History Education and Nation-Building: Evidence from Taiwan*

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Abstract

Using novel data from Taiwan, we examine the impact of history curricula on national identity. The regular-track high school curriculum reform of September 2006 separates the history of Taiwan from Chinese chronology and sharply increases Taiwan-oriented content to foster Taiwanese identity. We document an unintended "backlash" that individuals studying under the new curriculum are more likely to report both greater Taiwanese and Chinese identities. The finding is most easily reconciled with an endogenous change in information demand: treated high schoolers exhibit greater identity awareness and acquire more information related to both cultural identities, which in turn neutralizes identity stance. We further observe consistent behavioral changes, with milder political axes and an increased likelihood of voting for median candidates and abstention.

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1 Introduction

There is a long tradition of state elites taking education as a tool for nation-building (e.g., Aghion et al., 2019; Bandiera et al., 2019; Alesina, Reich and Riboni, 2020; Alesina, Giuliano and Reich, 2021; Carvalho, Koyama and Williams, 2022). In light of the pervasive efforts to promote patriotism through school curricula – for instance, from Thailand's state-controlled education in the 1900s to Russia's "rewriting history textbooks" agenda since 2020 (Alesina, Giuliano and Reich, 2021; Iashchenko, 2023) – understanding whether it can work (and why or why not) is of both academic and policy relevance.

This paper examines the history curricular reform in Taiwan, a democratic regime in which the majority of its residents are of Han Chinese ethnicity. The coexistence and conflict between Taiwanese and Chinese identities have been an ongoing issue for decades since the political rivalry started between Taiwan and Mainland China (Wachman, 1994; Rigger, 2013), and is deep in the bones of Taiwanese politics. The *de-sinicization* (i.e., elimination of Chinese identity) since 1990 has led to a rapid expansion of Taiwanese nationalism, and the curriculum reform referred to in this study is an intense effort to further eliminate Chinese identity and promote independent Taiwanese nationhood. Specifically, our empirical analysis exploits the regular-track high school history curriculum reform of September 2006 (the *95 Curriculum Reform*), enforced by the *Democratic Progressive Party* (DPP) – the then ruling party fanning Taiwanese nationalism. The new curriculum increases Taiwan-related content sharply and adopts a Taiwan-centric history perspective, whereas in the previous curriculum Taiwan's history was embedded in Chinese chronology.

Although the press usually frames the 95 Curriculum Reform as a useful attempt at nation-building, whether the reform truly successfully fostered nation-building remains conceptually ambiguous. On the one hand, intensive exposure to Taiwan-centric memories seems effective in fostering Taiwanese identity (Cantoni et al., 2017; Fouka and Voth, 2022). On the other hand, high schoolers and their households are not passive recipients of educational content (Bisin and Verdier, 2001; Dessi, 2008; Carvalho, Koyama and Williams, 2022). Sharp changes in his-

¹In the time frame of our study, political parties in Taiwan are ideologically divided into "Blue" and "Green" coalitions, in which the former desires pro-Mainland policies and the latter advocates independent nationhood of Taiwan (Hughes, 2013; Cheng and Swee, 2019). Notably, Taiwan's status plays a critical role in the global balance of power: to the United States, Taiwan is a critical link in its First Island Chain, while to Mainland China, the island is read as an inalienable part of China and acts as a "cork in the bottle" to project its power in the East China Sea (Tucker, 2005; Rigger, 2013).

tory curricula may shift high schoolers' information demand as the reform can likely increase identity salience (DellaVigna and Gentzkow, 2010), and may also shift the transmission effort from other substitute mechanisms for socialization – e.g., oppositional parents invest more in transmitting Chinese identity to their children (Bisin et al., 2011). These endogenous changes in the supply and demand of identity information can lead to moderation or backlash when significant enough.

Underpinning our analysis is an unusually detailed dataset concerning national identity in 2013, including respondent sentiment on historical events, political attitudes, and voting behavior. In particular, we can observe two separate questions eliciting the strength of Taiwanese identity and Chinese identity of an individual, which allows us to move beyond the traditional "feel more X or Y" constraint susceptible to social-desirability bias. Combining both cross-cohort variation (comparing pre- and post-reform school entry cohorts) and *cross-track* variation (comparing respondents who have taken regular-track high school curricula with respondents who have not), we apply a cohort difference-in-differences (DiD) strategy within a narrow cohort bandwidth to identify the causal impact of history education on nation-building (Duflo, 2001). Importantly, the cross-cohort variation we exploit is sharp: individuals entering high school just one year apart faced similar socioeconomic environments during their high school and later life, but studied entirely different 3-year curricula around the 95 Curriculum Reform – when the new curriculum change was implemented, people who were in the second year of high school stayed with the old curriculum and were not treated at all. This feature enables us to compare the adjacent cohorts of students and largely attenuates concerns about omitted variables (e.g., societal shocks to different educational tracks over calendar years). The narrow bandwidth approach comparing cohorts right before and after the reform further alleviates the threat of group-specific compositional changes.

Our main finding is that studying the new history curriculum, instead of exclusively forging Taiwanese identity, leads to an unintended increase in the reported strength of both identities: high schoolers exposed to the new curriculum not only have greater Taiwanese recognition, but also report greater Chinese recognition on average. We corroborate this by examining the recognition of Taiwan-related history memory and China-related history memory. The result is not driven by different interpretations of nationhood, increased general learning, or differential responses by education level. Despite the limited sample size, our baseline estimates feature strong statistical power.² We also present an array of checks to enhance the validity of small-sample analysis: (1) our estimates remain stable for different cohort bandwidth choices and thus are not likely to be driven by outliers, (2) we conduct permutation tests to further attenuate the concern over statistical power and spurious correlations, and (3) we later use two

²Taiwan has only about 20 million population, and a representative adult survey usually consists of 2,000 individuals, with approximately 35 observations for each school year entry cohort. Therefore, limiting the analysis to a narrow cohort window around the reform (like in our paper, or in Roland and Yang (2017) and Chen, Lin and Yang (2023)) may lead to a relatively small sample size, a challenge we address in several ways.

independent surveys with similar attitudinal and voting outcomes of interest to show consistent empirical patterns.

We then examine two potential underlying patterns guided by a framework of endogenous information supply and demand: (1) within the treated individuals, the new curriculum fosters Taiwanese sentiment in one group but induces stronger Chinese sentiment in the other group ("polarizing/substituting"); (2) the new curriculum increases the probability of an individual identifying themselves more as both Taiwanese and Chinese ("co-movement").

