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Please address comments and/or queries to:

V-Dem Institute
Department of Political Science
University of Gothenburg
Sprängkullsgatan 19, Box 711
405 30 Gothenburg
Sweden
E-mail: contact@v-dem.net

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Varieties of Indoctrination (V-Indoc): Introducing a Global Dataset on the Politicization of Education and the Media ^{*†}

Anja Neundorf¹, Eugenia Nazrullaeva², Ksenia Northmore-Ball³, Katerina Tertytchnaya⁴, and Wooseok Kim¹

¹University of Glasgow

²London School of Economics and Political Science

³Queen Mary, London

⁴University College London

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[†]**Corresponding author:** Anja Neundorf (Anja.Neundorf@glasgow.ac.uk).

Abstract

For many decades, scholars have assumed that voluntary compliance and citizens' commitment to a regime's principles and values are 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 states – whether democratic or autocratic – can control and influence public support to maintain power (Guriev and Treisman, 2019; Fitzgerald et al., 2021; Przeworski, 2022). While studies of political control have primarily focused on coercion and co-optation, this paper joins recent research that highlights indoctrination as an alternative strategy that enables power-holders to induce voluntary compliance and establish support (Hassan, Mattingly, and Nugent, 2022; Paglayan, 2021; Paglayan, 2022a; Paglayan, 2022b; De Juan, Haass, and Pierskalla, 2021). Yet, indoctrination remains relatively understudied as a tool of political control. Among others, 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. Firstly, we provide a clear and universally applicable definition of indoctrination as a socialization process that aims to increase congruence between the views and principles of the regime and 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.¹ 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. states’ ability to inculcate their citizens, and the content of indoctrination.

Secondly, 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., 2023) 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

¹Indeed, 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; Easton, 1965; Diamond, 1999; Linz and Stepan, 1996; Norris, 2011; Claassen, 2020; Levi, Sacks, and Tyler, 2009). According to Lipset (1959, p. 83), for example, legitimacy, or the belief in the appropriateness of political institutions, is a key “requisite” of stable democracy.

in education and the media. Moreover, the dataset provides unrivaled coverage as it includes an almost universal sample of countries in the post-WWII period.² 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., Angrist, Patrinos, and Schlotter, 2013; 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, 2022; Paglayan, 2021), the V-Indoc data captures *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 (Paglayan, 2021; Ansell, 2010).

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 (Roberts, 2018; Roberts, 2020; Guriev and Treisman, 2020; Guriev and Treisman, 2022). Most recent data collection efforts shift the focus to the content of political communication in order 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.

²For more information and comparison to the existing cross-national datasets please see [Appendix A](#).

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, pp. 160–161) define indoctrination as a nonviolent strategy that the state can use to induce compliance, associated with predominantly immaterial benefits. Paglayan (2022b, p. 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, p. 7) describes indoctrination as the process of propagating a coherent narrative or regime mission, in form of a set of (ideological) principles or ideas at the expense of other competing worldviews and principles. While Lott (1999, p. 129) generalizes the concept of indoctrination as “controlling the information received by citizens”: in that sense, the state’s control over education is similar to the 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 19th century, indoctrination was a synonym for education (Puolimatka, 1996, p. 109). According to the 1901 New England Dictionary indoctrination is “instruction, formal teaching” (Raywid, 1980, p. 2).³ However, after WWI, indoctrination acquired a derogatory connotation similar to propaganda and brainwashing (Gatchel, 1959, p. 206) – a trend that continued with the rise of dictatorships in the 20th century (Moore, 1966, p. 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 multi-dimensional concept. Here we use indoctrination as an umbrella term making two important assumptions: (i) indoctrination is not limited to autocracies, and (ii) indoctrination is not restricted to education.

To conceptualize and measure indoctrination that can facilitate future research on causal effects, we need to distinguish inputs (what is the intended process of indoctrination?) from outputs (does it work?). Indoctrination effectiveness is a different output-related question that has only scarcely been

³Perhaps not surprisingly, the existing scholarship has predominantly focused on indoctrination in education. Between 60–75% of academic texts in social sciences published between 1900 and 2020 that mention indoctrination also refer to education or schools (see Figure A-4 in Appendix B). For more discussion of the history of the term *indoctrination*, see Appendix B.

tested empirically, mainly due to the lack of (comparative) data.⁴ Instead, we focus on the regime’s “*intention to treat*” – input(s) – emphasizing what the regime can do to shape individuals’ beliefs, values, and behavior to render society more pliant to state directives, as postulated by Hassan, Mattingly, and Nugent (2022) and Paglayan (2022a).

Indoctrination aims to create such voluntary compliance by encouraging an “unshakable commitment” (Woods and Barrow, 2006, p. 71) to the core principles of any political regime that is resistant to shocks in regime performance and other counter-influences. The regime utilizes different complementary channels to maximize and maintain its intended impact. Individuals are exposed to political messages and learn acceptable behaviors and values at schools, universities, the military, the media, and the arts.⁵ Similar to Hassan, Mattingly, and Nugent (2022), we focus on two channels of indoctrination: education and the media.⁶ Through compulsory *education*, entire cohorts of children can be exposed to pro-regime messages and narratives when they are young and most malleable. While indoctrination through education is a long-term process that takes place through socialization and habituation early in life (Persson, 2015), *political communication* through the media mainly targets adult citizens and can serve to reinforce pro-regime messages disseminated through the education system.⁷ Indoctrination through both education and the media is united in its aim to achieve persistent voluntary compliance and generate loyalty to the political system, whether democratic or non-democratic.

It may be helpful to think of indoctrination as ultimately aiming to shape ‘ideal-type’ citizens (or “good citizens” (Paglayan, 2022b, p. 11)), which will vary by regime type. Broadly defined, ‘ideal-type’ citizens in democracies have “internalized the spirit of democracy” (Diamond, 2008, p. 294). These 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 in order to hold power-holders to account (e.g., Westheimer and Kahne, 2004). Not only do these citizens

⁴One exception includes the study by Cantoni et al. (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 re-alignment of views on democracy with those promoted by the authorities.

⁵Other channels – not studied in this paper – can include adult indoctrination through forced military service (e.g. De Juan, Haass, and Pierskalla, 2021).

⁶Hassan, Mattingly, and Nugent (2022, p. 161): “[i]ndoctrination need not end with school”.

⁷Similar to education, political communication 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 (Kenez, 1985; Belodubrovskaya, 2017; Esberg, 2020). 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, p. 53).

obey laws, but 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, p. 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). Indoctrination in democracies is often referred to as ‘political socialization’ (Gatchel, 1959, p. 309) to avoid the negative connotations of the former term.

‘Ideal-type’ citizens can vary across non-democratic 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 non-democratic regimes are also equipped with certain civic skills (see for example Distelhorst and Fu, 2019), these mainly represent habits of loyalty and unity (Koesel, 2020). To mold these citizens, non-democratic 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 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 maintain and reinforce the effects of education among adult citizens. We emphasize the aspect of intent: regimes might have potential to indoctrinate but not use it and they might attempt indoctrination that may not succeed.

3 How indoctrination works and its dimensions

Following our definition of indoctrination, introduced above, we next discuss the multi-dimensional nature of indoctrination and how it works in more detail. We adapt the approach from philosophy of education (e.g., Woods and Barrow, 2006, pp. 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 to shape citizens' political attitudes and behavior. We assume that political authorities need to take control over the structures and processes of the education systems 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 is attempted to be indoctrinated, 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 agents of socialization, such as schools and the media. To achieve such coherence, regimes need *centralization* of the education system (Ansell and Lindval, 2013; Paglayan, 2022a) and state control of the media. Such a centralized system is hence expected to produce a more coherent message, which leads to a higher potential to indoctrinate.

Further, the potential of 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, p. 13). We assume that the stricter control is, the stronger (and hence also 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 devoted to the school curriculum to teach about the regime's doctrine. 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 of the regime to teach its core political principles and norms.⁸

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,

⁸Unfortunately, we do not have similar indicators for the media.

1967), and the assertion over agents and production 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’.⁹ 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 whose aim is to create loyalty and support for the *regime* as a set of rules for leadership selection and policy-making (Geddes, Wright, and Frantz, 2014). Adherence to these legitimizes the ruling group’s position. Regimes may try to leverage nation- and state-building to aid indoctrination, but the aim is to create support for the regime specifically.¹⁰

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: i) democratic versus authoritarian and ii) patriotic content.

Firstly, the political character of indoctrination is closely linked with 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, 2003; Westheimer and Kahne, 2004). Our goal is therefore to create a uni-dimensional 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: i) the regime’s doctrine and ii) the level of contestation.

⁹Indoctrination attempts after the first wave of literacy expansion might not have the same strength of effects (Darden and Grzymala-Busse, 2006). Further, 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.

¹⁰Our distinction is inspired by Easton (1965) distinction between political objects with a political system. Citizen’s 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.

Our definition of *doctrine*, encompasses the core principles, values, and norms of a society that are used by the regime to legitimize its existence and actions.¹¹ In this respect, liberal democracy can be classified as a doctrine. The content of the “doctrine” is thus a helpful indicator for differences in the content of indoctrination between democracy and autocratic regimes. Another defining characteristic of indoctrination content is the level of *contestation*. The key difference in the use and definition of indoctrination between autocracies and democracies is the degree to which the “doctrine” has to be univocally 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 are explicitly democratic. Nevertheless, also democracies require an “unshakable commitment” to their core principles (Easton, 1965). The difference to autocracies is however that democracies will base their indoctrination efforts on persuasion rather than “beyond argument” and “beyond reasoning” like in authoritarian regimes (Woods and Barrow, 2006, p. 71).

In autocracies we, therefore, 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 someone to accept the regime’s doctrine uncritically and to accept this “truth” universally regardless of evidence. Indoctrination in autocracies is expected to close alternatives through the promotion of a single view (Sears and Hughes, 2006) and censorship of any evidence that can be used to construct alternative narratives.

The second element of indoctrination content, which we focus on, relates to *patriotism*, another key tool that regimes use to build political support for the broader political community (Dalton, 2004; Koesel, 2020; Norris, 2011). Patriotism can be promoted both in democracies and autocracies, as the reliance on rituals and symbols to create a sense of belonging and loyalty is common across regime types (Westheimer, 2008; Curren and Dorn, 2018). For example, the use of patriotic education and political communication to limit political dissent is extensively shown in the cases of 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 (Westheimer, 2014; Curren and Dorn, 2018, p. 130), immigration (De Vries, 2018) and foreign invasion

¹¹Many people associate certain ideologies such as Communism or Fascism with indoctrination, which certainly inspired important work in this area (Friedrich and Brzezinski, 1956; Arendt, 1966). Figure A-3 in Appendix B confirms that the bulk of the earlier academic works (especially between 1930-1970) about indoctrination, made reference to either of these all-encompassing ideologies. However, recent research that mentions indoctrination refers more and more 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.

(Kello and Wagner, 2014), contemporary democracies display a rise in emphasis on patriotism in political discourse and education (Wilson, 2015). It is therefore not surprising that the compatibility between patriotism and liberal democracy is hotly debated (Soutphommasane, 2012; Sardoč, 2020, p. 105). It is unclear whether the promotion of patriotic symbols indicates a shift away from more liberal understandings of patriotism. 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) that 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, which can be aggregated into composite indices that measure the abstract concepts of indoctrination potential and content.¹² 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 on 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 use of 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 dataset with the V-Dem dataset since both datasets are constructed and formatted in the same manner.

After presenting our indices and indicators, we discuss how we gather necessary data using expert surveys. We conclude by providing an overview of the measurement model that translates expert-coded responses into country-year variables that can be used in quantitative studies of indoctrination.

¹²Note that only 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.

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 sub-components, 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 1](#) and [2](#) 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.

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 sub-indices. Firstly, 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., Guevara, Paglayan, and Perez Navarro, [2018](#); Moe, [2016](#)), (2) teacher autonomy and teachers' ability to deviate from the curriculum inside the classroom (e.g., Cribb and Gewirtz, [2007](#); 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. Secondly, the *centralization* index¹³ includes the degree to which (1) the curriculum in schools is centralized at the national level (e.g., Gvirtz and Beech, [2004](#)),¹⁴ and (2) the degree of centralized textbook approval (e.g., Brandenberger, [2012](#); Zajda, [1980](#); Ferreira and García, [2021](#)).

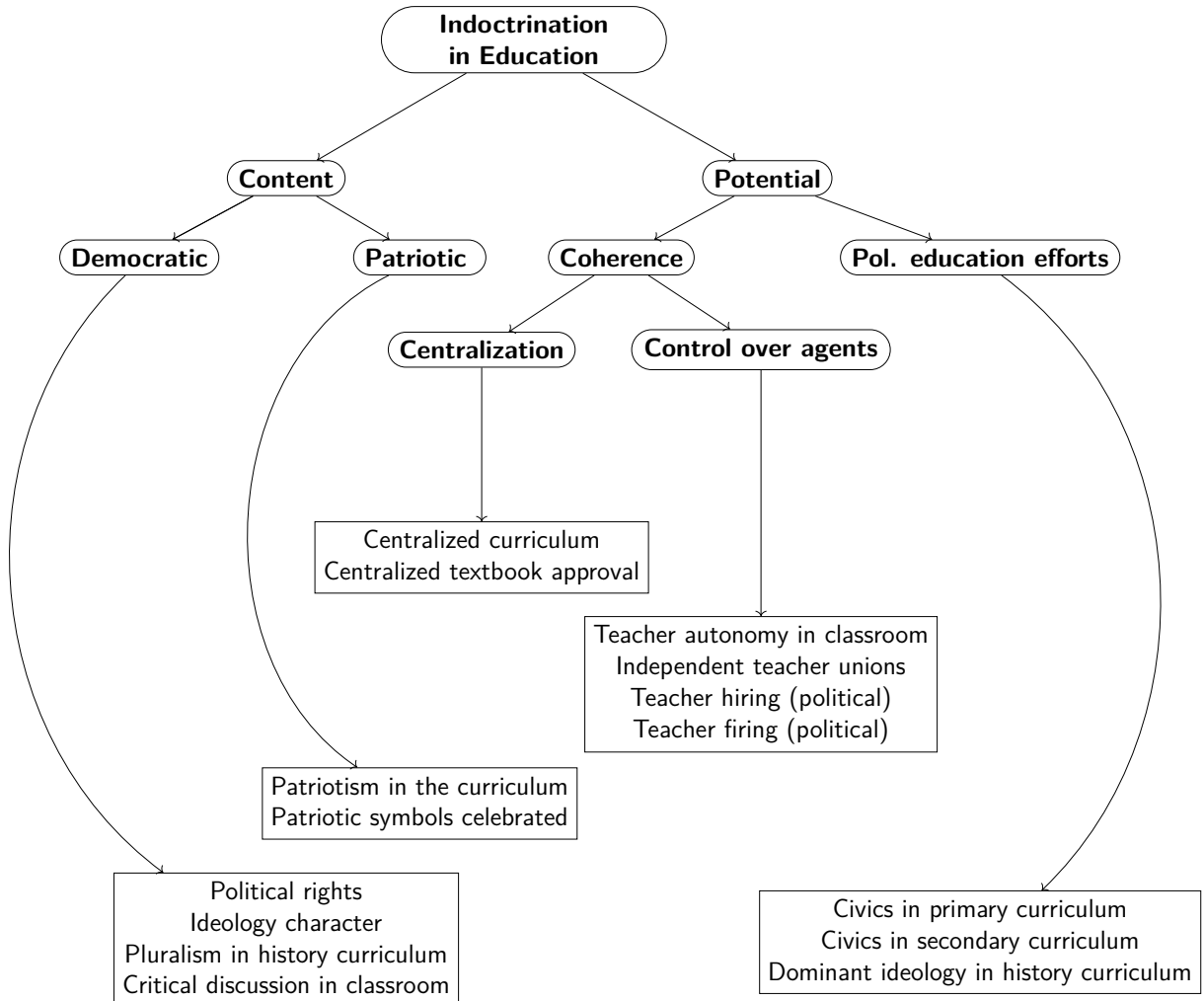
We also create an index for the *political education effort*, which combines three indicators: whether there is a mandatory class on political education (predominantly focused on teaching political values) in the curriculum at the (1) primary and (2) secondary levels,¹⁵ and (3) whether there is a dominant

¹³Ansell and Lindvall ([2020](#)) construct a similar index of centralization in primary education for a limited number of countries (18) in the pre-1945 period (up to 1939).

¹⁴Del Río, Knutsen, and Lutscher ([2022](#)) (data collection is ongoing) code the centralized curriculum based on *de jure* primary and secondary sources. For more details, see [Appendix A](#).

¹⁵Until recently, there has been no comparative data on whether civic education is taught as a separate subject. For example, the CIVED and ICCS surveys have very sparse geographical coverage and include only most recent years (since 1999). Del Río, Knutsen, and Lutscher ([2022](#)) (data collection is ongoing) is a major exception.

Figure 1. Mapping our concepts: Indoctrination in education



Note: The rounded boxes indicate V-Indoc indices, and plain boxes indicate measured variables (V-Indoc indicators).

ideology promoted through the history curriculum.¹⁶ Unlike Del Río, Knutsen, and Lutscher (2022, p. 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, p. 219) and explicitly assume that “all education [can be] civic education”.¹⁷

We construct the *democratic content* index using four indicators that assess the extent to which democratic values are emphasized in the official curriculum. The (1) political rights and duties indicator measures whether subjects that teach political values cover topics related to individual political rights

¹⁶We use history as a proxy to capture whether a dominant ideology is incorporated in teaching as it is 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).

¹⁷In 2016, civic education was included as a separate subject in the school curriculum in 11 out of 24 countries, while in other countries “civic and citizenship education [was integrated] into all subjects in the school, making integration a relatively common practice” (Schulz et al., 2018, p. xvi).

and duties (Willeck and Mendelberg, 2022).¹⁸ The (2) ideology character indicator focuses on the dominant societal model or ideology promoted in the history curriculum,¹⁹ and is re-coded into a binary variable that indicates whether democratic norms or institutions are the principal ideologies that are promoted. The (3) pluralism indicator evaluates the extent to which students are exposed to diverse views and/or interpretations of historical events.²⁰ Lastly, the (4) critical discussion in the classroom indicator is based on the extent to which students have opportunities to discuss what they are taught in history classes.²¹ This indicator probes the level of contestation that is promoted in school education.

