country remains unchanged. Weidmann (2023) also reached generally optimistic conclusions for expert-coded data, showing that the effect of repressive events on expert assessments of democracy is in general too small to meaningfully affect research with expert-coded indicators.

40 Pemstein and colleagues (2020) and Marquardt and Pemstein (2018) offer detailed discussions about these specific features of the measurement model. In particular, the V-Indoc expert survey made extensive use of anchoring vignettes—which present and ask experts to code hypothetical cases—to identify and adjust for potential idiosyncratic interpretations of questions/responses (King and Wand 2007). We provide an overview of some of the key adjustments made by the measurement model in appendix F.

41 These bounds are a function of characteristics such as the number of coders, their confidence in their responses, and discrepancies in responses across coders. In appendix F, we demonstrate how such credible intervals can facilitate more accurate comparisons. We also explore factors that may contribute to coder confidence. In general, users can use the bounds of the credible intervals, which directly account for numerous potential coding issues, to make more accurate inferences.

42 For the indices, we provide the mean number of coder responses across the indicators used to construct each index.

43 The coverage is reduced to 122 countries and 8,458 country-year observations when dropping countries that have fewer than three unique coders. In this validation section, we use the entire sample to be more conservative but note that results remain largely the same when constraining the sample to observations that have at least three coders.

44 The correlation between the indoctrination potential in education and media indices is 0.52 (0.62 when filtering observations with fewer than three coders on average in each index), which indicates that indoctrination through different channels is a coordinated effort.

45 Interestingly, while the correlation between the liberal democracy index and the patriotic content index is –0.53—which suggests that democratic countries are less likely to engage in patriotic indoctrination—much of this correlation is driven by a subset of highly democratic countries that have almost no patriotic indoctrination content in their education. When excluding these cases, the relationship between democracy and patriotic indoctrination is less clear. Furthermore, there are democracies like Israel, Latvia, and the US that score highly on patriotic content. We show a more detailed scatterplot of this relationship in appendix I.

46 Additional figures that plot temporal trends for all the education indicators by regime type are included in appendix J. Democracies and autocracies mostly differ in the coherence of education, the ideological character of the curriculum, political control over education agents, and, to a lesser extent, in terms of promoting pluralism and the centralization of the curriculum. Future research should further explore these more nuanced differences between regime types.

47 The indicators for which we found no adequate matches are teacher autonomy in the classroom, extracurricular activities, teacher inspection, state-owned print media, and patriotism in the media.

48 The measurement model produces supplementary variables that translate our continuous indicators back to their original ordinal scales (suffixed by _ord). We use these versions of the indicators when matching with categorical variables from other sources.

49 This increases to 0.59 when limiting the sample to observations that were coded by at least three coders.

50 This indicator is not included in any of our main indoctrination indices.

51 The substantive magnitude of these differences is also significant given that within-country standard deviation of the indoctrination potential index in the entire sample is around 0.0894.

52 Linz (2000) considers monarchies to be premodern forms of authority and thus does not include this regime type in his argument.

53 In appendix M, we show that the results hold when adding year fixed effects. We also iteratively repeat the analysis using the lower and upper bounds of the indoctrination potential index and other education and media indices as the dependent variable. The observed patterns remain robust.

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