We begin by investigating the role of the polarizing pattern, which can be most straightforwardly explained by an increased identity transmission of oppositional parents and cultural groups. First, the heterogeneity analysis by parental ethnicity and ideology suggests that parents' reaction does not play a prominent role in our setting. A potential explanation is that high school adolescents, unlike younger school-age children (e.g., Fouka, 2020), tend to be less receptive to their parents' inputs in cultural transmission. Second, we look at the heterogeneity along the geo-political dimension.³ Notably, students from cities dominated by pro-Chinese ideology exhibit increased Taiwanese identity to a greater extent, and students from pro-Taiwanese cities exhibit increased Chinese identity to a greater extent. This finding suggests that high schoolers may not be highly intolerant of oppositional identities and not be purely passive to external transmission; instead, it promotes the speculation about the endogenous information acquisition by themselves.

We next turn to probe the co-movement pattern, in which the treated students place more weight on aspects they share with both Chinese and Taiwanese. Taken the nature of the curriculum reform and our previous findings into account, this pattern can be most easily reconciled when there exists endogenous information demand of high schoolers. We first establish that the new history curriculum has spurred increased identity consciousness – treated schoolers display a stronger care on the significance of identity-related issues. This confirms that the new curriculum has triggered a persistent preference shift, which, according to persuasion theories, can be accompanied by changes in information acquisition (DellaVigna and Gentzkow, 2010). Consistently, leveraging a survey on media use, we show that treated individuals are more likely to simultaneously consume both pro-Taiwan and pro-China information from the media, and they are more likely to recognize both Taiwanese and Chinese history memory. These combined

³The geo-political difference features two important mechanisms for socialization: the social environment one is raised in (e.g., Bisin et al., 2011), and the implementation of local rules. Conceptually, individuals growing up in pro-mainland counties may possess a weaker Taiwanese identity prior, but these counties are also more likely to oppose the transmission of Taiwanese identity.

⁴Specifically, the new curriculum may make the identity issue more salient and thus trigger an endogenous change in preferences (to be more cautious and perceptive about it), which incentivizes treated students to acquire more related information, in-class and out-of-class, to better identify and socialize themselves (Carvalho, Koyama and Williams, 2022). High schoolers, when not highly intolerant, may therefore end up being better informed of both cultural identities, which alters the likelihood of reporting oneself as both Taiwanese and Chinese.

⁵The corresponding survey outcome is "the attention paid to pro-mainland/pro-independence information posted on media platforms [1, low - 5, high]".

results suggest the endogenous information demand of high schoolers (i.e., self-socialization) as a salient mechanism underpinning the unexpected shift in national identity.

To explicitly investigate which explanation dominates, we construct a binary that captures whether an individual recognizes a strong Taiwanese identity in conjunction with a strong Chinese identity. The co-movement pattern dominates: studying the new history curriculum increases the likelihood of high schoolers identifying themselves more as both Chinese and Taiwanese on average, even if conditioning on the aforementioned parental or geo-political differences. We also adopt a more parsimonious design by aggregating the observations into group-cohort cells and showing that the negative correlation between Taiwanese and Chinese identities has been mitigated following the study of the new curriculum.

These changes bear relevant socioeconomic significance. A testable implication is that, if the reform has induced recognition of both identities and mitigates exclusiveness, then we may observe the political axes of the treated students being more neutral. Across two independent representative surveys, we consistently find that the study of the new curriculum has neutralized the political spectrum: the treated respondents possess relatively moderate attitudes toward Taiwan-Mainland tensions and lower protectionism. Although more suggestive, they are also more likely to be median-style voters who vote for "median" candidates or abstain from voting.

Taken together, nation-building through school curricula may not always be as effective as expected. Our findings thus add to the growing discussion associating education with state-building (e.g., Aghion et al., 2019; Bandiera et al., 2019; Alesina, Reich and Riboni, 2020; Alesina, Giuliano and Reich, 2021; Carvalho, Koyama and Williams, 2022). In particular, we focus on how educational content – a central element of schooling – shapes national identity and political outcomes.⁶ Although the neutralized pattern of backlash may have contextual specificity, our results also hold broader implications given our analysis of mechanisms (elaborated below). There are two related studies which both found an effective impact of curricula on ideology formation. One is the pioneering work by Cantoni et al. (2017), which shows that the socialist politics curriculum in Mainland China has successfully shifted a wide range of elite students' ideology. The other is the concurrent work by Chen, Lin and Yang (2023), which finds the "Knowing Taiwan" education reform in 1997 has successfully increased national identity of

⁶History curricula – the educational content we exploit in this paper – is also of interest, as it has become perhaps the most prevalent instrument for nation-building across states today. See Jones (2011) for cases in Asian regimes, and Ercikan and Seixas (2015) and Hutchins (2016) for Western cases. More recently, the Minister for Education in Ireland mandated all post-primary school students to study history courses since September 2020 in order to "afford young people the chance to learn from chequered history and appreciate how knowledge of the past can shape the future". In Russia, Putin has actively promoted patriotism through the introduction of new curricula that incorporate narratives about the heroes of the 1812 war and the Great Patriotic War, along with accounts of recent acquisitions of Crimea and the port city of Sevastopol.

junior schoolers.⁷

Compared to the work mentioned above, the most important differences are our contrasting findings and the mechanism of information demand that we uncover. First, to our knowledge, we represent one among the first "ineffective" quantitative results of curricular indoctrination. This is of particular relevance as curricula have emerged as one of the most widespread tools for identity building, with anecdotal evidence suggesting mixed effects. Second, the novel data leveraged here is much more detailed when it comes to identity formation and allows us to more extensively explore the mechanisms. Cantoni et al. (2017) find little change in high schoolers' sources for media consumption, but they do not have information on changes in content consumed. In contrast, our results shed light on the mechanism of endogenous information demand among treated schoolers that can counteract the curricular persuasion, in line with preference-based persuasion and cultural transmission models when recipients are not passive (Della Vigna and Gentzkow, 2010; Bisin et al., 2011; Carvalho, Koyama and Williams, 2022). To some extent, the results here may be seen as a potential explanation for the lack of an effect in other settings⁹ – persuasion would not work well when it raises "too much" awareness of the dimension it seeks to affect, and that the state should not assume that the young are naive receivers (Dessi, 2008). In this regard, we also complement the broader empirical work on cultural homogenization, which primarily emphasizes endogenous information supply due to substitute transmission from parents and religious groups (e.g., Aspachs-Bracons et al., 2008; Clots-Figueras and Masella, 2013; Lleras-Muney and Shertzer, 2015; Friedman et al., 2016; Sakalli, 2019; Fouka, 2020; Bazzi, Hilmy and Marx, 2021; Blanc and Kubo, 2021). Lastly, our study also differs by exploring voting behaviors that may potentially influence aggregate political outcomes.