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),²² and (2) whether patriotic symbols, such as flag-raising ceremonies or singing the national anthem, are celebrated in schools. 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).²³

¹⁸We model this indicator after the ICCS question on “promoting knowledge of citizens’ rights and responsibilities” (ICCS, 2018, pp.36-39).

¹⁹The eight ideologies are (i) nationalism, (ii) socialism or communism, (iii) restorative or conservative ideology, (iv) personality cult, (v) religious ideology, (vi) ideology related to ethnicity, (vii) clan or tribe, as well as (viii) democratic ideology based on teaching democratic norms (liberalism, pluralism) and institutions (e.g. elections). The V-Indoc indicator of ideology character includes democracy as an ideology (Williams, 2003), unlike the existing V-Dem indicator of government ideology (Coppedge et al., 2022; Tannenberg et al., 2021).

²⁰We model this indicator of pluralism after the existing question from TALIS (Q47 TALIS, 2018, p.24): “whether practices in relation to diversity are implemented at school”, e.g., “teaching students how to deal with ethnic and cultural discrimination; adopting teaching and learning practices that integrate global issues throughout the curriculum.” We use history as a proxy to capture a possible tension between the state-approved historical narratives and alternative interpretations.

²¹We model this indicator after the ICCS question on promoting “students’ critical and independent thinking” and “capacity to defend one’s own point of view” (ICCS, 2018, pp.36-39), as well as the question from the TALIS on “how often do teachers [...] give tasks that require students to think critically” (Q42 TALIS, 2018, p.23).

²²We deliberately focus on language studies as we need to capture variation in patriotic education across different contexts and over time while avoiding the incorporation of an artificial upward bias. Measuring our concept for a subject that is predominantly political, such as history (Wang, 2008; Zajda, 2017), can produce artificially high levels of patriotism in the curriculum. Although even math can be a political subject (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. Starkey (2007) identifies an inherent tension between promoting a national culture or a national identity, as opposed to the language curriculum being part of global citizenship education, i.e., with the goal of raising cosmopolitan citizens.

²³Lerch, Russell, and Ramirez (2017) code the attributes of textbooks such as the celebration of national symbols to measures nationalist emphases in the curriculum for 78 countries in 1955–2011. We use the available textbook data to validate our indicators.

Indoctrination through the media

Figure 2 presents a visualization of the media indices and indicators, which focus the state’s intention to indoctrinate via the print and broadcast media.²⁴ In our approach, we follow Djankov et al. (2003) and focus on state media ownership of the media and state influence over state and non-state media as the *input* for the state’s control over the media.²⁵

The *indoctrination potential* index in the media is equivalent to the *indoctrination coherence* index, which consists of the *centralization* and *control over agents* sub-indices in the media. These sub-indices are supplemented with additional indicators from the V-Dem dataset. The former index captures the ability of the state to influence the coverage of political issues by state and non-state 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,²⁶ the state’s control over the production of entertainment content,²⁷ 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.²⁸ While we do not have indicators of democratic content in the media, the V-Dem dataset

²⁴With 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 (Roberts, 2018; Roberts, 2020; King, Pan, and Roberts, 2013), and distraction (Stukal et al., 2019; King, Pan, and Roberts, 2017; Sobolev, 2019). Existing V-Dem indicators of the state control over social media already include censorship and shutdowns (Coppedge et al., 2022; Mechkova et al., 2021).

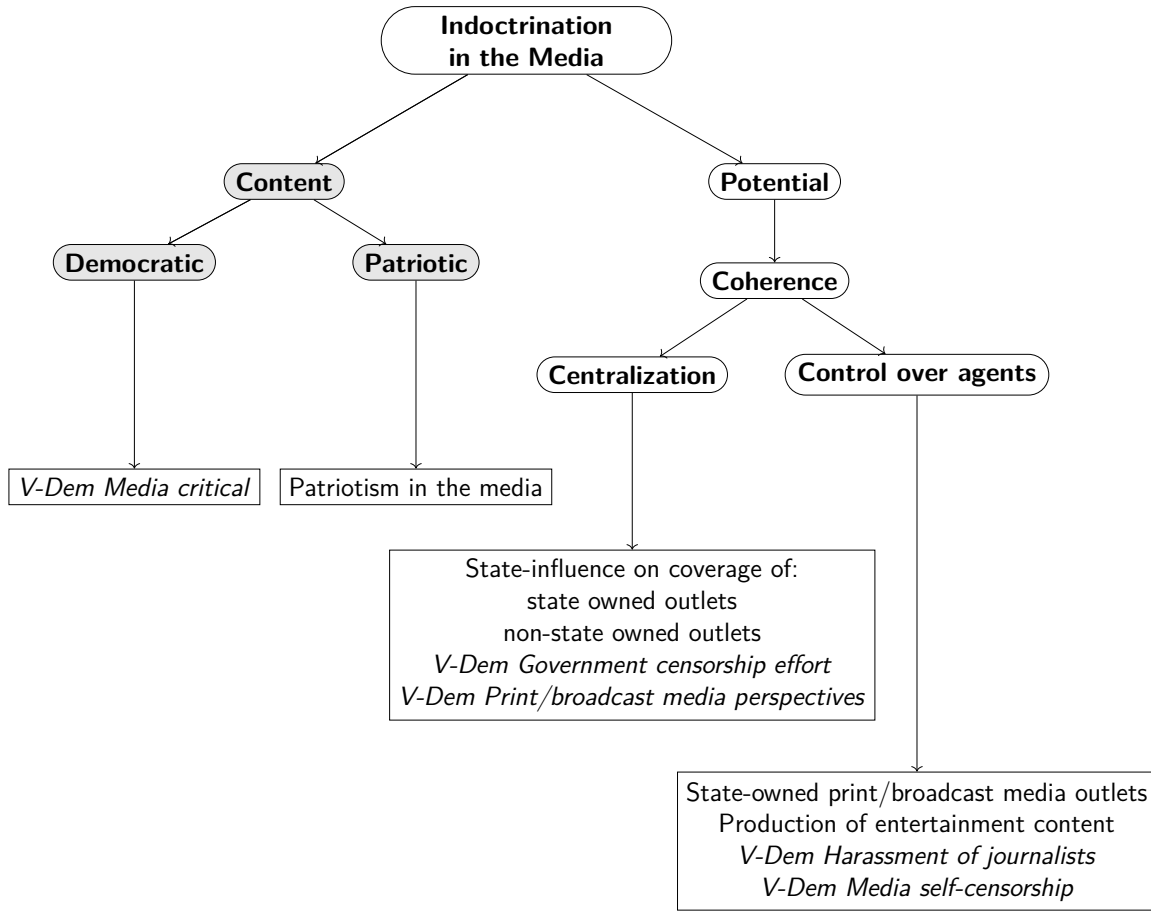
²⁵Djankov et al. (2003) find that state ownership of the media leads to state capture and undermines media pluralism. Media pluralism as the *output* of political control is important for critical thinking: to update beliefs and challenge the validity of political information, citizens need to be regularly exposed to the viewpoints that confront their pre-existing attitudes (Gentzkow and Shapiro, 2011; Yanagizawa-Drott, 2013). The concentration of media ownership can decrease the diversity of viewpoints covered by media outlets. In that sense, the V-Dem indicator of media bias is the *output* of the state control over the media.

²⁶We model our print/broadcast indicators after the cross-sectional media concentration variable from Djankov et al. (2003) and Guriev and Treisman (2020) (broadcast only) and extend its coverage over time.

²⁷Censorship of the arts, such as in films, can be used to impact popular support for the regime (Esberg, 2020).

²⁸Maerz (2020, p. 532) find that in 1999–2019 the most common topic in autocrats’ political communication is nationalism and national pride. Compared to autocrats, instead of nationalism, democratic leaders in their official rhetoric appeal to collective memory.

Figure 2. 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 greyed out). The democratic and patriotic content are measured as separate indicators. For the index of indoctrination potential, we combine the existing V-Dem indicators (highlighted in *italics*) with the novel V-Indoc indicators.

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, p. 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 “*intention to treat*,” i.e., the inputs of indoctrination. 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, which undermines our objective of deriving measures of on-the-ground indoctrination practices that share direct 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 difficult-to-measure concepts (Marquardt and Pemstein, 2018) (and discern potential *de jure* and *de facto* tensions), 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 2021.²⁹ 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 and expert vetting process. 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 and 2021.^{30,31}

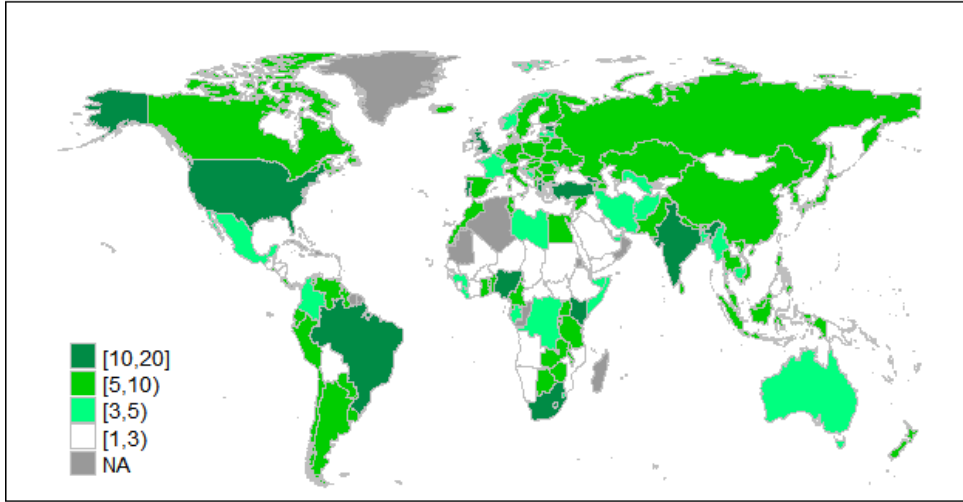
760 vetted experts completed the survey and provided responses that cover 160 countries. As [Figure 3](#) indicates, we have at least 3 unique coders for many countries across all regions of the world,

²⁹Existing 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.

³⁰An example of the interface that coders used to record their responses for a given country-year can be seen in [Appendix D](#).

³¹We 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.

Figure 3. 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.

though coverage is relatively more sparse for Africa and the Middle East. The median number of coders per country-year is 5, with 1 coder minimum (e.g. for Angola, Burkina Faso, Bolivia, Gambia, etc.) and 20 coders maximum (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).³²

In addition, [Figure 4](#) plots over-time variation in the number of coders for one education indicator and one media indicator.³³ 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 less than three coders) covers about 90% of countries. The remaining countries that are not covered in our data are predominantly small states with less than one million inhabitants. These countries were however not targeted in the expert recruitment process.

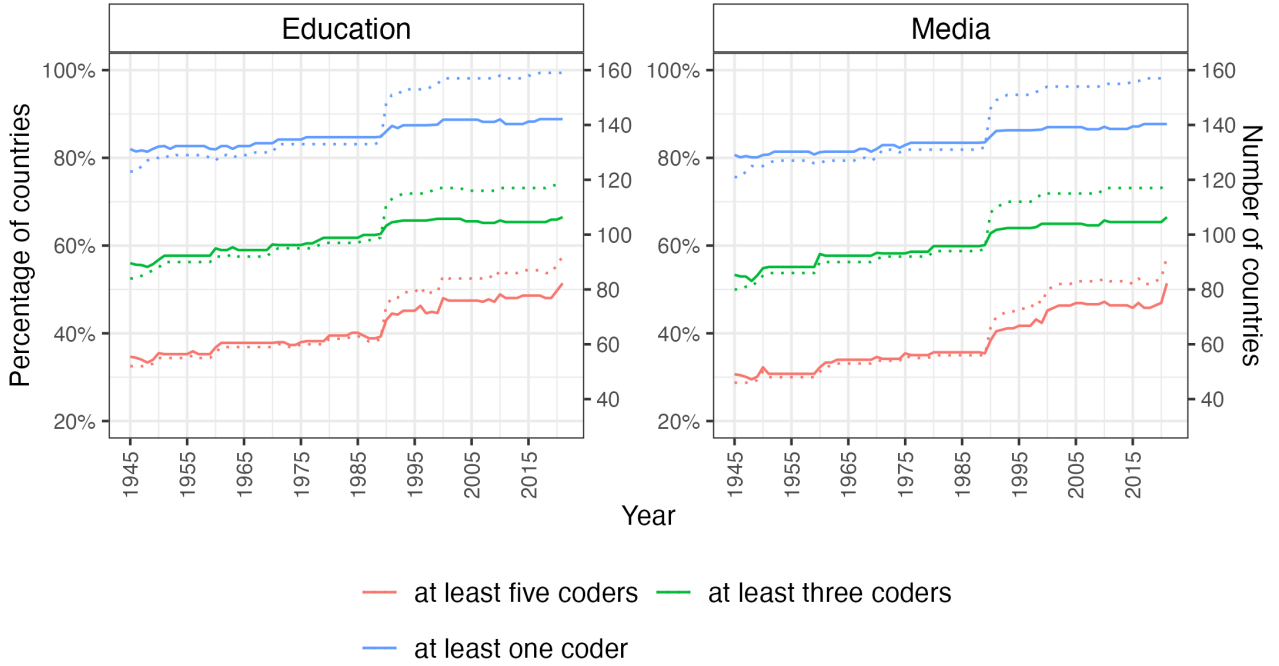
4.3 Measurement model

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

³²Using V-Dem’s Regimes of the World classifications.

³³Education 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.

Figure 4. 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; (2) Media: state-owned print media.

specifically, these ordinal responses are regarded as subjective ratings of latent (i.e., not directly observable) concepts of indoctrination, which are mapped to a single continuous variable by the measurement model. When doing so, the measurement model accounts for cross-coder divergences (i.e., differences in the selected responses), coder reliability (i.e., coders can make systematic and non-systematic mistakes), disparate coder thresholds (i.e., interpretations of responses may differ),³⁴ and coder confidence (i.e., coders were requested to provide a measure of their confidence in their responses).³⁵

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.

³⁴To ensure comparability of the estimates across experts and countries, experts were also asked (at random) to code vignettes based on hypothetical examples that represent idealized cases, which could be used to identify potential idiosyncratic interpretations of the questions/responses so that the cut-offs between ordinal responses can be adjusted in the measurement model.

³⁵Pemstein et al. (2020) and Marquardt and Pemstein (2018) offer much more detailed discussions about the specific features of the measurement model.

In sum, the measurement model produces a probability distribution for each country-year estimate of the indices and indicators. While the medians of these distributions can be treated as point estimates and will typically be the variable of choice for quantitative analysis,³⁶ these probability distributions also offer information about the level of confidence surrounding each point estimate, i.e., measurement uncertainty—narrower (wider) probability distributions are associated with greater (lower) certainty about our estimates. As such, we also provide lower and upper bounds of these probability distributions in our dataset.³⁷ In addition, we also include information about the number of coder responses used to construct each country-year observation for our indicators and indices in our dataset.³⁸ Estimates constructed based on one or two coder responses may have wider uncertainty bounds since they rely on less information,³⁹ and 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 check that results remain robust when dropping observations with less than three coders.

5 Data validation

The V-Indoc dataset provides the most expansive measures of indoctrination to date as it covers 160 countries from 1945–2021 for a total of 10,923 country-year observations.⁴⁰ In this section, we explore and validate our measures using tests of face, convergent, and construct validity (Adcock and Collier, 2001).

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. To this end, we examine the cross-national

³⁶The measurement model also generates supplementary variables that (1) re-scale the indicator estimates according to the range of the original ordinal scale, and (2) translate the indicator estimates into the most likely ordinal value on the original ordinal scale.

³⁷These bounds are a function of characteristics such as the number of coders, their confidence in their responses, and discrepancies in responses across coders.

³⁸For the indices, we provide the mean number of coder responses across the indicators used to construct each index.

³⁹We provide a demonstration of how measurement uncertainty could impact inference in [Appendix E](#).

⁴⁰The coverage is reduced to 122 countries 8,458 country-year observations when dropping countries that have less than three unique coders. In this validation section, we use the entire sample to be more conservative, but note that results generally improve when constraining the sample to observations that have at least three coders.

and cross-temporal variation in our three main indices of indoctrination in education, i.e., indoctrination potential, democratic content, and patriotic content. For space reasons, in this section, we focus on education only. Corresponding plots for the indoctrination potential index in the media are presented in [Appendix F](#).⁴¹

5.1.1 Cross-national variation

[Figure 5](#) 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 6](#)). Furthermore, [Figure 7](#) plots levels of democratic and patriotic indoctrination content in 2021. As expected, consolidated democracies generally possess higher (lower) levels of democratic (patriotic) indoctrination content than other types of regimes. 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 democratic (0.295) and more patriotic (0.824) than many countries (see [Figure 8](#)).

The association between levels of democracy and our indoctrination indices can be observed more systematically in [Figure 9](#), 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.⁴² [Figure 10](#), which shows temporal trends in the indices across democracies and autocracies (as categorized by V-Dem along with the 68% credible intervals), also corroborates such patterns.⁴³ The figure also reveals a noticeable downward and upward trend in the indoctrination potential and democratic content indices

⁴¹The correlation between the indoctrination potential in education and media indices is 0.52 (0.62 when filtering observations with less than 3 coders on average in each index), which indicates that indoctrination through different channels is a coordinated effort. In the dataset, we also provide an index that jointly measures indoctrination potential across education and the media.

⁴²Interestingly, 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.

⁴³Additional figures that plot temporal trends for all the education indicators by regime type are included in [Appendix I](#).

Figure 5. Indoctrination potential in education (2021)

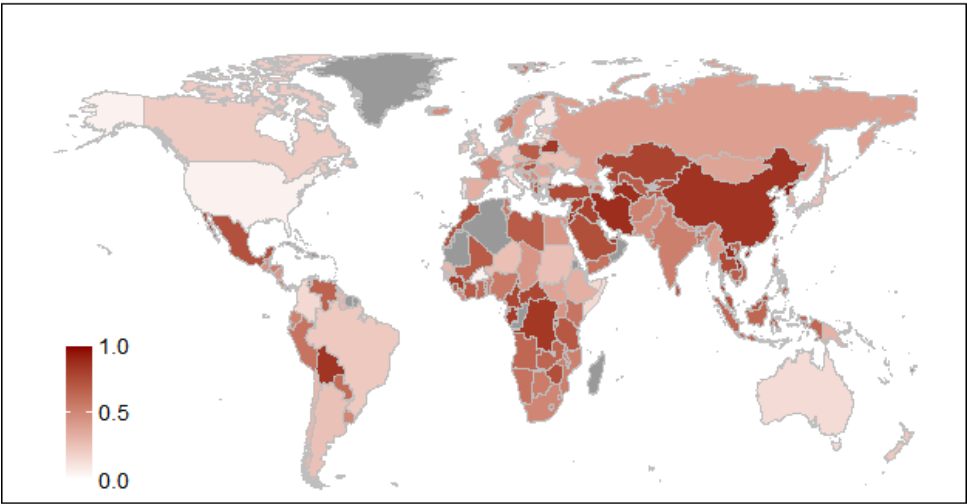
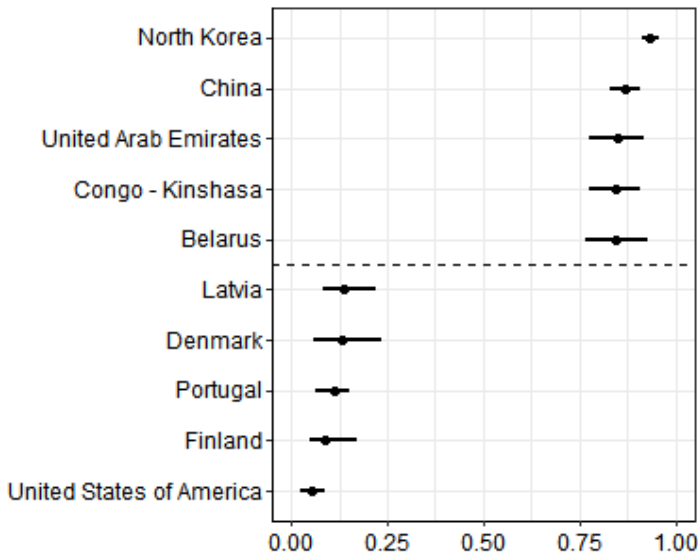


Figure 6. Indoctrination potential in education (2021): Bottom/top cases

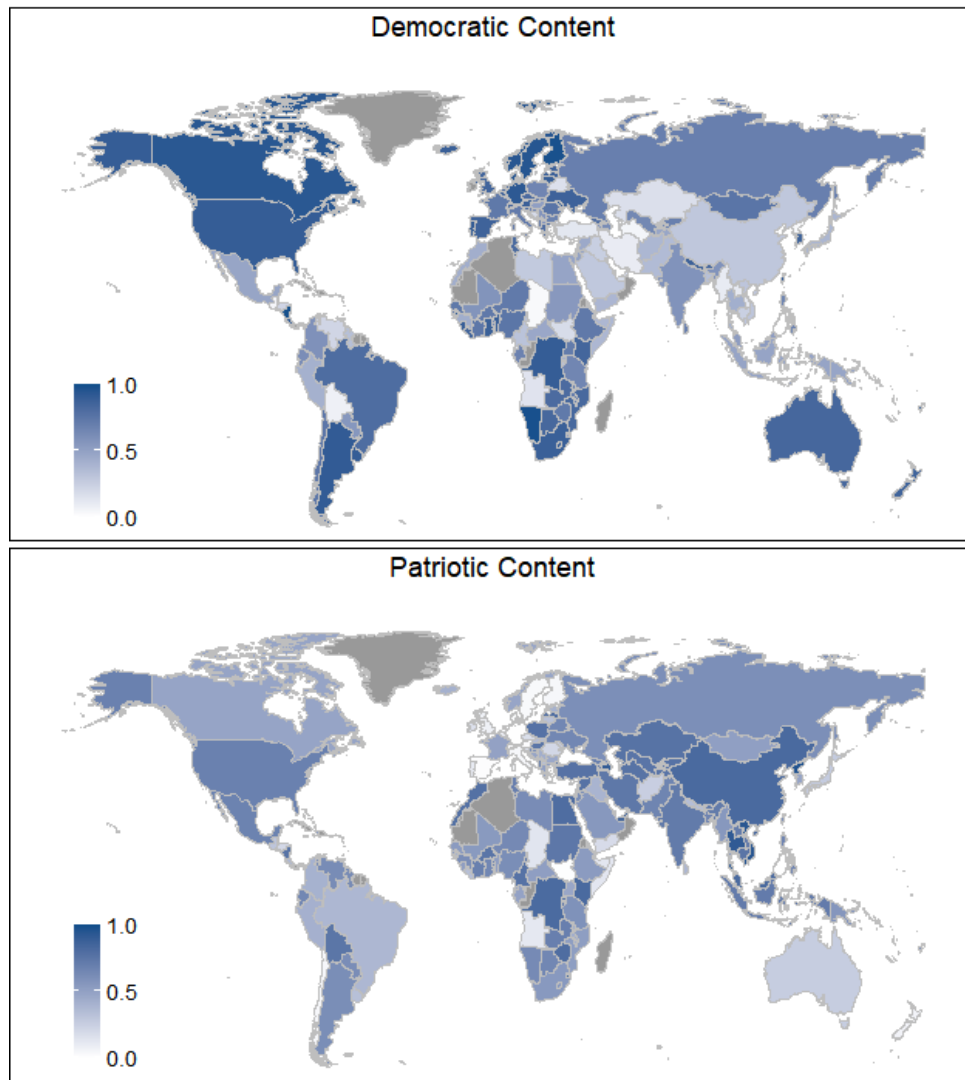


Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals. It shows the five highest/lowest scoring countries on the index that have an average of at least three expert coders for the indicators that comprise the index. The full list of countries can be seen in [Appendix G](#).

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 suggest 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 a large subset of autocratic countries. Conversely, Benin ranks 95th out of

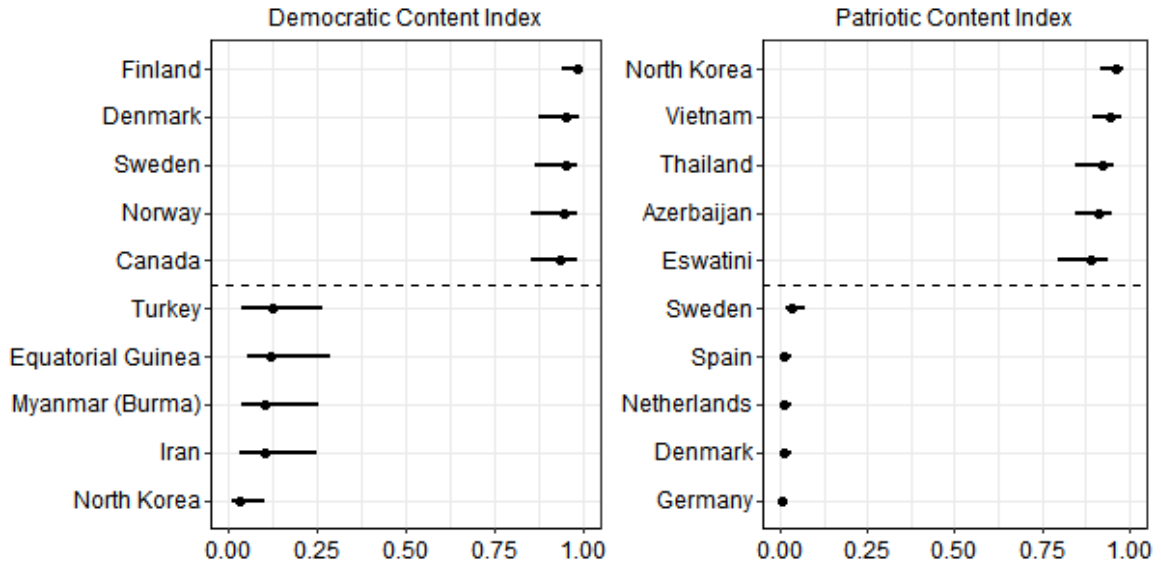
Figure 7. Indoctrination content in education (2021)



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 democracies such as Cyprus and Japan.

In addition, if a country possesses high potential for indoctrination but is not committed to instilling a specific doctrine, 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 J](#), we demonstrate one method of constructing a composite indoctrination index in education that captures both the level of indoctrination potential and democratic indoctrination content, and present accompanying descriptive figures for this composite index.

Figure 8. 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 have an average of at least three expert coders for the indicators that comprise the index. The full list of countries can be seen in [Appendix G](#).

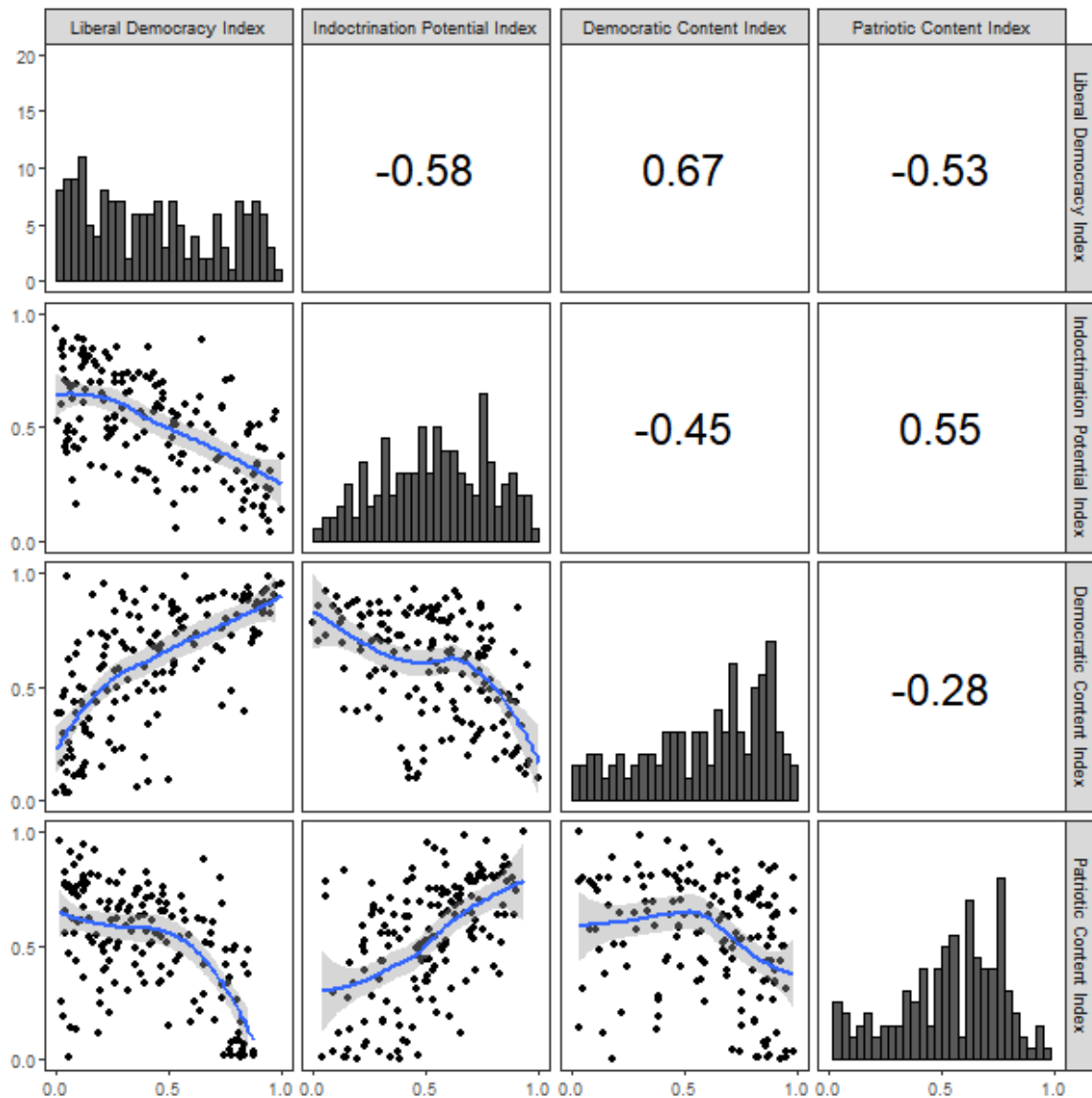
5.1.2 Case study: Russia

We use the case of Russia to further demonstrate that our data align with expectations. [Figure 11](#) plots temporal trends across the three education indices for Russia. 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” (WWII), which saw Soviet education ideology shift to being more militaristic and patriotic (Zajda, 1980, pp. 206–207) in order to cultivate obedient and loyal citizens (Koesel, 2020, p. 250).

In the late 1980s with *Perestroika* and *Glasnost* under Gorbachev, however, 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).⁴⁴ At least *de jure*, Gorbachev promoted a more critical approach to education in the classroom (a dialogue instead of a monologue): “[w]hereas 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, pp. 411, 414). The

⁴⁴*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 as (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 argument in Paglayan (2022a) and Aghion et al. (2018).

Figure 9. Democracy and the Indoctrination Indices in 2021

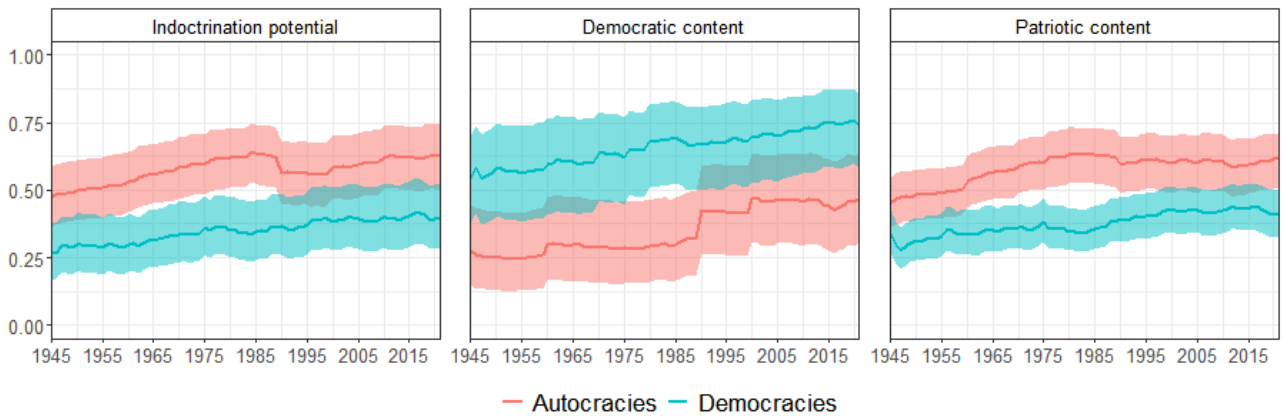


Note: Lines and confidence intervals are produced by LOESS smoothing. The country-labeled plots for the first column can be seen in [Appendix H](#).

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, p. 7).

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

Figure 10. 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.

struggle” and that textbooks should “inspire, especially among young people, a feeling of pride for their own history and for their country”.⁴⁵ Moreover, around the annexation of Crimea in 2014, the Russian government implemented various laws that would penalize ‘falsifying’ history and criticize 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 for falsifying historical narratives.⁴⁶ 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, p. 7), and Putin declared patriotism to be the main unifying national ideology in Russia in 2015.⁴⁷

Such changes are reflected in our key indices of indoctrination in education. The post-2000 patterns in our indices correspond with Putin’s efforts to re-centralize 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.

5.2 Convergent validity

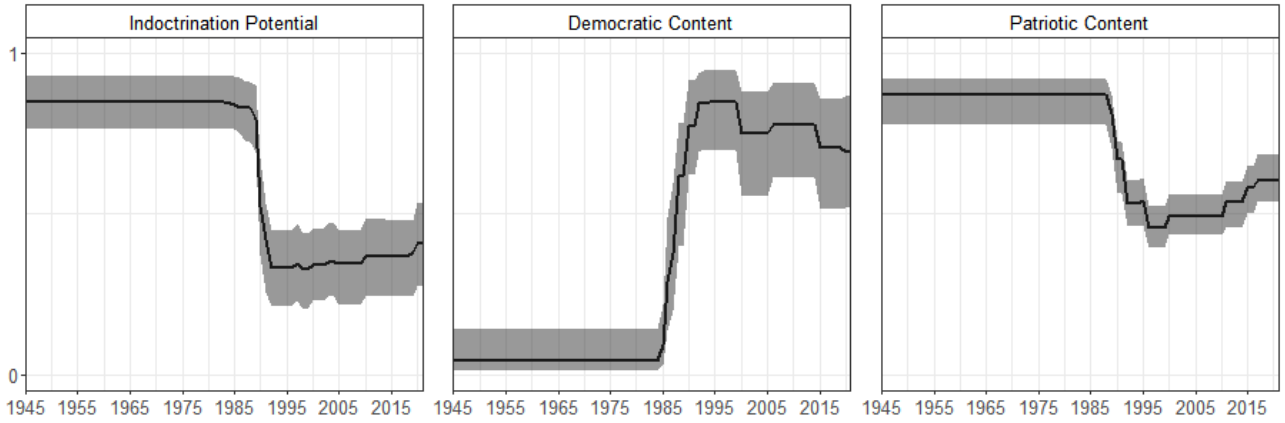
Tests of convergent validity examine empirical associations with other similar measures. Given the relative dearth of comprehensive comparative data on indoctrination, we focus on the indicators that

⁴⁵Source: The official transcript of Vladimir Putin’s “Opening Address at a Meeting with History Scholars” on November 27, 2003, <http://en.kremlin.ru/events/president/transcripts/22227> (last accessed Jan 5, 2023).

⁴⁶Source: “Kak v Rossii sudiat za falsifikatsiyu istorii: doklad ‘Agory’”, May 10, 2018, by A. Novoderezhkin (in Russian) <https://meduza.io/feature/2018/05/10/kak-v-rossii-sudyat-za-falsifikatsiyu-istorii-doklad-agory> (last accessed Jan 5, 2023).

⁴⁷Source: “Putin Declares Patriotism Russia’s Only National Idea”, Feb 4, 2016 <https://www.themoscowtimes.com/2016/02/04/putin-declares-patriotism-russias-only-national-idea-a51705> (last accessed Jan 5, 2023).

Figure 11. Indoctrination potential and content in education (Russia)



Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

factor into our 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 matching validation variables for 22 of our 27 indicators.⁴⁸

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)⁴⁹ from this exercise. Appendix K reports the full list with more detailed information about the validation variables. On average, the mean magnitude of the correlations/classifications is 0.57,⁵⁰ which can be considered to be quite strong given that the content of many of our indicators and matched validation variables may only partially overlap. 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 since the former distinguishes different levels of education requirements while the latter represents the percentage of teachers that have received minimum training requirement. Nonetheless, this indicator is not included in any of our main indoctrination indices. We also note that our media indicators appear to consistently perform very well in these tests despite being coded by education experts.