This paper also speaks to the limited but growing economic literature on multiple and oppositional identities (Shayo, 2009; Fryer Jr and Torelli, 2010; Dehdari and Gehring, 2022; Okunogbe, 2023). Our results emphasize the care required in analyzing observational proxies of identity and political views – e.g., reduced support for one's own cultural group may not necessarily indicate an endorsement for other groups; instead, it might feature changes in salience or co-existence. Therefore, it is important for researchers to investigate objective and behavioral changes when studying cultural identities and subjective attitudes (Bond and Lang,

⁷It is worth noting that our replication suggests that the estimated impact of Chen, Lin and Yang (2023) may be sensitive to the choice of the bandwidth and kernel. Specifically, we find that the regression discontinuity estimates flip signs when adopting the optimal bandwidth compared to their preferred specification that uses a wider bandwidth. As a result, the interpretation of the overall lesson may remain open. This is qualitatively consistent with Hughes and Stone (1999)'s observation.

⁸See for example the case of Hong Kong where students mobilized against educational propaganda (https://www.cnn.com/2012/07/30/world/asia/hong-kong-national-education-controversy/index.html)), and the Malaysian case where students have displayed signs of alienation (https://www.malaysiakini.com/letters/443134).

⁹Notably, Cantoni et al. (2017) actually considers an associated question on patriotism: even though the reform has changed a range of other attitudes, there is little impact on the recognition of Chinese patriotism. While national identity seems to be far less of an issue for the Chinese government, it is still the case that building up national identification is one of the goals.

2019). For policymakers, this is relevant to interpreting polling results. ¹⁰ The takeaway is likely to bear implications in other settings, as multiple/ambiguous identities are not unique – for instance, the hybrid identity of Mexican Americans (Keefe, Keefe and Padilla, 1987), the existence of a substantial middle ground between Ukrainian and Russian identities in post-Soviet borderlands (Smith et al., 1998; Wilson, 2002), as well as the rise of identity alienation (Hermans and Dimaggio, 2007). ¹¹

Finally, we contribute to the literature on the role of collective experience in shaping socioe-conomic views and political behavior (Dessi, 2008; Maddens, Billiet and Beerten, 2000; Clingingsmith, Khwaja and Kremer, 2009; Kaplan and Mukand, 2011; Depetris-Chauvin, Durante and Campante, 2020; Zubrzycki and Woźny, 2020; Fouka and Voth, 2022). Instead of treating collective memory as given (Belmonte and Rochlitz, 2019), this paper makes progress by focusing on its manipulation and transmission.

2 Empirical Context

The setting under study is the island of Taiwan, in which there has been a growing trend of Taiwanese nationalism since 1992. The natural experiment we employ is the 95 Regular Senior High School Curriculum Reform ("95 Curriculum Reform"), a senior high school (grades 10–12, regular track) curriculum reform undertaken by the Taiwanese government, effective from September 2006. The reform enforced Taiwanese identity transmission.

2.1 National identity in Taiwan

The majority of Taiwanese residents (more than 95%) are of Han Chinese ethnicity, sharing similar genetic ancestry and language with Mainland Chinese. Yet, the conflict and coexistence between Taiwanese and Chinese identities remains a primary issue in Taiwan.

The primary root of the alienation is the political rivalry between Taiwan and Mainland China following the Chinese Civil War (1946-1949) (Wachman, 1994; Roy, 2005; Rigger, 2013). In 1949, the Communist Party of China gained the upper hand and took over Mainland China, forcing the *Republic of China* (ROC) led by the Chinese *Kuomintang* (KMT) Party to retreat to the island of Taiwan. In October 1949, the *People's Republic of China* (PRC) was founded in Beijing,

¹⁰For example, if the policymaker examines only one survey question (e.g., Taiwanese identity [0-10]) in the data, then it may yield the misleading conclusion that the curriculum is effective in shaping Taiwanese identity.

¹¹According to Wilson (2002), surveys sensitive to dual identities indicated that approximately 27% of Ukrainian citizens identified themselves as both Ukrainian and Russian in the 1990s. Bénabou and Tirole (2011) also note that immigrants and their descendants "who are locally born and have citizenship but often do not feel British, German, or French", yet "neither do they feel Pakistani, Turkish, or Algerian, having little knowledge of the 'old country'". In a recent empirical study, Okunogbe (2023) demonstrates that ethnic identity and national identity need not be mutually exclusive in Nigeria, and can in fact thrive together.

¹²While Taiwanese society and Mainland Chinese society share some cultural traits in common, Taiwan was a dependency of Japan between 1895 and 1945 and thus features different political and economic institutions compared to Mainland China (Manthorpe, 2016).

marking the start of the long-lasting political and military standoff (Lew and Leung, 2013).

Before the 1990s, Taiwan was effectively a one-party regime under the governance of the KMT, which still cultivated Chinese identity because it intended to eventually retake control of the mainland. However, the United Nations expelled the ROC and transferred China's seat to the PRC in 1971, with more states starting to accept Beijing's regime as the sole legitimate Chinese government. The diplomatic dilemma and authoritarianism triggered the democratization of Taiwan in the late 1970s, which finally transformed Taiwan into a multiparty democracy in the early 1990s. Along with the advent of democratization, the political status of Taiwan gradually resurfaced as a contentious issue. The pursuit of the "restraining Beijing by supporting Taiwan" strategy led by the United States and Japan has further aggravated the cross-strait tension (Tucker, 2005).

The internal and external factors together triggered the meteoric rise of Taiwanese nationalism and *de-sinicization* (Hao, 2010, Chapter 3). In 2000, the *Democratic Progressive Party* (DPP) won the presidency, marking the polarization of political winds in Taiwan. The DPP advocates an independent nationhood of Taiwan and has promoted a series of policies to erase Chinese identity. Subsequently, education authorities under the DPP have revised curricula for primary and secondary schools to instill Taiwan-centric ideology, gradually separating the history of Taiwan from the Chinese chronology (Liu, Hung and Vickers, 2013). By contrast, the mainland government insists on "sovereignty and territorial integrity", recognizing Taiwan as a province of China. Taiwan's nationhood status and future trajectory (unification with the mainland vs. declaring independence) thus shape the political complexity of Taiwanese society. These empirical patterns are in line with the insight of Alesina, Giuliano and Reich (2021) that rulers tend to take advantage of nationalist education in response to potential threats. To this day, the issue of national identity is still central to the political spectrum in Taiwan, closely associated with Taiwan's party politics and electoral outcomes (Nai-Teh, 2015).

Figure A1 depicts the aggregate trend of national identity in Taiwan from 1992 to 2010 based on three coarse categories (Chinese, Taiwanese, and both). Along with the democratic movement and *de-sinicization*, the share of individuals who recognize themselves as pure Taiwanese has increased, accompanied by a gradual decrease in pure Chinese identity. Nonetheless, approximately 40% individuals still hold a dual or ambiguous identity, identifying themselves as both Taiwanese and Chinese. It is worth noting that, as the poll does not provide descriptive statistics by educational tracks and school entry cohorts, the figure here does not correspond to our identification and cohorts under study; instead, it helps us better understand the broad societal climate leading to the reform. The *95 Curriculum Reform* in 2006 can be seen as an intense effort to eliminate Chinese recognition and further foster pure Taiwanese identity (Chen, 2008).