⁴⁸The 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*.

⁴⁹The 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.

⁵⁰This increases to 0.62 when limiting the sample to observations that were coded by at least 3 coders.

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?	<u>0.75</u>
Democratic ideology character in the curriculum	To what extent is the ideal of electoral democracy in its fullest sense achieved?	0.73
Political influence, state-owned media	Of the major print and broadcast outlets, how many routinely criticize the government?	<u>-0.71</u>
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 that citizen is arrested?	-0.67
Independent teacher unions	Does the government attempt to repress civil society organizations (CSOs)?	-0.66
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?	<u>-0.46</u>
Political rights and duties in the curriculum	To what extent does the textbook discuss rights/freedoms/liberties?	<u>0.44</u>
Ideology in the curriculum	To what extent does the current government promote a specific ideology or societal model in order to justify the regime in place?	<u>0.40</u>
Political rights and duties in the curriculum	To what extent does the textbook discuss duties/responsibilities/obligations of citizenship?	<u>0.36</u>
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.

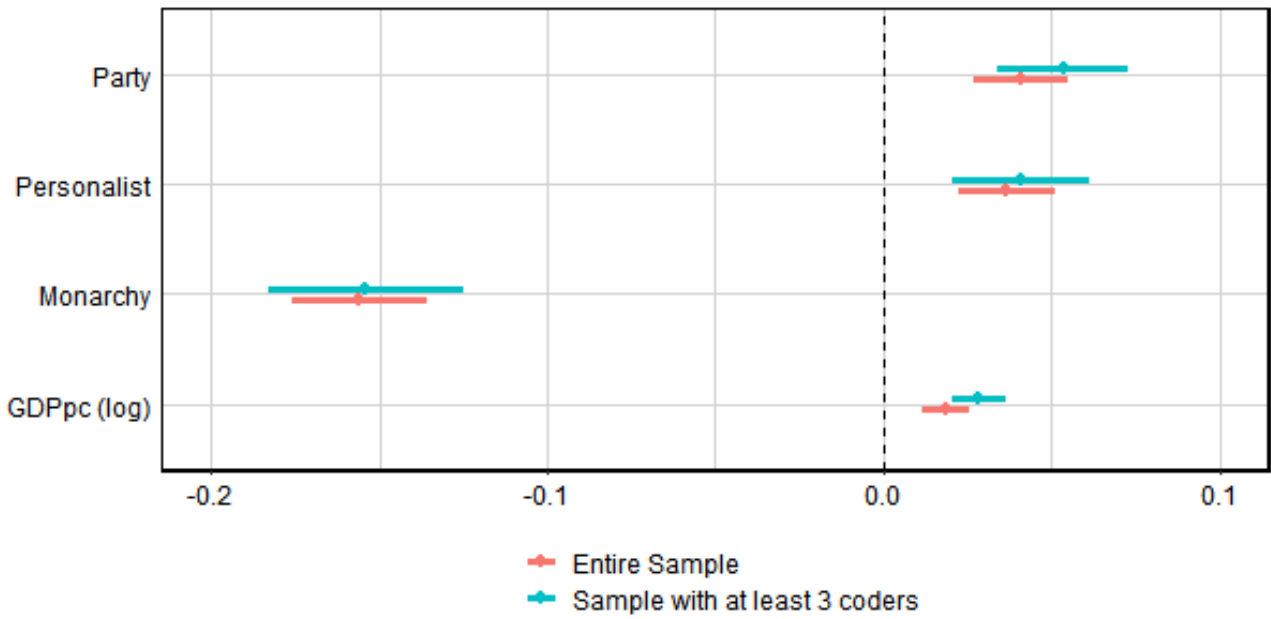
* See [Appendix K](#) for additional details and sources for the validation variables.

5.3 Construct validity

To demonstrate one application of the dataset, we test Linz’s (2000) proposition that military regimes are less likely to engage in indoctrination relative to other types of autocratic regimes. According to Linz (2000, p. 163) 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 their ability to engage in “political socialization and indoctrination” (p. 165, 169).

To this end, 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 1946-2010 for a total of 3,973 observations.

Figure 12. Indoctrination Potential 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.

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 2,518 observations. Coefficient plots of the results and corresponding 95% confidence intervals are presented in [Figure 12](#), and summaries of the variables and full results are reported in [Appendix L](#).

As Linz predicted, the results indicate that both dominant-party and personalist autocratic regimes exhibit higher levels of indoctrination potential than those ruled by the military.⁵¹ On the other hand, and interestingly, the model indicates that the level of indoctrination potential observed in monarchies is far *lower* than those observed in other types of autocratic regimes including military regimes. Moreover, our results generally become stronger in our constrained sample, which could be due to the removal of potentially unreliable estimates that rely on just one or two expert ratings.

These results provide the first empirical evidence of a postulated relationship, which has not been adequately tested before due to the lack of data. Furthermore, the results present some novel insights into how autocratic regimes differ in their potential capacity to indoctrinate. Without the V-Indoc data, it was unknown that monarchies are the least likely of all regime types to use indoctrination. This finding could be investigated in more detail in future research.

⁵¹The 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.

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 multi-dimensional process that involves not only content that corresponds to a regime’s ‘doctrine’ but also the institutional potential of inculcating the entire population with a coherent message through control of the creation of the content and 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 multi-dimensional 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 *de facto* indoctrination which cannot be fully observed through *de jure* indicators. While expert surveys might suffer from certain biases (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, 2022; Guevara, Paglayan, and Perez Navarro, 2018). Our education data will allow researchers to explore substantive as well as methodological questions.

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A Appendix: Existing cross-national datasets in education and the media

Table A-1. Existing cross-national datasets in education

<i>Dataset</i>	<i>Coverage</i>	<i>Description</i>
Angrist et al. (2021)	164 countries in 2000–2017	<i>Harmonized Learning Outcomes (HLO) Database</i> : a harmonized dataset of international student test results. Source: World Bank .
Altinok, Angrist, and Patrinos (2018)	163 countries in 1965–2015	<i>Global Data Set on Education Quality</i> : a harmonized dataset of international student test results. Source: World Bank EdStats on Achievement .
World Bank Education Indicators	147 countries, 1975–2021	Contains a series of indicators on (1) the quantity of education such as completion rates, years of compulsory education, school enrollment rates, government expenditures on education, literacy rates, % of children out of school, pupil-teacher ratio, % of trained teachers, etc.; (2) the quality of education (learning outcomes), such as mean performance on the reading / mathematics scale, etc. Source: World Bank EdStats .
UNESCO Education Indicators	156 countries, 2000–2021	Contains a series of indicators similar to the World Bank Education Indicators above. A notable difference is that this database also contains e.g., the extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in student assessment (over 50 countries in 2020 only). Source: UNESCO Institute for Statistics .
Lee and Lee (2016) (combined with Barro and Lee (2013))	146 countries in 1820–2010	<i>Long-run Education Dataset</i> : measures of the quantity of education, e.g., enrollment rates in primary and secondary education. Source: https://barrolee.github.io/BarroLeeDataSet/DataLeeLee.html (last accessed on Jan 24, 2023).
Ansell and Lindvall (2013), updated in Ansell and Lindvall (2020)	1800–1939, 18 countries in 1939	Centralization of primary education. Source: https://www.johanneslindvall.org/public-services-and-the-modern-state.html .
Paglayan (2021)	33 countries in 1720–1946	This dataset includes: the timing of first education laws; when the state – begins to fund primary schools, establishes universal / compulsory / free education, begins to regulate teacher training requirements, begins to regulate the official curriculum, etc. Source: https://doi.org/10.7910/DVN/X2VJJX .
Bromley et al. (2022)	183 countries in 1970–2020	<i>World Education Reform Database</i> . This dataset contains short descriptions and dates of the world education reforms (WERD). Source: https://www.werd.world .
Continued on next page		

Table A-1 – continued from previous page

<i>Dataset</i>	<i>Coverage</i>	<i>Description</i>
Del Río, Knutsen, and Lutscher (2022)	140 countries in 1789–2021	<i>Education Policies and Systems across Modern History</i> measures variables related to: “a) existence and nature of compulsory education, b) ideological guidance and content of education, c) autonomy or political control of education institutions, and d) training of teachers” (Del Río, Knutsen, and Lutscher, 2022, p. 1). Source: “Emergence, Life, and Demise of Autocratic Regimes” (ELDAR) project (data collection is ongoing).
TALIS surveys (Ainley and Carstens, 2018)	48 countries (in 2018): three waves – 2003, 2008, 2018	<i>Teaching and Learning International Survey</i> (TALIS) is conducted by the OECD. The teacher questionnaire included questions asking teachers to what extent they control areas of planning and teaching, such as determining course content and teaching methods. Source: https://www.oecd.org/education/talis/ .
CIVED survey	29 countries: one wave in 1999	<i>Civic Education Study</i> (CIVED). This survey is focused on civic and citizenship education and surveyed students to measure their civic knowledge, as well as teachers of civics. Source: https://www.iea.nl/data-tools/repository/cived .
ICCS surveys (Schulz et al., 2018)	24 countries (in 2016): two waves – 2009, 2016	<i>The International Civic and Citizenship Education Study</i> (ICCS). This survey is focused on civic and citizenship education and surveyed students to measure their civic knowledge, as well as teachers of civics. Source: IEA, https://www.iea.nl/studies/iea/iccs .
Benavot (2004)	118 countries in the 1980s and the 2000s	This dataset provides the emphasis on curriculum categories as a % of median yearly instructional hours at the primary (average grades 1-6) and secondary (average grades 7-8). Note: aggregated data for the 1980s and the 2000s. The dataset is shared with us by Aaron Benavot.
		Continued on next page

Table A-1 – continued from previous page

<i>Dataset</i>	<i>Coverage</i>	<i>Description</i>
Buckner and Russell (2014) (similar data also used in Bromley, Meyer, and Ramirez (2011), Bromley (2014), and Lerch, Russell, and Ramirez (2017))	68 countries in 1973–2007. Note: another version of the data extends back to the 1950s: 78 countries in 1955–2011 (this textbook dataset was shared with us by Patricia Bromley).	<i>Globalization and Global Citizenship in Textbooks</i> : the textbook-level dataset based on information from 550 textbooks in history, civic and social studies. The attributes of textbooks were hand-coded and recorded as variables, e.g., whether a textbook mentions citizen rights. Source: replication data for Buckner and Russell (2014), https://elizabethbuckner.com/datasets .

Table A-2. Existing cross-national datasets in political communication and the media

<i>Dataset</i>	<i>Coverage</i>	<i>Description</i>
Djankov et al. (2003), extended in Guriev and Treisman (2020)	cross-section of 97 countries	The state ownership of the media, based on the top-five broadcast outlets in each country. Source: Table A1, Appendix of Guriev and Treisman (2020)
Baggott Carter and Carter (2023)	58 countries, time period is unclear	The content of authoritarian pro-regime propaganda coded from the corpus of the news articles published in state-owned newspapers. Baggott Carter and Carter (2021) use data from 30 countries in 1997–2017 (over 6 mln newspaper articles in six languages).
Mechkova et al. (2021) and Coppedge et al. (2022)	202 countries, 2000–2021	The <i>Digital Society Project</i> (DSP) includes indicators of government dissemination of false information, Internet filtering and shut down capacity, government social media shut down, government social media censorship, etc. Source: https://v-dem.net/data (ver 12).
Coppedge et al. (2022)	202 countries, 1900–2021	The <i>V-Dem Dataset</i> includes indicators of the media: government censorship, media bias, print / broadcast media perspectives, print / broadcast media being critical, etc. Source: http://digitalsocietyproject.org , https://v-dem.net/data (ver 12).
<i>Freedom House</i>	195 countries in 2019	Freedom and the Media index: “Are there free and independent media?”. Source: https://freedomhouse.org/freedom-and-media-research-methodology .

B Appendix: Historical development in the academic use of the term indoctrination

The term indoctrination has been used since the Middle Ages. Under the Roman Catholic Church, European education was synonymous with the “implanting of Christian doctrine” (Gatchel, 1959, p. 304). However, in the late 19th century, the term became broader and essentially a synonym to education (Puolimatka, 1996, p. 109). According to the 1901 New England Dictionary indoctrination is “instruction, formal teaching” (Raywid, 1980, p. 2).

After WWI, the term indoctrination acquired a derogatory connotation similar to propaganda and brainwashing and came to be regarded as the “antithesis of education for life in a democracy” (Gatchel, 1959, p. 206). “As early as 1915, Dewey accused authoritarian education of engendering attitudes of “obedience,” “docility,” “submission,” and “passivity.” (John Dewey and Evelyn Dewey, *Schools of Tomorrow*, 1915 cited in Raywid (1980, p. 3)).

However, indoctrination was still an ambiguous concept in the 1940s: in 1941, Benjamin Floyd Pittenger published *Indoctrination for American Democracy*: his main argument was that indoctrination was necessary, especially during the war years, to create “nationalistic loyalty” (as cited in Gatchel, 1959, pp. 307–8) in the form of democratic patriotism. However, after the end of WWII, the debate on the meaning of the term was revived: “depending upon the definition of the word and the educational philosophy of the educators, [indoctrination] is either desirable or not” [ibid., p. 308]. Throughout the 1950s and 1960s “Indoctrination (. . .) came into popular currency in the United States” (Brandenberger, 2012, p. 7) with the aim that the youth should be indoctrinated with the core ideas of democracy (Moore, 1966, p. 398).

The rise of dictatorships in Europe and the WWII period contributed a lot to shaping the negative meaning of the term in the subsequent decades. Indoctrination became more and more associated with authoritarian rule, whereby political education in democracies was described as ‘education’ or more specifically ‘civic education’, while in autocracies similar teaching methods are described as ‘indoctrination’ (Gatchel, 1959, p. 397) by Western analysts, a position which many would still subscribe to today.⁵²

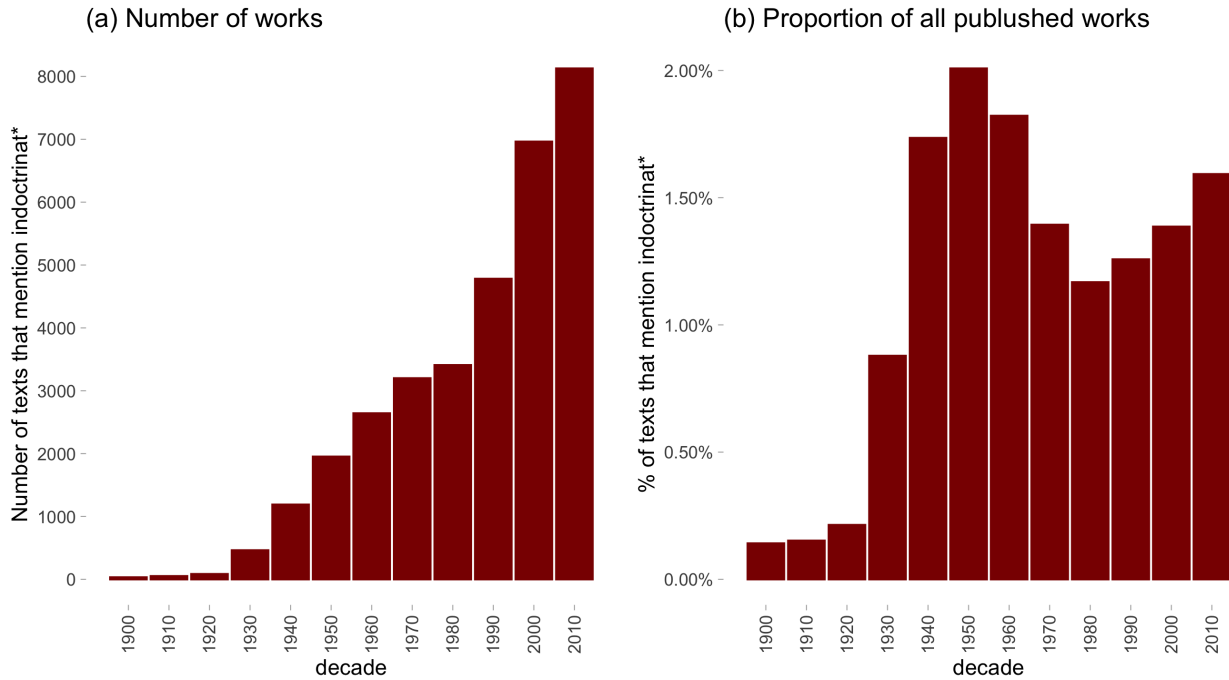
By the end of the 1980s, the interest to the concept subsided. Woods and Barrow (2006, p. 70) observed that around this time, “consideration was given to cutting out [their book] chapter [on indoctrination] altogether, on the grounds that the word ‘indoctrination’ was no longer in common use and the practice perhaps not as significant as had once been thought.” Their observations were based on newspapers. However, is this true for academic research as well? In order to explore this question, we conducted a full-text search of the number of journal articles, books and book chapters that mention the stemmed term “indoctrinat*” at least once, using the JStor database since 1900.⁵³ Figure A-1.a plots the total of 33,071 documents by decade.⁵⁴ Even taking into account that over time, more and more research is getting published (Figure A-1.b), there is no doubt that indoctrination is still a widely used term in the academic literature, with about 15,000 works mentioning the term in the past 20 years.

⁵²“With the derogation of the term [indoctrination] American educators and educationists have been obliged to devise a word to describe the process of cultural transmission in a pluralistic society. ‘Socialization’ was and might have continued to be the answer” (Gatchel, 1959, p. 309).

⁵³The fields included are: Economics, history, political science, philosophy, education, and other social sciences. The database was accessed 21/01/21, using <https://tdm-pilot.org>.

⁵⁴It should be noted that the 2010 decade is partially truncated, as JStor only includes full-text searches of journal articles until 2017.

Figure A-1. Number and proportion of journal articles, books and book chapters that mention the term “*indoctrinat**” at least once on JStor



We can further zoom into the corpus of these selected documents that refer to indoctrination to investigate whether these texts also refer to other relevant concepts. [Figure A-2](#) plots the proportion of documents that mention “democracy” or “authoritarian”. First of all, we note that democracy is still the most likely connection to indoctrination. We do see the normalization of the term in the pre-WWI period to describe indoctrination generally as education, with a slight decline in the 1920s, as observed by Gatchel (1959). The graph also picks up the revival of the term in democracies as described by Pittenger (1941). After that, we do see a decline in the use of the term in democracies until the 1990s, when it starts to raise again. On the other hand, [Figure A-2](#) also confirms that the use of indoctrination in connection with authoritarianism is also on a steady rise throughout the 20th century, with about 20% of works that refer to indoctrination also referring to “authoritarian”.

We explicitly expand the use of concept of indoctrination beyond education, which is the traditional focus of indoctrination research. This is confirmed by [Figure A-4](#), which demonstrates that education is key to the concept of indoctrination. Between 60-75% of academic texts that mention indoctrination also refer to education or schools. This confirms the close (historical) connection between the two concepts, as outlined above. However, the figure also illustrates the relative importance of the media and propaganda in connection to indoctrination, with historically about 30% of academic works mentioning propaganda, with the most recent academic work on indoctrination 50% mentioning the media.

Figure A-2. Proportion of mentions of “democracy” and “authoritarian” in academic works that mention the term “indoctrinat*”

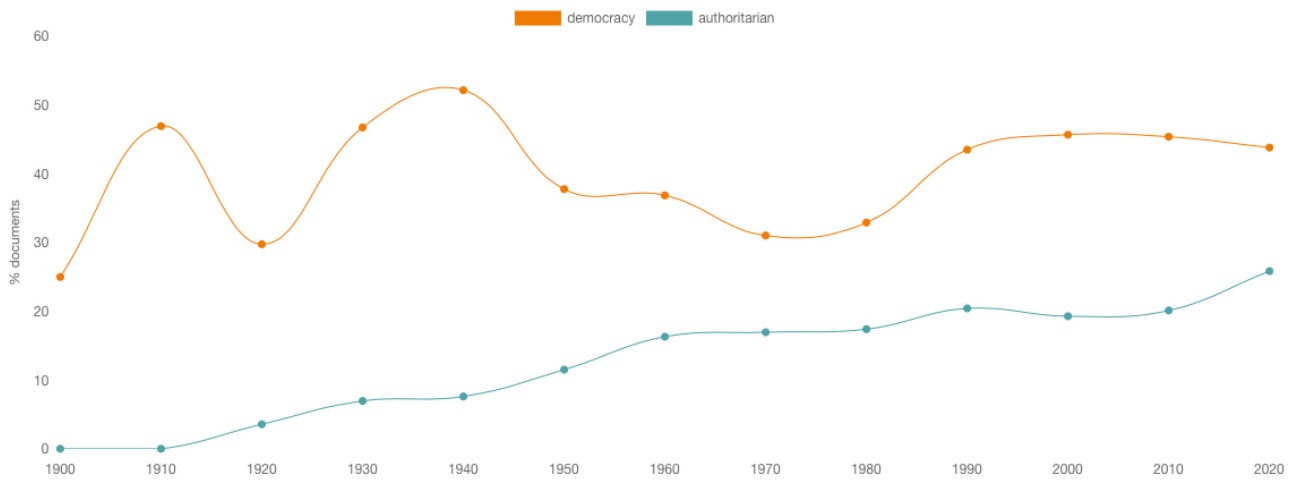


Figure A-3. Proportion of mentions of “Communism”, “Fascism”, “Nationalism”, “Legitimacy” in academic works that mention the term “indoctrinat-”

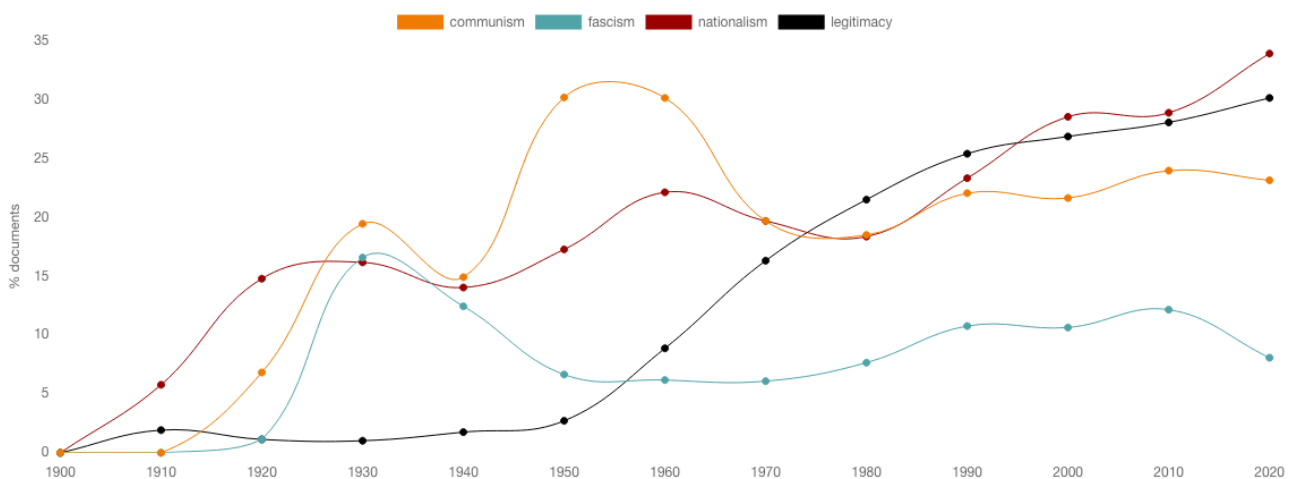
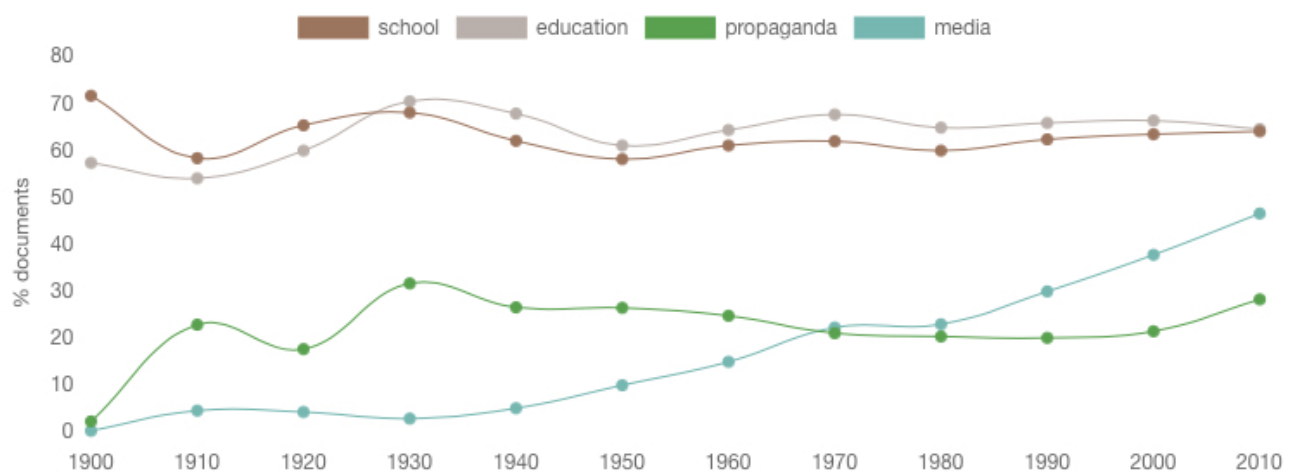


Figure A-4. Proportion of academic works that mention indoctrination and also mention indoctrination channels



C Appendix: Pilot surveys and expert vetting

In Spring 2021, we conducted a pilot expert survey on country cases that represent different regime types and levels of economic development (Chile, China, Russia, Tanzania, Turkey, and the United States). Based on the results of this survey and the feedback we received, we revised our questions and fielded a secondary pilot survey (Spain, and the United Kingdom).

After making another round of revisions and finalizing our survey, we used Qualtrics to distribute an online expression of interest form to experts.⁵⁵ In this form, we asked experts to provide basic information: their email, institutional affiliation, list of publications, information about their website (if any), highest educational degree, current position, as well as the area(s) of their expertise in education (e.g., the main country of expertise and the second country of expertise, the time period(s) they focus on).

We used three main channels to recruit potential experts. First, with the help of research assistants, we consulted the ratings of top universities in each country and collected emails of all faculty members (research and teaching focused), postdoctoral scholars, and graduate students whose research expertise is in the field of education. Second, we used Google Scholar to find academic journals, books and book chapters, policy reports, as well as regional conferences on education, and collected emails of the authors/participants. Third, we contacted education-related NGOs and policy experts outside of academia, asking them to circulate our call among their network.

From July 2021 to February 2022, we reached out to 24,000 education experts from around the world. More than 1,400 experts responded to our call and expressed interest in participating in the expert survey. With the help of research assistants who possessed a background in comparative education, the list of experts was vetted according to modified V-Dem expert criteria. More specifically, we used the following scheme to assign scores to individual experts who signed up and expressed interest in the call for experts:

- 1 = our top 1 choice, should be contacted first, e.g. an established academic expert or an expert with many years of experience in policy-making (in addition, ideally, they would be able to code back in time, e.g. since 1945)
- 2 = have a clear profile in education but could be a less established expert compared to (1), e.g. a postdoctoral scholar with a degree in education, have been teaching for many years so they would know the context very well (at least for the most recent years)
- 3 = background in education but their specialisation is not in basic education (e.g. they work on higher education, special education, arts education, etc.)
- 4 = a general expert (could know the country well but do not specialize in education) or it could be that we do not enough information to make a decision about their knowledge of education (e.g. a master degree in education but apart from the degree we cannot infer if they have relevant expertise)
- irr = irrelevant (claim they have expertise in education but they don't from what we can tell; any other irrelevant categories)

⁵⁵We used two separate email templates for experts residing in democratic and autocratic countries.

One caveat is that we could not completely control experts' impartiality. We checked whether current work is for the government. We filtered out cases when experts explicitly stated that they work for 'Government offices' in the expression of interest form. We also double checked if they work for the government or consult the government at present, and filtered out such cases. We decided to keep cases when experts have research funded by the government or if they consulted the government or worked on government reports on education in the past. In addition, we also decided to invite experts who might have worked for the government in the past but not at present.

D Appendix: Coder response form

Figure A-5. V-Dem Coder Response Form

Language:

English

DEMED (Argentina)

1. Read Question. 2. Click & drag to select years. 3. Apply or Edit specific dates, if desired. 4. Apply or type response. 5. Rate Confidence. 6. Submit. 7. Repeat for remaining years. 8. Click "Next".

Centralisation textbooks :

To what extent does a national authority set the official curriculum framework for schools?

The official curriculum may only be a framework, to which individual schools can contribute.

For this question, we are interested in all school subjects across levels of primary and secondary public education. If there are substantive differences between the primary and secondary education levels, please provide the response that is most accurate for the majority of schools.

A national (or federal) authority can include a state body organized under the auspices of a Ministry of Education. The sub-national level includes states, provinces, districts, municipalities, villages, local educational authorities, etc.

Min: 0 Max: 3

(0) A national authority does not set the official curriculum framework, that is, the curriculum framework is completely set by sub-national authorities.

(1) Sub-national authorities mostly set the official curriculum framework, with some input from the national authority.

(2) A national authority mostly sets the official curriculum framework, with some input from sub-national authorities.

(3) A national authority fully sets the official curriculum framework.

Confidence: 45%

I think this response is close, but this is very hard to assess and I don't have all the relevant information.

Submit

Jump To Question:

Centralisation textbooks

Previous

Next

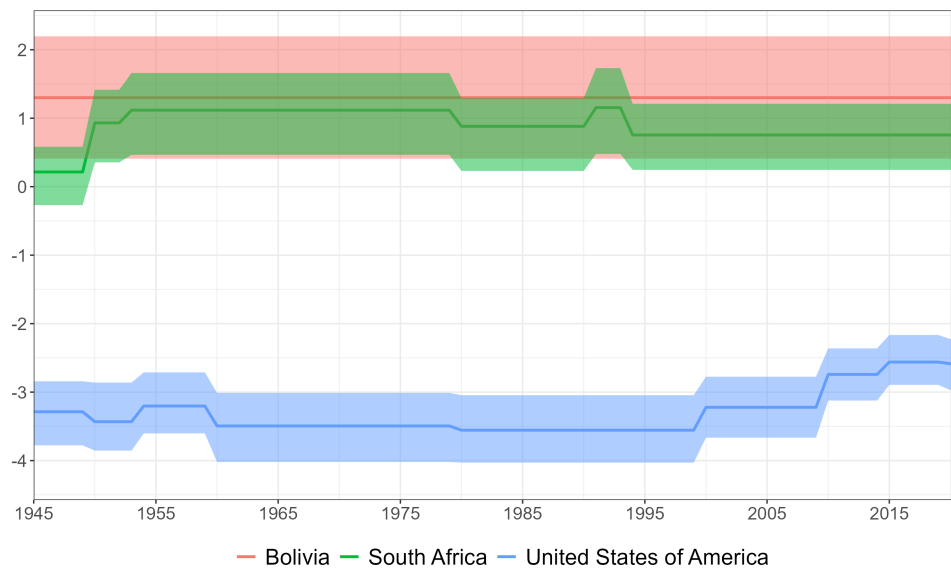
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ix

E Appendix: Measurement uncertainty

The figure below plots the point estimates of the centralized curriculum indicator and the accompanying 68% credible intervals for Bolivia, South Africa, and the United States in Figure A-6. Bolivia only has one unique coder, whereas South Africa and the United States have 13 and 20 coders, respectively. Since estimates for Bolivia are based on just one coder, the credible interval is relatively wide.⁵⁶ Here we lack the information to make confident inferences about the indicator's true latent value. Conversely, the credible interval is much narrower for South Africa and the United States since we have many more responses to draw from.⁵⁷ Furthermore, even though the point estimates for Bolivia are consistently higher than that of South Africa, it is not possible to conclude with any certainty that Bolivia does in fact have a more centralized curriculum than South Africa given the overlapping uncertainties of the estimates for each country. Nonetheless, we can be quite confident that the United States has a more decentralized curriculum compared to both Bolivia and South Africa.

Figure A-6. Centralized curriculum (model estimates)



Note: Higher values are associated with a more centralized curriculum.

⁵⁶Considering that the standard deviation of the point estimates of the indicator is 1.2730.

⁵⁷Experts also seem to generally agree that South Africa's curriculum is relatively centralized and the United States' curriculum is relatively decentralized.

F Appendix: Media plots

Figure A-7. Indoctrination potential in the media (2021)

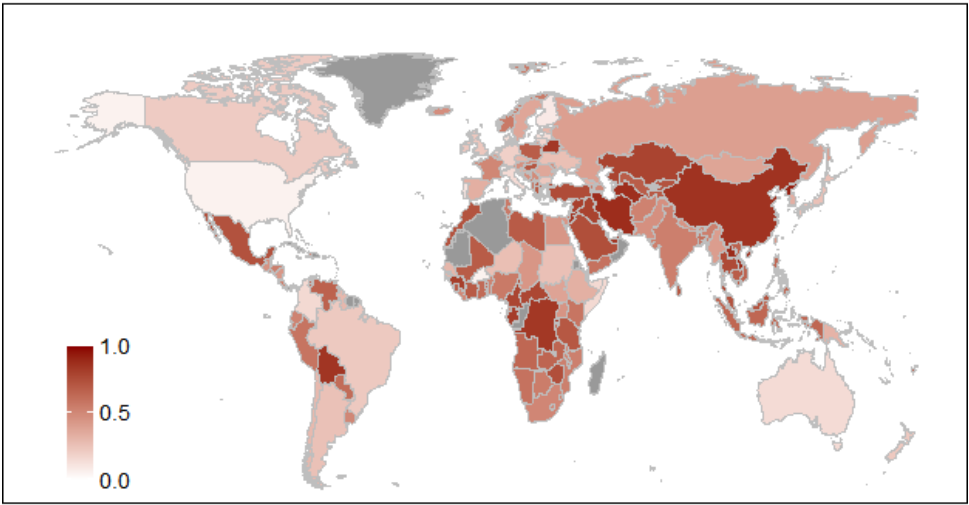


Figure A-8. Indoctrination potential in the media across regimes

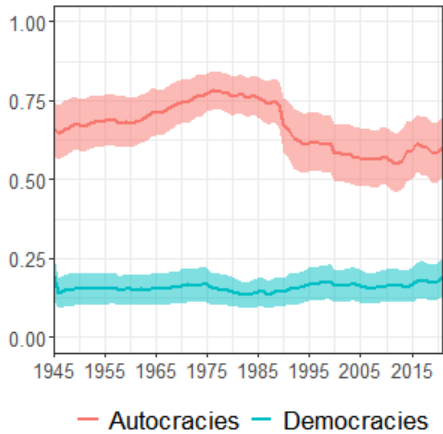
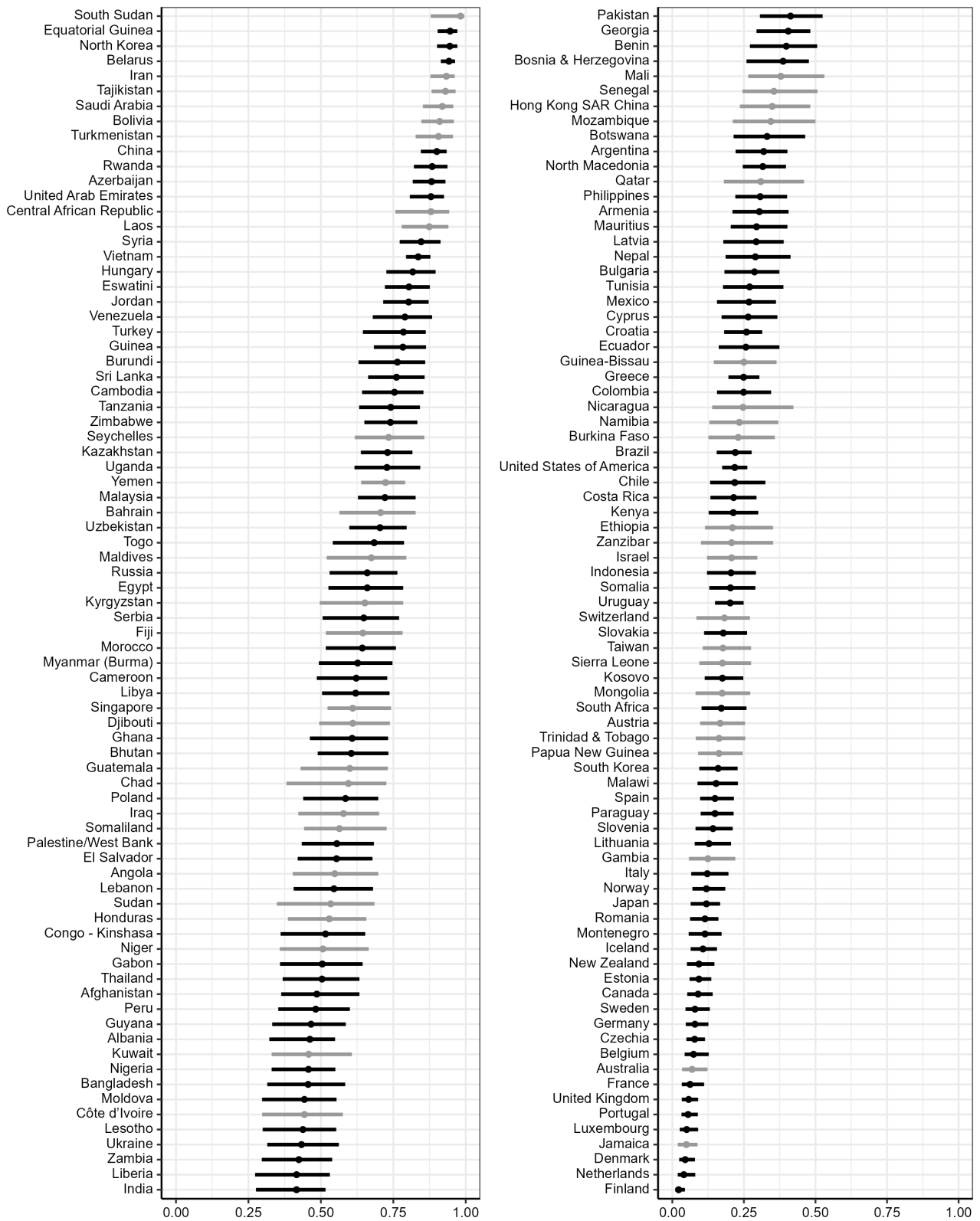