¹³Data source: aggregate statistics released by the Election Study Center, National Chengchi University of Taiwan (ESC, NCUT).

2.2 The "95 history curriculum reform"

Education in Taiwan. The education system in Taiwan mandates all students to complete nine years of compulsory education, comprising 6-year primary school and 3-year junior high school education. After graduating from junior high school at around 15 years old, students can choose either to attend senior high school or enter the labor market directly. While the majority of students (95%) continue their education in senior high school, there are two tracks available: regular and vocational. About 54% of students who choose to attend senior high school opt for the regular track, which is focused on preparing students for the college entrance exam after 3 years of study. Accordingly, the study in regular-track high school is *de facto* exam-oriented. An alternative is the vocational track, which lays more emphasis on equipping students with specific professions. Both tracks have the option to continue on to tertiary education. Appendix C provides a visualization of the education system in Taiwan.

The 95 Curriculum Reform. History is one of the compulsory subjects for all Taiwanese high schoolers. The history curriculum for regular track students is more comprehensive than that for the vocational track ¹⁶, with history being a mandatory subject to be tested in the academic college entrance exam. The content in the history curriculum serves as a crucial channel for Taiwanese students to form their self-concepts (Liu, Hung and Vickers, 2013). In 2004, Chen Shui-bian from the DPP won the presidency and initiated the controversial high school curriculum reform to instill Taiwan-centric ideology. While other subjects have undergone little change, the history curriculum has been sharply restructured. An explicit goal of the new curriculum is to "help students understand their Taiwanese roots and establish self-identity," which is absent in the previous curriculum's guidelines. The first draft of the new history curriculum was made public in 2003. However, due to the heated debates by historians, it did not come into effect until 2006.

The final version of the curriculum guideline is entitled the 95th History Curriculum Guideline for Regular Senior High School (the "95 curriculum"), ¹⁷ in which the history of Taiwan is, for the first time, introduced separately from Chinese history and regarded as the innermost core. In the old history curriculum (the "88 curriculum"), the first-year sequence covers the history of China, containing four chapters regarding Taiwanese history; and the second-year sequence focuses on topics in global history. This structure has been completely reshuffled in the 95 curriculum, with the first semester in Year 1 dedicated solely to Taiwanese history and the second to Chinese history. Meanwhile, the new curriculum adopts a Taiwan-centric history perspective,

¹⁴See https://english.moe.gov.tw/cp-126-17722-3fb83-1.html (from the Ministry of Education).

¹⁵Source: authors' calculation based on the statistics up to the academic year 2006. See https://stats.moe.gov.tw/files/analysis/99_all_level.pdf for the official report (in Traditional Chinese). The share of academic track high schoolers remains largely stable (51.5%-54%) during our sample period (as of 2009).

¹⁶Vocational-track students usually take history courses for one academic year, using a simplified version of the textbook.

 $^{^{17}}$ The "95th" here refers to the 95th year in the Taiwanese calendar, which corresponds to 2006 A.D..

putting explicit emphasis on Taiwanese roots to promote Taiwanese identity (Chiang, 2009).

Importantly, although students in the vocational track are also required to take history courses, the significant change in the history curriculum only targeted regular track students. The structure of the vocational track curriculum was still identical to the previous 88 curriculum. Meanwhile, there is no cohort-track-specific reform in college education during that period. Finally, of particular relevance to our identification, the enforcement of the new curriculum is "sharp" instead of "gradual": students entering high school one year apart around the reform studied entirely different 3-year curricula.

2.3 Changes in history curricula

Qualitative evidence. To identify changes in the history curriculum content that are designed to indoctrinate Taiwanese memory, we first conduct a comprehensive comparison between the "95 curriculum" and the old "88 curriculum". The major changes lie in the first-year content, which comprises the history of Taiwan and Mainland China.

First, the 95 curriculum separates the history of Taiwan from China, increasing the Taiwan-related content (and the transmission of Taiwanese identity) significantly. In the old 88 curriculum, content related to Taiwan is scattered in four chapters from *National History*, the first volume of textbooks with a total of nineteen chapters.²⁰ According to the 88 curriculum, the first volume is used in the first two semesters in which students have 2-hours of lectures per week. Thus, Taiwan-related material took up less than half a semester before the reform. In contrast, the 95 curriculum views Taiwanese and Chinese history as distinct topics, emphasizing a Taiwan-centric history perspective. Under the design of the 95 curriculum, history courses in the first semester solely consist of the history of Taiwan, with 2 hours of lectures per week. The history of Mainland China is no longer regarded as a part of the *National History* but is entitled *History of China* and taught in the second semester. Consequently, Taiwan-related memory has doubled in the new curriculum, covering various topics ranging from the local history to the social development of Taiwan. The material regarding the history of China has been condensed to be intensively taught within one semester, as a detached foreign history.

Second, the construction of self-identity is emphasized in the pedagogical objectives of the 95 curriculum. While both curricula aim to "inspire the interest in history" and lead students to "embrace a multi-cultural community", the 95 curriculum places additional emphasis on helping students "grasp their Taiwanese roots and build self-identity" (Chiang, 2009; Lin, 2005). To

 $^{^{18}}$ The update of the vocational track history curriculum lagged far behind the regular track's, and it did not adopt a Taiwan-centric history perspective until the academic year 2011.

¹⁹Major educational reforms target at the 95 high school cohort (i.e., the 98 college cohort) can be found from the *Educational Statistics Yearbook of Taiwan* (Page 203 - Page 214): https://stats.moe.gov.tw/files/ebook/Education_Statistics/99/99edu.pdf.

²⁰The headlines of the four Taiwan-related chapters (out of nineteen) in the old curriculum are "Development of early Taiwan", "Province building and ceding of Taiwan", "Establishment of Taiwan experience" and "Changes in Taiwan society".

eliminate Chinese identity, all material is presented based on a Taiwan-centric history perspective, in which the history of Taiwan is treated as "the innermost circle, enclosed in the circle of Chinese history, which is further enclosed in the circle of world history" (Tu, 2004).

In addition, explicit references to national identity are eliminated in the new curriculum. Under the old 88 curriculum, the textbooks refer to the history of imperial and modern China as *Wo-guo* ("domestic/our nation's"); whereas the 95 curriculum extensively uses "China" and "Chinese" when introducing the corresponding historical events and treats them as foreign episodes.