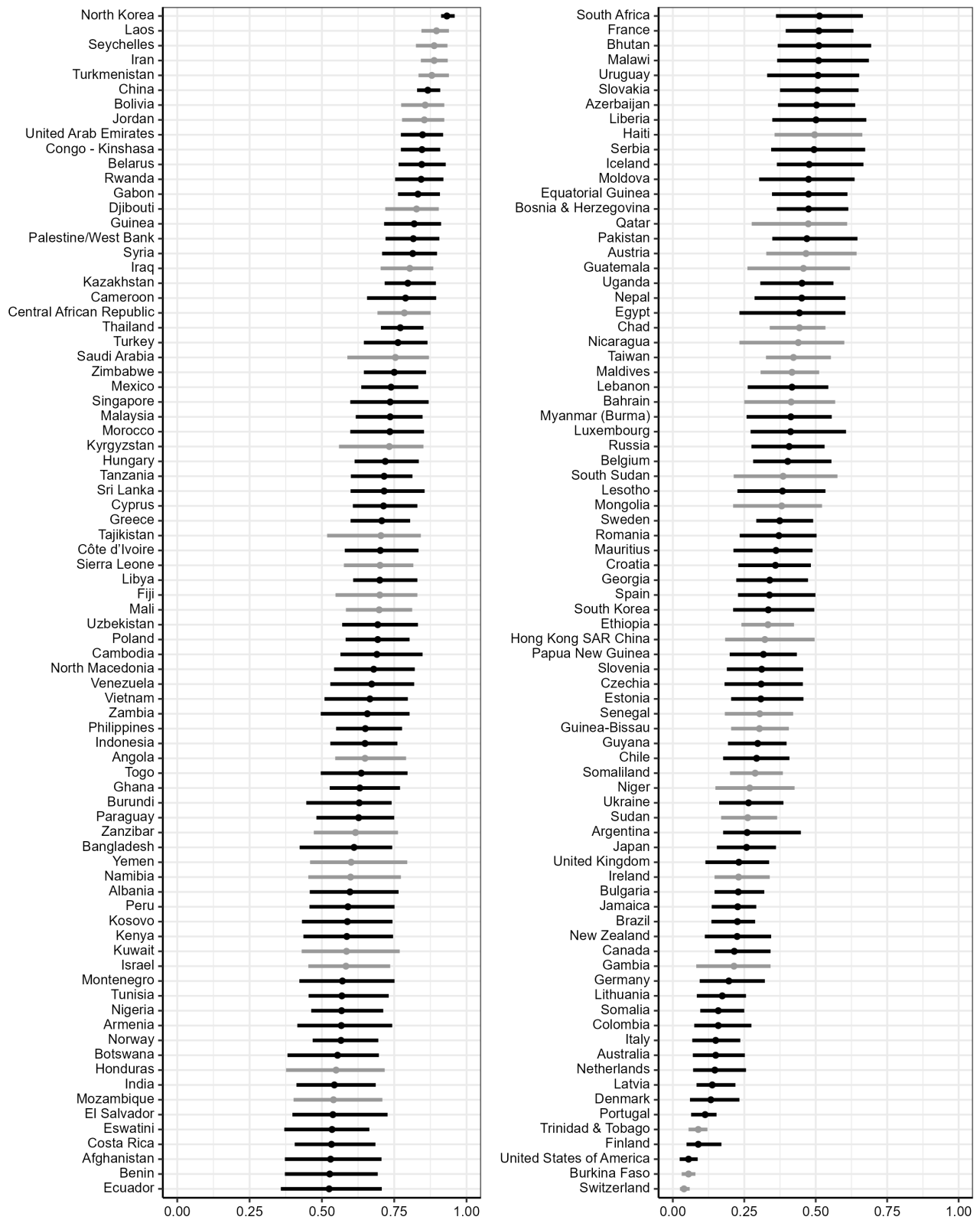
Figure A-9. Indoctrination potential in media (2021)



Note: Point estimates and confidence intervals for observations that have less than 3 coders are shaded in grey.

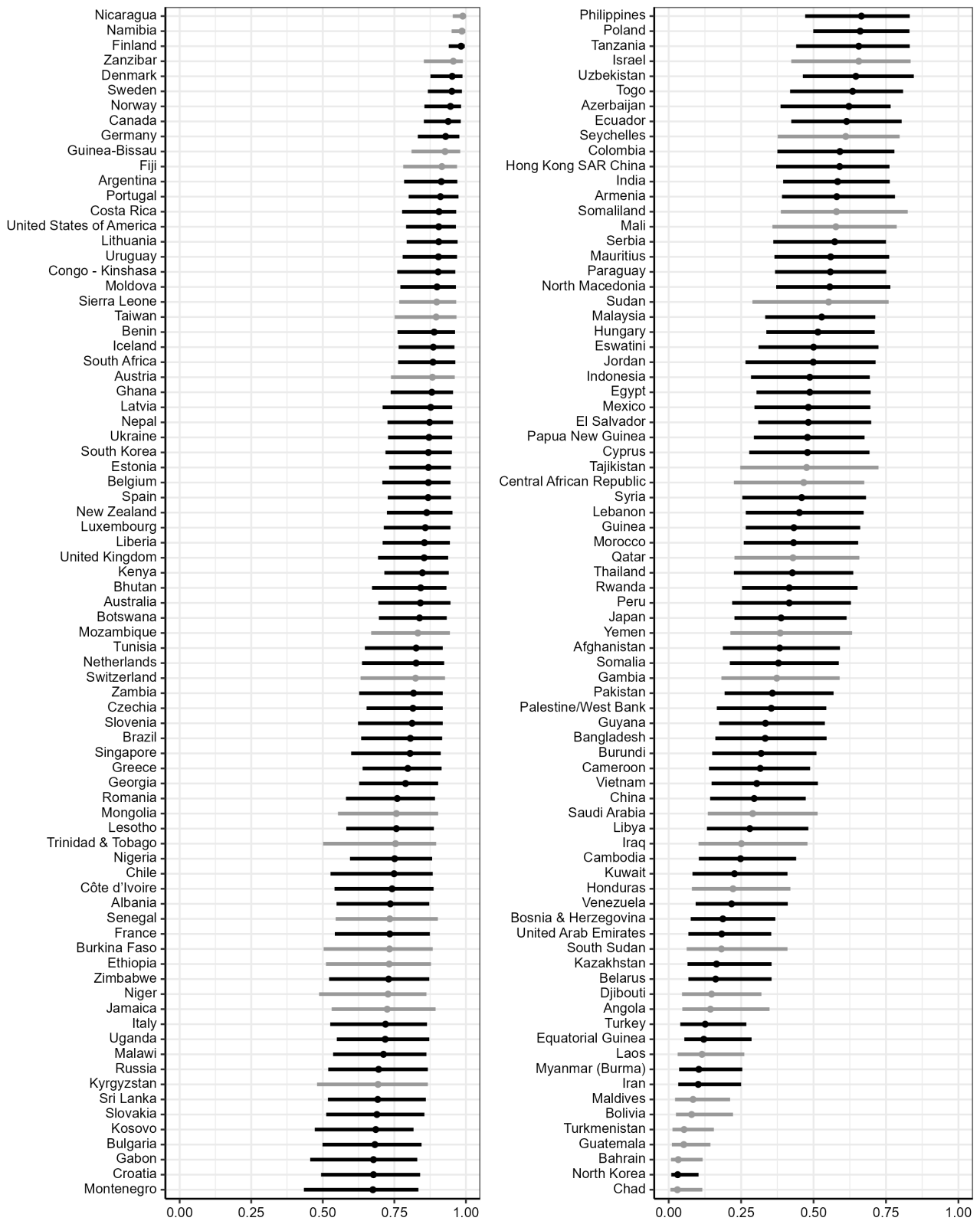
G Appendix: Indoctrination indices in education (2021)

Figure A-10. Indoctrination potential in education (2021)



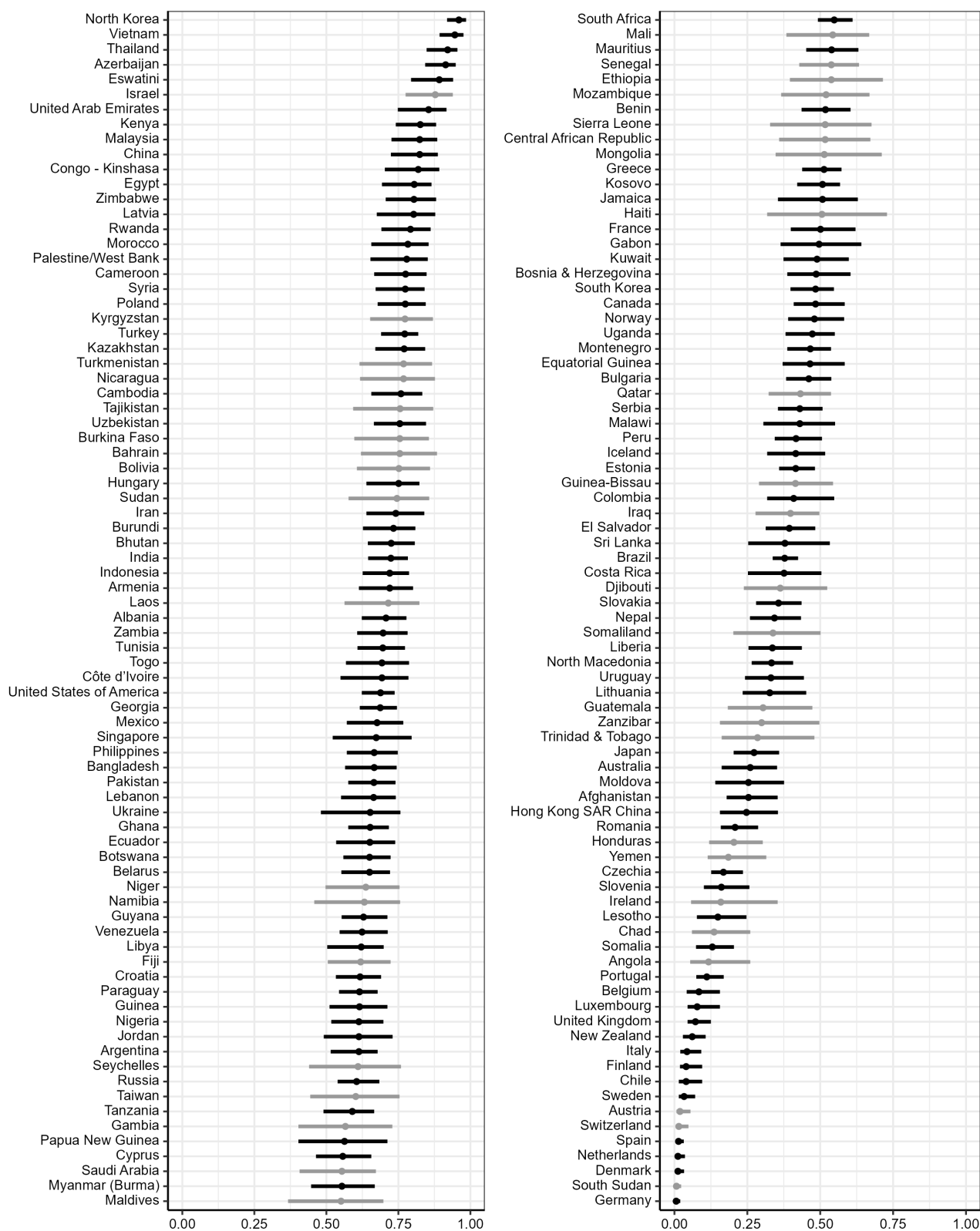
Note: Point estimates and confidence intervals for observations that have less than 3 coders are shaded in grey. The confidence intervals represent the lower and upper bounds of the 68% credible intervals.

Figure A-11. Democratic indoctrination content in education (2021)



Note: Point estimates and confidence intervals for observations that have less than 3 coders are shaded in grey. The confidence intervals represent the lower and upper bounds of the 68% credible intervals.

Figure A-12. Patriotic indoctrination content in education (2021)



Note: Point estimates and confidence intervals for observations that have less than 3 coders are shaded in grey. The confidence intervals represent the lower and upper bounds of the 68% credible intervals.

H Appendix: Democracy and the indoctrination indices (2021)

Figure A-13. Levels of Democracy and Indoctrination Potential in 2021

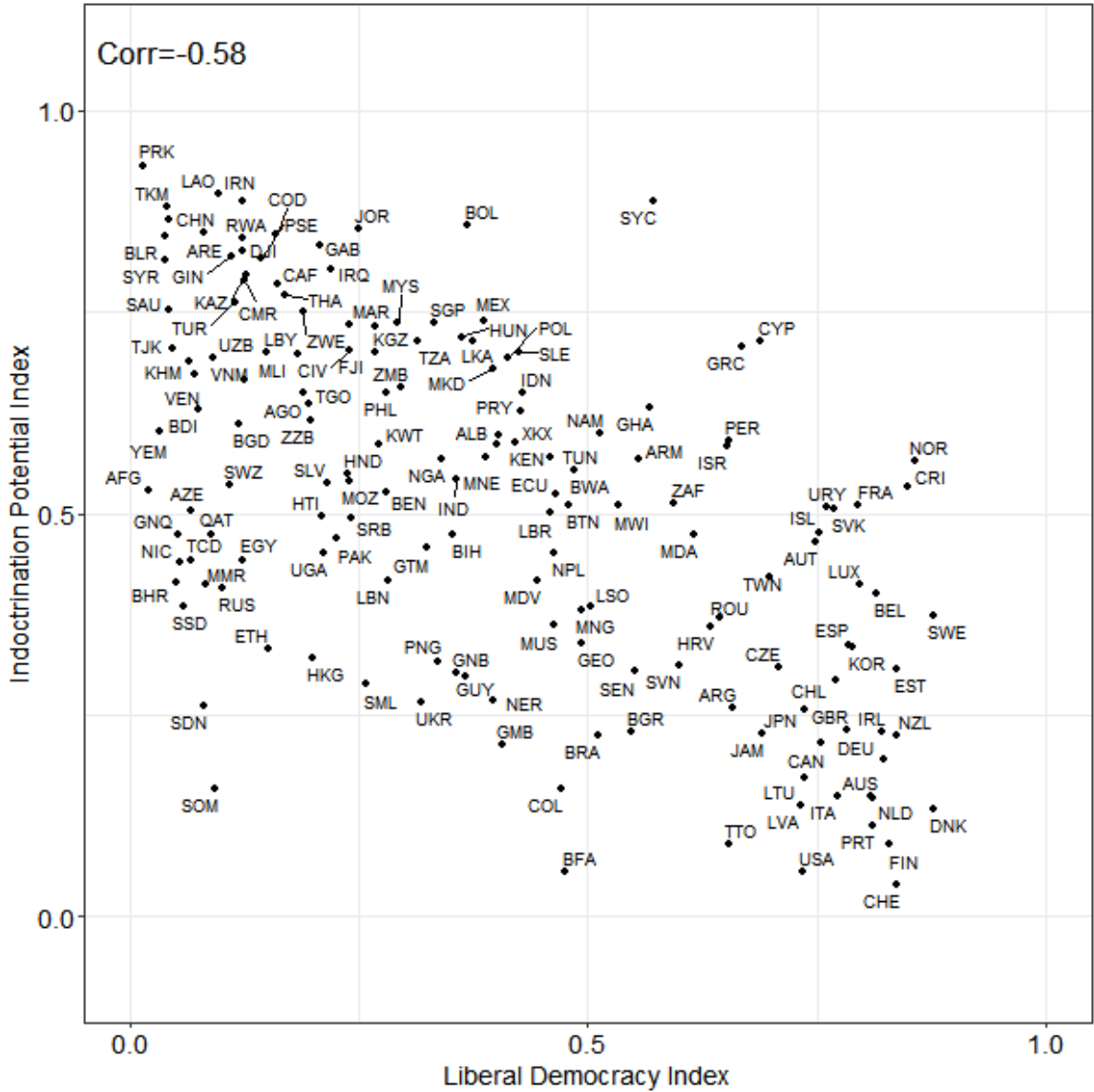


Figure A-14. Levels of Democracy and Democratic Content in 2021

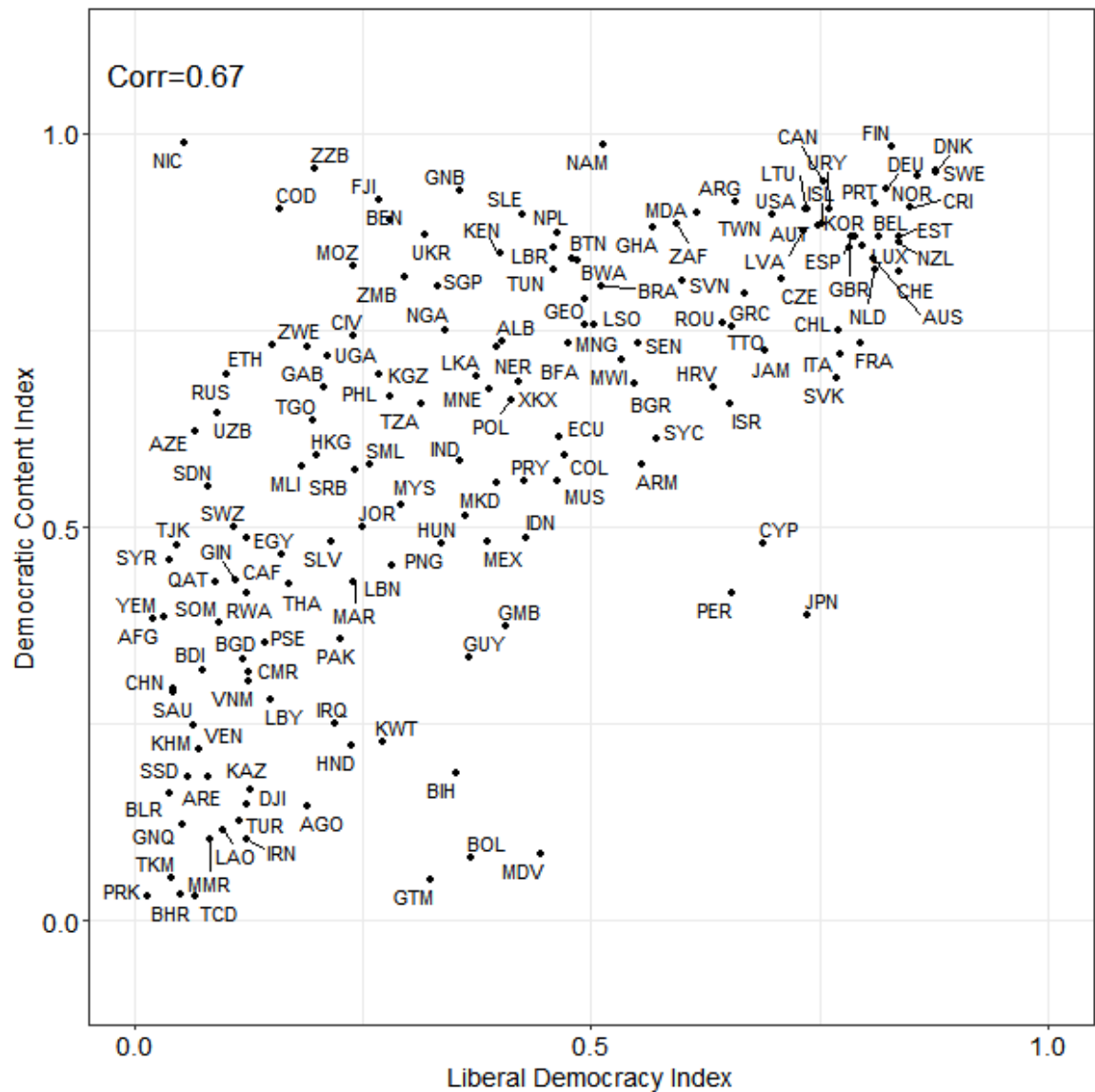
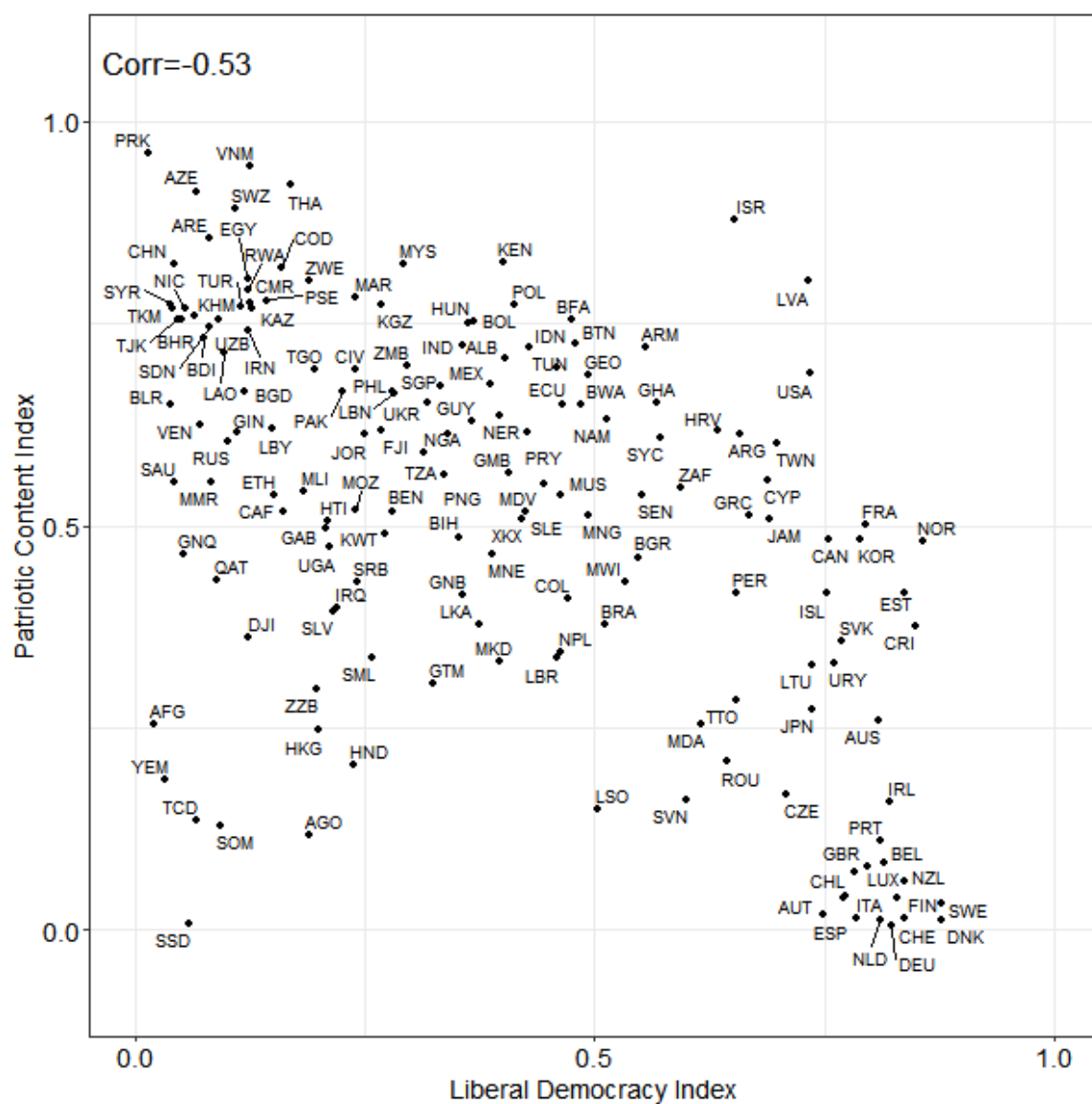
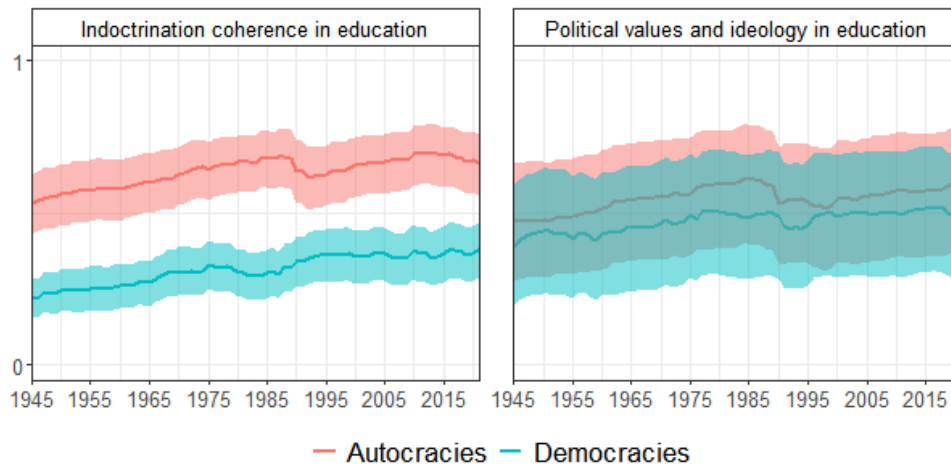


Figure A-15. Levels of Democracy and Patriotic Content in 2021



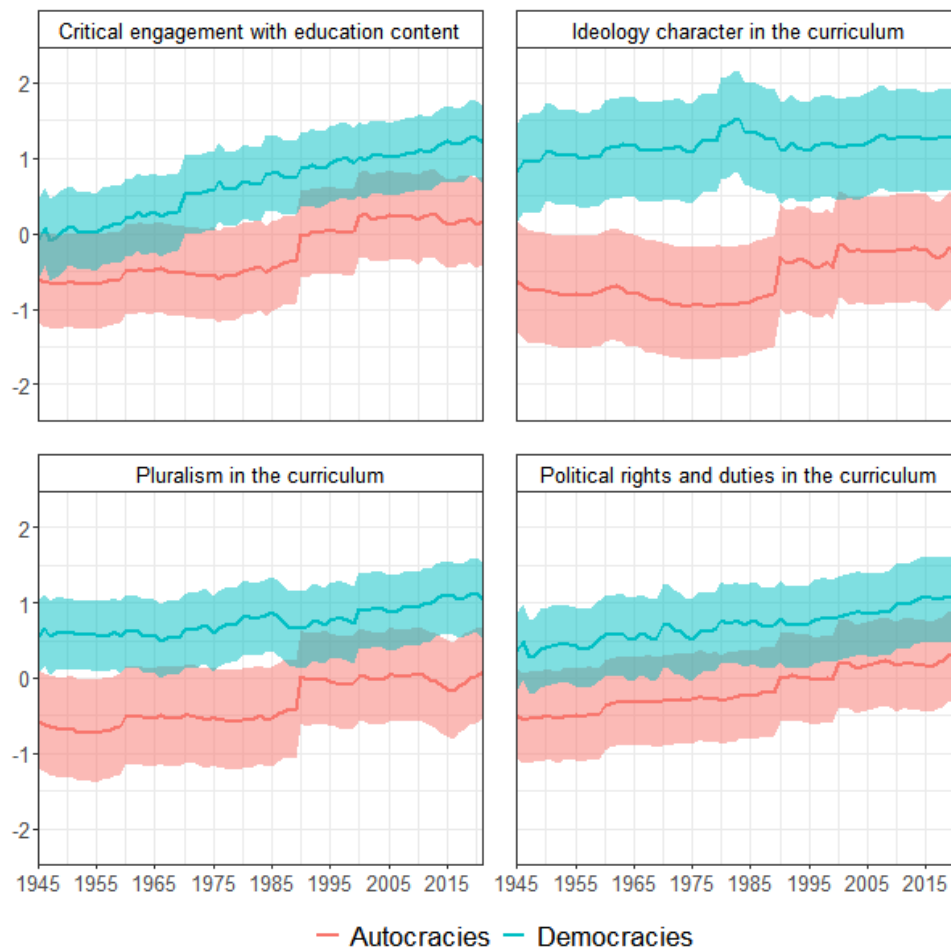
I Appendix: Components of indices across regimes

Figure A-16. Components of indoctrination potential: variation over time in democracies and autocracies.



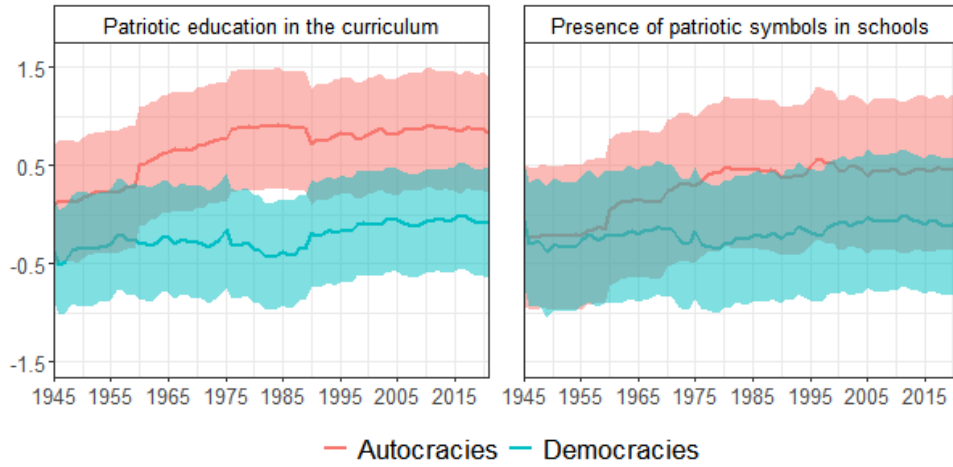
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure A-17. Components of democratic indoctrination content index: variation over time in democracies and autocracies.



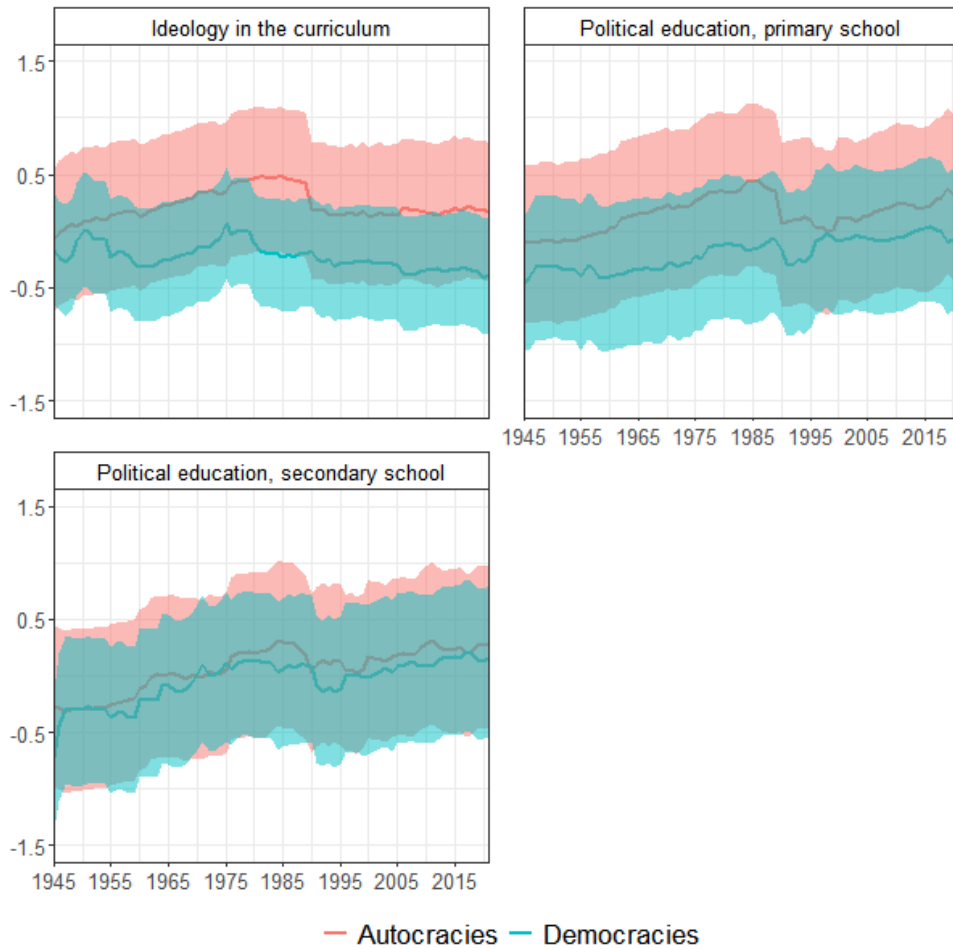
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure A-18. Components of patriotic indoctrination content index: variation over time in democracies and autocracies.



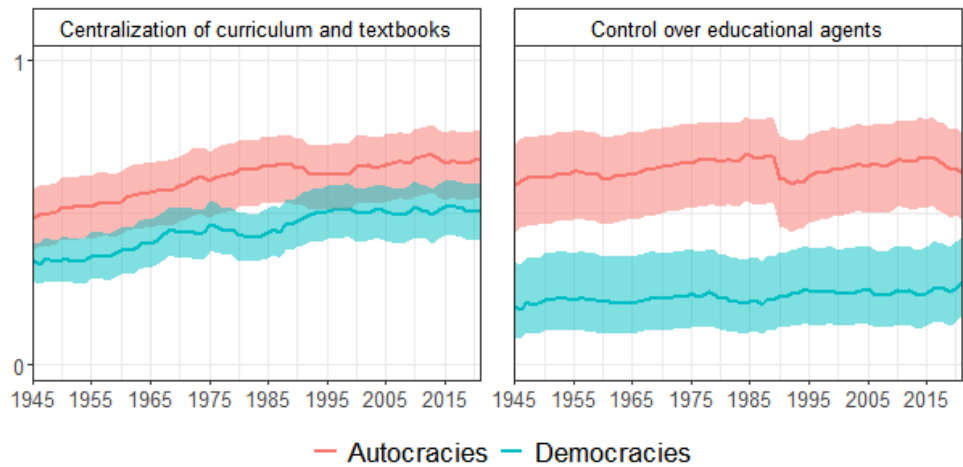
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure A-19. Components of political education efforts in education index: variation over time in democracies and autocracies.