Quantitative evidence. We also conduct a quantitative analysis to compare the old and new history curricula. To frame our analysis, we examine changes in textbooks' content based on two broad categories: Taiwan-related memory and China-related memory. In accordance with the 95 curriculum, we define five subcategories for Taiwan-related memory: institutions (democracy and economy), society, technology, culture, territory and historical memories. With regard to China-related memory, we define three subcategories in accordance with the chronology: prehistory and ancient China, imperial China, and modern China. We count the number of related subsections in each category in the old and new textbooks, respectively. The statistical results are presented in Table B1, in which the percentage change of each category across curricula is also calculated. The Taiwan-related content has been significantly increased in the new textbooks (Panel A of Table B1). In particular, the content concerning political and economic institutions, as well as the historical territory of Taiwan has increased dramatically. The only exception is the number of topics on the evolution of Taiwanese society, which remains largely unchanged.

In contrast, we see little change in the count of China-related topics (Panel B of Table B1). The material on Chinese history has been compressed into one textbook, with some topics in ancient and imperial China being moderately condensed. The length of material regarding modern China, which contains several Mainland–Taiwan shared historical moments, remains mostly unchanged. However, Mainland China is read as a separate "country" in the new curriculum: compared with the 35 counts in the old textbooks, the explicitly designated expression "our nation" only appears twice in the new textbooks to describe Taiwan.

In sum, the quantitative analysis confirms the qualitative observation that the new curriculum is an intense effort to eliminate Chinese recognition and foster Taiwanese identity, in which Taiwan-related content and the transmission of Taiwanese ideology have become dramatically more prevalent.

²¹The "subsection" refers to the fourth structural subdivision of a textbook. For instance: "Part IV - Subversion of Qing Dynasty, Unit II - Reform and Revolution, Section I- Xinhai Revolution, Subsection I - Sun Yat-sen and 'Revive China Society'."

3 Data and Empirical Strategy

3.1 Data and measures

<u>Data source.</u> Our main analyses use two sets of representative surveys: the Taiwan Social Change Survey - National Identity (TSCS 2013), and the China Impact Studies (CIS) from 2012 to 2016 (pooled cross-section). The CIS did not conduct its survey in 2014. The sample size of each wave is approximately 2,100 to 2,500 individuals. Both the TSCS and the CIS are conducted by the Institute of Sociology, National Academy of Taiwan, with independent samples managed by different research groups.

The TSCS (2013) is specially designed for topics on national identity. Different from other waves, it contains an extraordinarily rich set of questions concerning national identity, including the respondent's sentiment toward historical events and political attitudes. Importantly, it elicits the strength of each national identity on a 0-10 scale, allowing us to observe both Taiwanese and Chinese identities within an individual. To examine the impact on electoral outcomes, we also pool multiple waves (2012-2016) of the TSCS survey. The CIS data covers attitudes toward Mainland China, political axes, and electoral behavior. We can thus utilize the pooled CIS data (2012-2016) to corroborate our findings and attenuate small sample issues to some extent. Both surveys provide detailed demographic information that allows us to identify the birth cohort and the education track of each respondent, by which we can determine the curriculum one was exposed to.

We also use the Taiwan Education Panel Survey (TEPS) and the Taiwan Communication Survey (TCS) for additional analyses. The data are described as they become relevant later.

School entry year cohorts. Taiwanese are strictly required to enroll in primary schools at the age of 6, and the school year in Taiwan starts in September.²² After completing the nine-year compulsory education (6 years in elementary school, 3 years in middle school), one is eligible to attend senior high school. In this paper, we classify individuals according to the school year cohort based on their birth dates. For instance, students who entered senior high school in September 2006 were generally born between September 2, 1990 and September 1, 1991 and we define them as the "2006 school year cohort". Specifically, the 2006 cohort in regular track senior high school is the first cohort exposed to the new curriculum (as the 95 curriculum was rolled out in September 2006).²³

Education tracks (treatment and control groups). Both surveys record the detailed ed-

 $^{^{22}}$ See the *Primary and Junior High School Act* (1979) and the *Compulsory Education Act* (1982) by the Minister of Education in Taiwan.

²³In the TSCS and the TEPS, the date of birth (year-month) is available, so we can clearly distinguish the school year cohort each respondent belongs to and determine whether one has taken the new curriculum. In the CIS and TCS, we can only observe one's birth year, so we exclude the observations of those born in 1990 (individuals born between January to August belong to the 2005 school year cohort, yet those born in or after September are in the 2006 school year cohort).

ucational attainment of respondents. Exploiting the nature of the college entrance exam and application in Taiwan, we assign individuals with a regular-track senior high school degree or college degree (regular university) to the treatment group, of which the post-2006 academic cohorts studied the new history curriculum. We exclude individuals holding master's or doctoral degrees since we can not determine which tracks they studied in senior high schools (only 0.68% in our baseline sample).

Grade repetition and track switching are uncommon in Taiwan. A valid concern here is that some vocational-track students may apply to regular universities while some regular-track students choose to enter polytechnic colleges. Nevertheless, before 2011, vocational-track students were required to take the college entrance exam (the same as that of the regular track) if they wanted to apply to a regular university, and history is mandated in the test. As a result, they retook the regular-track history curriculum to prepare for the test. This institutional feature indicates that all students entering regular universities before 2011 were treated. Meanwhile, regular-track students who intend to apply for polytechnic colleges are required to take a gap year to take the *Unified Polytechnic College Entrance Test*. In this scenario, there may be spillover effects that drive the DiD estimates toward zero. The TSCS (2013) provides the respondent's years of schooling, which enables us to test the robustness by excluding high schoolers with more than 16 years of schooling experience.

Measuring national identity, collective memory, and consciousness. Taiwanese and Chinese identities are the key outcomes of interest. The TSCS (2013) includes two separate questions eliciting the strength of Taiwanese identity and Chinese identity respectively: "Please rate the degree of yourself as Taiwanese (Chinese) on a scale from 0 to 10, where 0 means 'not at all' and 10 means 'absolutely'." Given the standard Likert scale design, we directly use the numbers reported as our main outcome variables.

To complement the usage of ordinal measures, we further utilize a set of binary outcomes directly associated with national memory. The TSCS (2013) elicits the sentiment toward four historical memories: "Do you think the following historical events are important and should be recognized by the next generation? (a) The 228 Incident; (b) The Formosa incident (Tangwai democratic movements); (c) The end of Qing dynasty and the creation of new China; (d) The victory of the Second Sino-Japanese War." The former two events are Taiwan-oriented collective memories, and the latter two are China-oriented collective memories.²⁵

In addition, we are able to investigate one's identity consciousness (preferences regarding

²⁴Moreover, this circumstance is rare: the authority provided only 2859 vocational-track students with the opportunity to participate in the test in 2011, which accounts for only 2.6% of the vocational-track graduates.

²⁵The TSCS and the CIS follow the traditional approach of conducting surveys in Taiwan: when the answering of a question allows for several choices allowing the varying strength of agreement, the interviewer will first elicit a binary attitude of the respondent (positive/negative). In addition, the interviewer reads the question instead of showing the questionnaire to the respondent in TSCS and CIS. These features enable the use of binary dependent variables, alleviating the concern over the usage of subjective ordinal measures (Bond and Lang, 2019).

national identity issues) by taking advantage of the following question in the TSCS (2013): "Do you find national identity to be an important issue or not?"

Measuring political ideology. Attitudes toward Mainland China are important ramifications of national identity in Taiwan, which further shape the support for pro- and anti-Mainland policies. We exploit the following survey questions by constructing a binary that is 1 for agreement and 0. Similar questions might be visited in both surveys, so we include all of them in our analysis for robustness.

First, both the TSCS and the CIS contain a pair of questions to examine attitudes towards Taiwan's nationhood: "(1) Do you agree with the viewpoint that if the socioeconomic and political development in Mainland China is more or less the same as Taiwan, there should be a cross-strait unification? (2) Do you agree with the viewpoint that if it would not lead to wars, we should declare the independent nationhood of the Taiwan island?"²⁶

Second, we investigate how the study of the new history curriculum shifts students' protectionism – their attitudes toward economic cooperation between Taiwan and Mainland China. In the TSCS, the survey question is: "Now more and more Taiwanese work or invest in Mainland China. Do you think this benefits the development of Taiwan?" In the CIS, the survey question is: "Do you agree that the government should encourage economic cooperation with Mainland China?"

<u>Measuring voting behavior.</u> Finally, we examine whether ideological changes translate into voting behavior. The outcome variables are detailed as they become relevant later.

3.2 Empirical strategy

We estimate a standard cohort difference-in-differences (DiD) to examine the impact of the history curriculum reform.

<u>Cohort difference-in-differences</u>. The first dimension of the difference is from whether an individual has taken the regular-track curriculum. As noted, the treatment group consists of individuals who have received regular-track senior high school education, and the control group contains those who have not. The *95 Curriculum Reform* implemented in September 2006 – which only affected regular track participants – generates the second dimension of variation over cohorts. Thus, we are able to trace out the common cohort trend and compare cohorts born just before September 1990 (pre-reform school year cohorts) who missed out the new curriculum, with those born just in and after September 1990 who have taken the new curriculum.

One might be concerned about socioeconomic shocks, media, and political climates that may differentially affect different tracks or education groups over time. It is worth noting that

²⁶This set of questions is widely used by Taiwanese scholars. Earlier surveys in Taiwan directly elicit unconditional preferences from a set of choices (usually consisting of "immediate independence/status quo and independence in the future/status quo forever/status quo and unification in the future/immediate unification"); however, respondents tend to be cautious toward this "non-inclusive" question and are likely to falsify by giving ambiguous responses.

we exploit $Track \times Cohort$ variation rather than $Track \times Year$ variation, meaning that a factor should differentially affect high school entry cohorts within a track to threaten the identification. As noted, the cross-cohort variation we exploit is sharp, as individuals entering high school just one year apart studied entirely different 3-year curricula around the reform, and most time-varying track-specific shocks are unlikely to have sharply different effects across adjacent cohorts of students (Cantoni et al., 2017). That is, a confounding shock would need to have a sharp impact only on regular-track students who entered high school in 2006 (staying from 2006 to 2009), without affecting those who entered in 2005 (staying from 2005 to 2008). We later allow track-specific trends to capture smooth changes in identity across cohorts, and provide additional evidence that our results are not likely to be driven by the heterogeneity of education tracks.

Narrow cohort bandwidth. Moreover, we estimate our model in a narrow cohort bandwidth. The relatively stable socioeconomic environment within a short time window mitigates the presence of potential confounders that may simultaneously correlate with outcome variables and post-reform cohorts. Using a narrow window also alleviates the concern over the group-specific compositional change of demographic characteristics among cohorts (e.g., Roland and Yang, 2017). In our baseline specification, we employ a 10-academic-year bandwidth ([-6,+4] cohorts around the reform time) to obtain a balanced number of estimates in event study plots.²⁷ We later show that the results are robust to the choice of cohort bandwidth.

Specifically, we estimate the following standard cohort DiD:

$$y_i = \beta \times Treat_s \times Post_c + x_i'\theta + \lambda_s + \tau_c + \varepsilon_i \tag{1}$$

where y_i is the dependent variable (i indexes the individual, s the education track, and c the school entry year cohort); λ_s and τ_c are full sets of education track and cohort fixed effects. 28 $Treat_s$ is a dummy that is 1 if the respondent with educational attainment s has taken the regular-track high school; $Post_c$ is a dummy that is 1 for the cohorts entering high school in and after September 2006 when the new history curriculum was implemented. x_i' is a vector of demographic controls, including gender, parental ethnicity (birthplace) fixed effects, and hometown city fixed effects. We allow idiosyncratic errors, ε_i , to be correlated across individuals within the education track level or the $Treat \times Cohort$ level to show robustness.

Notably, our setting essentially features only two different clusters – the treatment group

 $^{^{27}}$ We could at most extend the bandwidth up to the 2010 cohort (+5), because vocational high schoolers have been able to apply to regular universities without taking an exam in history since the 2011 academic year. Nevertheless, the most recent cohort in the TSCS is the 2009 one (+4 cohort), suggesting this issue may not threaten our identification.

²⁸The education fixed effects here include: primary school, junior high school, regular-track senior high school, vocational-track senior high school, junior college, open (remote) junior college, police academy, polytechnic college, and regular university. Table B2 shows that the reform does not alter the likelihood of continuing through tertiary education, suggesting that these tracks are not potential outcomes of the reform. All results remain robust if we simply control the *Treat* dummy instead of the education track fixed effects.

and control group; therefore, we also use Donald-Lang two-step procedure and Newey-West method to correct the standard error (Donald and Lang, 2007; Newey and West, 1987).²⁹ Finally, as our specification includes fixed effects, we use OLS as our base estimation method; Order Probit will be used to test robustness (Neyman and Scott, 1948).

3.3 Descriptive statistics and balance checks

Table 1 provides summary statistics for the demographic characteristics. We have 327 observations within the 10-cohort band in the TSCS (2013): 175 pre-reform respondents, among which 72 have received regular-track high school education; 152 post-reform respondents, among which 59 are exposed to the 95 curriculum. In the CIS pooled sample, we have 449 observations: 316 pre-reform and 133 post-reform respondents. The reason for a larger proportion of pre-reform observations in the CIS data is that there are fewer post-reform cohorts in the earlier waves, as the minimum age of respondents in the CIS sample is 20 instead of 18, and we pool the 2012 - 2016 waves. Therefore, some summary statistics may be slightly different across the two surveys. The sample size of each survey is not large – given that Taiwan's population is only about 20 million, representative adult surveys usually consist of 2,000 individuals, and our analysis limit the number of cohorts; although, if we find significant and robust effects across different datasets, this should indicate the considerable impact of the 95 *Curriculum Reform*.