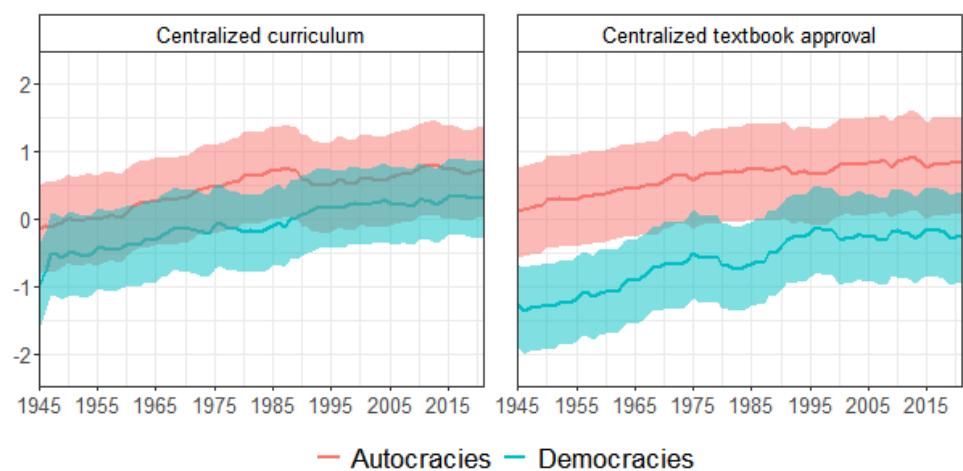
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure A-20. Components of indoctrination coherence in education: variation over time in democracies and autocracies.



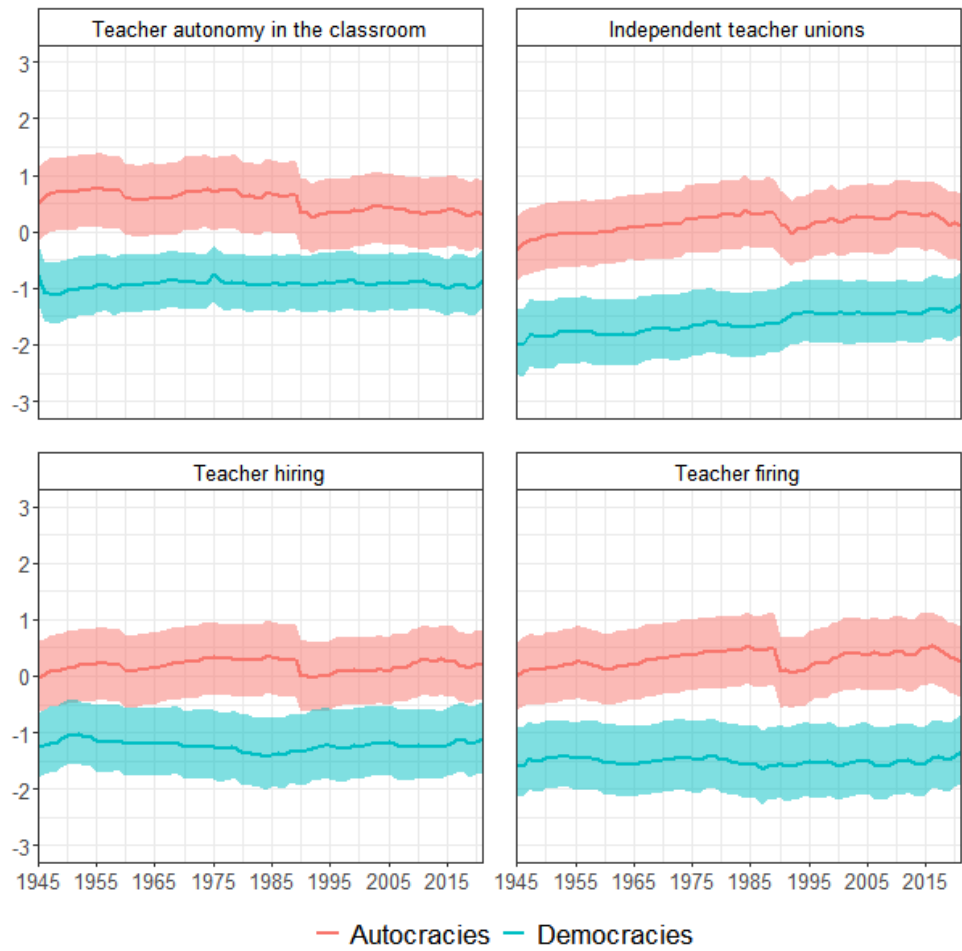
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure A-21. Components of centralization of curriculum and textbooks index: variation over time in democracies and autocracies.



Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure A-22. Components of control over educational agents index: variation over time in democracies and autocracies.



Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

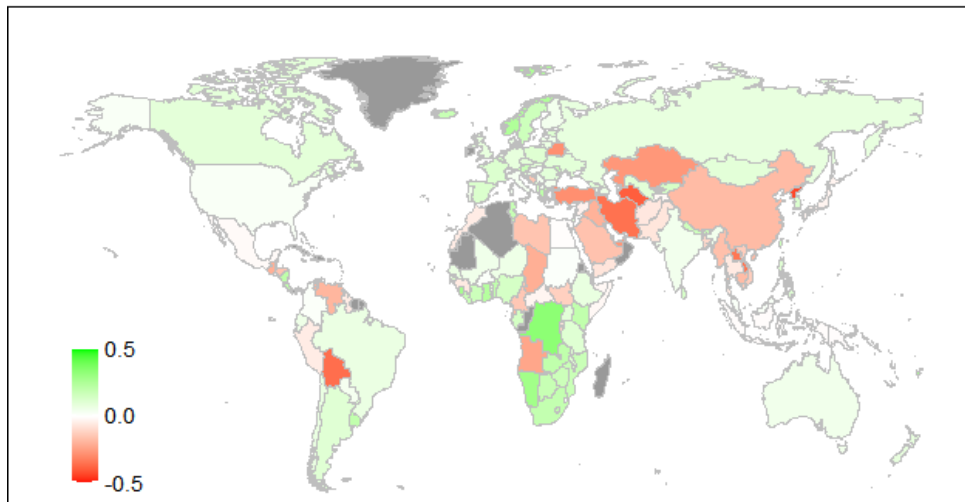
J Appendix: Composite indoctrination index

The indoctrination potential and democratic content indices in education could be aggregated, for example, using the formula:

$$\text{Indoctrination potential index} \times (\text{Democratic content index} - 0.5)$$

This index ranges from 0.5 to -0.5, where scores closer to 0.5 (-0.5) represent observations that have both high indoctrination potential with strong democratic (autocratic) content, and scores that are closer to 0 are those with weak indoctrination (weak potential and/or ideological content).

Figure A-23. Indoctrination in Education, 2021



Scatter plot showing the relationship between the Liberal Democracy Index (X-axis) and the Indoctrination Index (Y-axis). The X-axis ranges from 0.00 to 1.00, and the Y-axis ranges from -0.5 to 0.5. A dashed horizontal line at Y=0.0 separates 'Weak Indoctrination' from 'Strong Democratic/Authoritarian Indoctrination'. A diagonal line with a slope of 0.5 is labeled 'Corr=0.5'. Data points are labeled with country codes, showing a general positive correlation between liberal democracy and democratic indoctrination.

K Appendix: Correlations and classifications

Centralized curriculum (v2edcentcurrlm)

NA

Centralized textbook approval (v2edcenttxbooks)

Validation Variable: Is there evidence that the textbook has been developed to meet official curriculum requirements? (Source: Bromley, Meyer, and Ramirez 2011).

Responses:

0=No.

1=Yes.

Classification: 0.75.

Countries: 83.

Years: 1945-2012.

Observations: 768.

Notes: Unit of observation is textbook-year. v2edcenttxbooks_ord is recoded as 2 when 1.

Political education, primary school (v2edpoledprim)

NA

Political education, secondary school (v2edpoledsec)

NA

Political rights and duties in the curriculum (v2edpoledrights)

Validation Variable: To what extent does the textbook discuss rights/freedoms/liberties? (Source: Bromley, Meyer, and Ramirez 2011).

Responses:

0=No/rarely.

1=Some.

2=A lot.

Classification: 0.44.

Countries: 83.

Years: 1945-2012.

Observations: 762.

Notes: Unit of observation is textbook-year. v2edpoledrights_ord is recoded as 1 when 2.

Validation Variable: To what extent does the textbook discuss duties/responsibilities/obligations of citizenship? (Source: Bromley, Meyer, and Ramirez 2011).

Responses:

0: No/rarely.

1: Some.

2: A lot.

Classification: 0.36.

Countries: 83.

Years: 1945-2012.

Observations: 763.

Notes: Unit of observation is textbook-year. v2edpoledrights_ord is recoded as 1 when 2.

Patriotic education in the curriculum (v2edpatriot)

Validation Variable: Does the textbook celebrate a distinctive national state or national society and culture? (Source: Bromley, Meyer, and Ramirez 2011).

Responses:

0=No.

1=Yes.

Classification: 0.6.

Countries: 83.

Years: 1945-2012.

Observations: 755.

Notes: Unit of observation is textbook-year. v2edpatriot_ord is recoded as 0 when 1 and 3 when 2.

Ideology in the curriculum (v2edideol)

Validation Variable: To what extent does the current government promote a specific ideology or societal model (an officially codified set of beliefs used to justify a particular set of social, political, and economic relations; for example, socialism, nationalism, religious traditionalism, etc.) in order to justify the regime in place? (Source: Coppedge et al. 2022).

Correlation: 0.4.

Countries: 159.

Years: 1945-2021.

Observations: 11359.

Ideology character in the curriculum (v2edideolch_rec)

Validation Variable: To what extent is the ideal of electoral democracy in its fullest sense achieved? (Source: Coppedge et al. 2022).

Correlation: 0.73.

Countries: 159.

Years: 1945-2021.

Observations: 11396.

Pluralism in the curriculum (v2edplural)

Validation Variable: Are there open-ended questions (meaning questions without right-wrong answers that require students to form their own opinion) in the textbook? (Source: Bromley, Meyer, and Ramirez 2011).

Responses:

0: No questions.

1: There are questions, but none are open-ended.

2: Some/a few questions are open-ended.

3: A lot/nearly all questions are open-ended.

Classification: 0.5.

Countries: 82.

Years: 1945-2012.

Observations: 416.

Notes: Unit of observation is textbook-year. v2edplural_ord is recoded as 0 when 1 and the validation variable is recoded as 0 when 1. Textbook observations limited to history textbooks.

Validation Variable: Does the textbook generally assume that the student should develop his/her own point of view, or interpretation, of history or social issues? (Source: Bromley, Meyer, and Ramirez 2011).

Responses:

0=No.

1=Yes.

Classification: 0.61.

Countries: 82.

Years: 1945-2012.

Observations: 416.

Notes: Unit of observation is textbook-year. v2edplural_ord is recoded as 0 when 1 and 3 when 2.

Textbook observations limited to history textbooks.

Critical engagement with education content (v2edcritical)

Validation Variable: Are there open-ended questions (meaning questions without right-wrong answers that require students to form their own opinion) in the textbook? (Source: Bromley, Meyer, and Ramirez 2011).

Responses:

0: No questions.

1: There are questions, but none are open-ended.

2: Some/a few questions are open-ended.

3: A lot/nearly all questions are open-ended.

Classification: 0.5.

Countries: 82.

Years: 1945-2012.

Observations: 416.

Notes: Unit of observation is textbook-year. v2edcritical_ord is recoded as 0 when 1 and the validation variable is recoded as 0 when 1. Textbook observations limited to history textbooks.

Validation Variable: Does the textbook generally assume that the student should develop his/her own point of view, or interpretation, of history or social issues? (Source: Bromley, Meyer, and Ramirez 2011).

Responses:

0=No.

1=Yes.

Classification: 0.65.

Countries: 82.

Years: 1945-2012.

Observations: 416.

Notes: Unit of observation is textbook-year. v2edcritical_ord is recoded as 0 when 1 and 3 when 2.

Textbook observations limited to history textbooks.

Teacher autonomy in the classroom (v2edteaautonomy)

NA

Mathematics and science education (v2edmath)

Validation Variable: Percent of median yearly instructional hours in math and science the primary level. (Source: Benavot 2004).

Classification: 0.51.

Countries: 116.

Years: 1980s, 2000s.

Observations: 182.

Notes: The validation variable is averaged over the 1980s and 200s and dichotomized using a threshold of 0.25.

Presence of patriotic symbols in schools (v2edscpatriot)

Validation Variable: Does the textbook celebrate a distinctive national state or national society and culture? (Source: Bromley, Meyer, and Ramirez 2011).

Responses:

0=No.

1=Yes.

Classification: 0.58.

Countries: 82.

Years: 1945-2012.

Observations: 753.

Notes: Unit of observation is textbook-year.

Patriotic symbols celebrated (v2edscpatriotcb)

Validation Variable: Does the textbook celebrate a distinctive national state or national society and culture? (Source: Bromley, Meyer, and Ramirez 2011).

Responses:

0=No.

1=Yes.

Classification: 0.62.

Countries: 82.

Years: 1945-2012.

Observations: 753.

Notes: Unit of observation is textbook-year. v2edscpatriotceleb_ord is recoded as 0 when 1 and 3 when 2.

Extracurricular activities (v2edsceextracurr)

NA

Education requirements for primary school teachers (v2edtequal)

Validation Variable: 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) (Source: World Bank 2022).

Correlation: 0.34.

Countries: 100.

Years: 1998-2021.

Observations: 1156.

Teacher inspection (v2temonitor)

NA

Presence of teacher unions (v2edteunion)

Validation Variable: Does the government attempt to repress civil society organizations (CSOs)? (Source: Coppedge et al. 2022).

Correlation: 0.48.

Countries: 158.

Years: 1945-2021.

Observations: 11400.

Independent teacher unions (v2edteunionindp)

Validation Variable: Does the government attempt to repress civil society organizations (CSOs)? (Source: Coppedge et al. 2022).

Correlation: -0.66.

Countries: 151.

Years: 1945-2021.

Observations: 10105.

Teacher hiring for political reasons (v2edtehire)

Validation Variable: To what extent are appointment decisions in the state administration based on personal and political connections, as opposed to skills and merit? (Source: Coppedge et al. 2022).

Correlation: -0.46.

Countries: 159.

Years: 1945-2021.

Observations: 10719.

Teacher firing for political reasons (v2edtefire)

Validation Variable: If a citizen posts political content online that would run counter to the government and its policies, what is the likelihood that citizen is arrested? (Source: Mechkova et al. 2022).

Correlation: -0.67.

Countries: 158.

Years: 2000-2021.

Observations: 3604.

State-owned print media (v2medstateprint)

NA

State-owned broadcast media (v2medstatebroad)

Validation Variable: Share of top 5 TV stations owned by the state. (Source: Guriev and Treisman 2020).

Correlation: 0.63.

Countries: 81.

Years: 1980-2016.

Observations: 87.

Political influence, state-owned media (v2medpolstate)

Validation Variable: Of the major print and broadcast outlets, how many routinely criticize the government? (Source: Coppedge et al. 2022).

Correlation: -0.65.
Countries: 156.
Years: 1945-2021.
Observations: 10651.

Validation Variable: To what extent can citizens, organizations and the mass media express opinions freely? (Source: Donner, Hartmann, and Schwarz 2020).

Correlation: -0.63.
Countries: 122.
Years: 2005-2019.
Observations: 901.

Validation Variable: The Press Freedom index measures the amount of freedom journalists and the media have in each country and the efforts made by governments to see that press freedom is respected. (Source: Reporters Without Borders 2020).

Correlation: 0.6.
Countries: 146.
Years: 2003-2019.
Observations: 2417.

Political influence, non state-owned media (v2medpolnonstate)

Validation Variable: Of the major print and broadcast outlets, how many routinely criticize the government? (Source: Coppedge et al. 2022).

Correlation: -0.58.
Countries: 156.
Years: 1945-2021.
Observations: 10449.

Validation Variable: To what extent can citizens, organizations and the mass media express opinions freely? (Source: Donner, Hartmann, and Schwarz 2020).

Correlation: -0.54.
Countries: 120.
Years: 2005-2019.
Observations: 891.

Validation Variable: The Press Freedom index measures the amount of freedom journalists and the media have in each country and the efforts made by governments to see that press freedom is respected. (Source: Reporters Without Borders 2020).

Correlation: 0.54.
Countries: 148.
Years: 2003-2019.
Observations: 2462.

Patriotism in the media (v2medpatriot)

NA

Control of entertainment content (v2medentrain)

Validation Variable: Of the major print and broadcast outlets, how many routinely criticize the government? (Source: Coppedge et al. 2022).

Correlation: -0.71.

Countries: 159.

Years: 1945-2021.

Observations: 11412.

Sources:

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Donner, Sabine, Hauke, Hartmann, and Robert, Schwarz. 2020. "Transformation Index of the Bertelsmann Stiftung 2020." *Bertelsmann Stiftung*. Retrieved from <http://www.bti-project.org>.

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Mechkova, Valeriya, Daniel Pemstein, Brigitte Seim, and Steven Wilson. 2022. "DSP [CountryYear] Dataset v4." *Digital Society Project (DSP)*.

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L Appendix: Indoctrination potential in education across autocratic regime types

Table A-3. Summary Statistics: Entire Sample

Variable	Obs	Mean	SD	Min	Max
Indoctrination Potential	3973	0.6226	0.2209	0.006	0.957
Party Regime	3973	0.4991	0.5001	0	1
Personal Regime	3973	0.2459	0.4307	0	1
Military Regime	3973	0.1218	0.3271	0	1
Monarchy Regime	3973	0.1332	0.3398	0	1
log(GDPpc)	3973	1.1345	0.9803	-0.6482	5.0539

Table A-4. Summary Statistics: Sample with at Least 3 Coders

Variable	Obs	Mean	SD	Min	Max
Indoctrination Potential	2518	0.6677	0.1782	0.149	0.932
Party Regime	2518	0.5695	0.4953	0	1
Personal Regime	2518	0.2411	0.4278	0	1
Military Regime	2518	0.1219	0.3273	0	1
Monarchy Regime	2518	0.0675	0.2510	0	1
log(GDPpc)	2518	1.1572	0.8634	-0.6199	4.055

Table A-5. Country Fixed Effects Analysis

	Indoctrination Potential	
	(Entire Sample)	(Sample with at Least 3 Coders)
Party	0.0408*** (0.0072)	0.0537*** (0.0099)
Personal	0.0368*** (0.0074)	0.0409*** (0.0103)
Monarchy	-0.1556*** (0.0103)	-0.1540*** (0.0148)
log(GDPpc)	0.0187*** (0.0035)	0.0283*** (0.0041)
Constant	0.5928*** (0.0075)	0.6049*** (0.0101)
Countries	103	72
Observations	3973	2518

Note: *** p<0.01, ** p<0.05, * p<0.1