[Table 1 here]

Next, we examine the demographic composition around the curriculum reform. Each panel presents the average demographic characteristics of respondents in each sample, with standard deviations in parentheses. The differences in the mean between the regular-track and non-regular-track respondents are reported in Columns (4) and (7), and the P-values testing whether the difference is indistinguishable from zero are reported in brackets. The TSCS (2013) contains richer demographic information than the CIS. In terms of birthplace, more than 90% of the respondents were born in Taiwan; in addition, around 96% of their either parents originate in Taiwan, implying that there is little variation in ethnic or parental background in the Taiwanese setting.

Finally, we check whether these observable characteristics differ at the $Post \times Treat$ level – the major source of threats to our identification. Column (8) of each panel shows the mean dif-

 $^{^{29}}$ Donald and Lang (2007) proposes a simple two-step procedure to correct the standard errors in the presence of the Moulton problem with a small number of clusters (e.g., canonical 2×2 DiD). We further use the Newey-West method to allow for correlated shocks to the disturbance term to have persistence over 3 cohorts (e.g., Bedard and Kuhn, 2015; Stearns, 2015; Gehrsitz, Saffer and Grossman, 2021) (using other lag-specifications yield very similar results). In the first step, we aggregate individuals into group (treatment and control) averages and then difference the data across the two groups to obtain a single time series, or use regressions on full samples to obtain conditional differences. In the second step, we regress the difference on an indicator for the post-reform cohort and adopt the Newey-West method to account for serial correlation. Of course, we are aware that the number of cohorts is on the short side for the Newey-West asymptotics; nevertheless, the bottom line is to show the robustness to different ways of adjusting the standard errors.

ference between the regular-track and non-regular-track individuals, across the cohorts before and after the new history curriculum. The P-values testing whether the DiD is indistinguishable from zero are reported in brackets. In Column (9), we also report the conditional DiD estimate using the same set of fixed effects as the one used in our main specification (with educational track and cohort fixed effects). From both survey samples, there is a fairly strong balance, suggesting the absence of discernable compositional changes in these observable characteristics.

4 History Curriculum and National Identity

Figure 1 visualizes the average Taiwanese identity and Chinese identity (observed in 2013) across school entry cohorts. First, we observe a general decline in reported Chinese identity over cohorts in both groups, which is consistent with the *de-sinicization* trend in Taiwanese society noted earlier.³⁰ Second, before the introduction of the 95 history curriculum, the control group exhibits higher Taiwanese identity on average. This pattern echoes political studies documenting that more-educated individuals tend to be less patriotic and more cautious towards nationalism (e.g., Huddy and Khatib, 2007; Theiss-Morse, 2009). Third, the relative jump in identity across adjacent school entry cohorts before/after the reform is sharp, buttressing the relevance of the curriculum change, as opposed to track-year gradual changes.

It should come as no surprise that the Taiwanese identity gap mitigates following the 95 *Curriculum Reform*. However, while the untreated group continues to follow the downward trend after the reform, we observe a discernable rebound in the strength of the Chinese identity of individuals who have taken the new curriculum, which is at odds with the intention of policymakers.

[Figure 1 here]

4.1 Baseline results

To move beyond the descriptive evidence, we first estimate the average impact of the 95 Curriculum Reform on Taiwanese identity and Chinese identity separately as specified in Equation (1).

Table 2 reports the OLS results. The dependent variable is self-perceived national identity ranging from 0 (not at all) to 10 (absolutely). Columns (1) and (4) report the standard two-way fixed effect estimates. The cohort fixed effects absorb all unobserved temporal shocks to individuals in a certain cohort, and the education track fixed effects hold constant the time-invariant heterogeneity among different tracks. The estimates indicate that the 95 history curriculum substantially enhances the strength of both Taiwanese identity and Chinese identity. On average,

³⁰Specifically, the observed pattern across cohorts is consistent with that younger cohorts were exposed to rising *de-sinicization* (the elimination of Chinese identity and emphasis on Taiwanese roots) to a greater extent during their formative and impressionable years (e.g., Krosnick and Alwin, 1989; Acemoglu et al., 2021).

the new curriculum is associated with a 0.47 (0.39) standard deviation increase in Taiwanese (Chinese) identity.

[Table 2 here]

We conduct several robustness checks to corroborate our main findings.

Compositional changes in demographic characteristics. One threat to the cohort DiD strategy is the presence of time-varying group-specific compositional changes in respondent characteristics that are also correlated with identity formation. First, as Table 1 shows, within a narrow band of cohorts, we see little within-group demographic changes around the reform. Second, in Columns (2) and (4) of Table 2, we further introduce a rich set of predetermined demographic controls, including gender, parental ethnicity fixed effects, 31 and hometown city fixed effects. The magnitudes of DiD estimates remain largely comparable. Furthermore, in Table B3, we allow the impact of receiving regular-track education to vary with observable individual characteristics ($Treat \times Controls$) and the impact of individual characteristics to vary before/after the reform cohort ($Post \times Controls$). These combined results suggest that the impact on national identity is unlikely to be driven by compositional changes in demographic features.

<u>Parallel trends.</u> The key identification threat is the violation of the common trend assumption. Although it cannot be observed, we provide two pieces of evidence to alleviate this concern. First, Columns (3) and (6) of <u>Table 2</u> add group-specific trends to allow for a differential linear cohort trend in each track. In the spirit of <u>Kahn-Lang and Lang (2020)</u>, we only use prereform observations to estimate group-specific (treatment/control) trends; we then de-trend the dependent variable around the estimated linear trend by groups to obtain the "detrended" outcome and repeat the regression as before. The identification then comes from whether the new curriculum leads to deviations from pre-existing group-specific trends. The inclusion of smooth time trends does not alter the positive identity gaps and even yields slightly larger point estimates. Second, <u>Figure 2</u> presents the event study using various specifications. The gap is estimated based on Equation (1) but allowing the difference to vary with biennial cohort bins. We see significant jumps in the strength of each identity when moving from the last two cohorts using the old curriculum to the cohorts that studied the new one. Meanwhile, there is no differential pre-trend before the reform.

[Figure 2 here]

<u>Education-related confounders.</u> As with Cantoni et al. (2017), our identification strategy exploits the sharpness of the reform across school entry cohorts rather than a gradual change over the calendar year. Therefore, track-year varying shocks would not necessarily confound.

³¹Parental ethnicity fixed effects include a set of dummies for Taiwanese (native), Mainland Chinese, Kinmen and Matsu residents, and others (separately for father and mother).

We present three pieces of quantitative evidence. First, as shown in Table B2, the curricular reform has no discernable impact on students' final educational attainment. Second, Table B4 presents direct evidence that our estimated effects remain robust when considering differential impacts on education level. Further controlling for the interaction between *Post* and total years of education also maintains robust results. Third, as noted above, allowing each track to have its own smooth trend over cohorts does not quantitatively alter the estimates. These results suggest that increased education premium and differential responses by education groups to broader socioeconomic/political shocks are unlikely to threaten our findings.

<u>Sample selection and permutation tests.</u> To examine whether the results are sensitive to the selection of sample bandwidth, we use different numbers of cohorts to re-estimate the model. Figure A2 shows that the results are robust to varying bandwidths, implying that what we observe is not a result of an outlier cohort.

To enhance statistical power and examine whether our results are driven by spurious correlations, we further conduct random permutation tests (Figure A3). Specifically, we randomly permute the DiD term and re-estimate the equation using the randomly assigned DiD term, with 1,000 iterations for each outcome variable. Comparing the distribution of the permuted coefficients to the main results, we find that the likelihood of the original estimate being a result of coincidence is nearly zero for Taiwanese identity and less than 1.4% for Chinese identity.

Finally, as noted, regular-track students (assigned into the treatment group) who intend to apply to polytechnic colleges (assigned into the control group in our baseline identification) are required to take a gap year. Table B5 takes this potential spillover into account by excluding observations with abnormal years of schooling and finds the estimated coefficients remain virtually unchanged. In addition, we also restrict our samples to those who were still attending college during the survey time – so there is no differential labor market trajectory – and we still obtain similar results.

Alternative estimation: Ordered Probit. To account for the ordinal nature of the outcome variables (Bertrand and Mullainathan, 2001; Bond and Lang, 2019), we also show our results are robust to the Order Probit estimation in Table B6.

Alternative measures: salience of collective memory. A distinct advantage of our data is that it enables us to explicitly examine individuals' attitudes toward historical memory. Each dependent variable is a binary that is 1 if the respondent reads the event as "important and memorable", and 0 otherwise. We categorize the four historical events listed in the TSCS into two types: Taiwan-oriented historical memory (the 228 Incident and the Formosa Democratic Movement), and China-oriented historical memory (the foundation of the Republic of China and the Second Sino-Japanese War). Appendix D provides a detailed description of these historical events and that how they are presented in the old and new curricula. The first four rows in Figure 3 show that studying under the 95 curriculum has significantly enhanced both Taiwan-oriented

and China-oriented collective memory, adding about 11 percentage points (0.33 standard deviation) to the average probability of recognizing each historical event. The sharpened q-values are reported in brackets to account for multiple hypothesis testing (Anderson, 2008).

Notably, the magnitudes of increased recognition of Taiwanese memory are highly compatible with the curricular changes: the content related to the *Formosa Movement* has been markedly increased in the 95 curriculum, whereas the 228 *Incident* has been already presented in detail in the old curriculum.³² These findings on collective memory are consistent with our baseline results adopting ordinal identity measures and confirm the relevance of history textbook content.

[Figure 3 here]

Alternative explanation: increased general learning. Another possible interpretation is that the reform simply increased general learning in history, including information on Taiwan and Mainland China. We test this by exploring the impact on Asian recognition – a placebo outcome that is unrelated to Taiwanese vs. Chinese recognition (but also presented in the textbooks).³³ The seventh row in Figure 3 shows that there is no significant impact on one's recognition of Asian roots.

Alternative explanation: interpretation of Chinese identity. Finally, a special concern in our context is how respondents read the term "Chinese identity". If one reads "China" as the "Republic of China" and does not regard the mainland as a part of it, then Chinese identity and Taiwanese identity simply overlap with each other. To eliminate this possibility, Table B3 further controls the "interpretation fixed effects" based on whether one recognizes the mainland regime as a part of "China" (yes/no/ambiguous). Both the point estimates and statistical significance remain virtually unchanged.

4.2 Understanding the mechanism

Thus far, we have established a robust positive association between the reported strength of each identity and the study of the 95 history curriculum. To better understand the mechanism, we explore heterogeneity and additional outcomes along several dimensions. To better guide the empirical analysis, we begin with a conceptual discussion, in which the unintended impact of curricular persuasion can be attributed to endogenous changes in supply and/or demand for

³²In fact, though unintended, the relative magnitudes of increased recognition of Chinese memory are also highly consistent with the textbook changes, as the two events are presented similarly in the old and new curricula (apart from the Taiwan-centric view in the new curriculum; see Appendix D for details). Of course, given that the new curriculum indoctrinates Taiwanese identity and treats the history of China as a marginal and detached body, the average increase in Chinese recognition motivates our analyses below to probe the underlying mechanism.

³³The history of Asia is presented in the third volume of the textbooks in both the old and new curricula with little change. The corresponding survey question is "How close do you feel to Asia [as an emotional recognition of its history and culture]?" Similar to the construction of other measures, we create a dummy that is 1 for a positive response ("close"/"very close") and 0 otherwise. The survey also contains a similar question on the sentiment toward one's city of residency, and the estimate is also close to zero if we use it as an additional placebo outcome.

identity-related information. The high schoolers may take curricular content and other identity-related information together to form their national identity.

1. Polarization (substitution). A canonical explanation is that, within the cohorts exposed to the new curriculum, the transmission fosters Taiwanese sentiment in one group but induces stronger Chinese sentiment in the other group. According to cultural economic models, when oppositional types are extremely intolerant, assimilation policies may lead to backlash and aggravate the existing distance between social groups, in which oppositional types resist indoctrination by the policymaker and actively maintain their pre-existing cultural identity (e.g., Bisin et al., 2011; Fouka, 2020; Carvalho, Koyama and Williams, 2022). This can stem from changes in either the supply or demand of identity-related information. On the supply side, oppositional households and groups may increase their transmission of pro-Chinese information to override, while students can be passive recipients. On the demand side, intolerant pro-Chinese students may actively seek out alternative forms of socialization, such as consuming media and joining online groups formed around pro-Chinese ideologies.

In the context of Taiwan, this pattern may likely arise from parent reaction and geo-political differences. Empirically, when this mechanism dominates, it predicts an increased Chinese identity and decreased Taiwanese identity of students from *ex-ante* pro-Chinese households/regions, compared to that from *ex-ante* pro-Taiwanese households/regions. Student information acquisition may or may not change, depending on whether they are passive recipients or not.

2. <u>Co-movement.</u> Another pattern is that the new curriculum increases the probability of an individual identifying themselves more as both Taiwanese and Chinese. This pattern can most straightforwardly be reconciled with the endogeneity of receivers' information demand when there is no strong cultural intolerance.

Specifically, the new curriculum emphasizing national identity can make the identity issue more salient and thus alters identity consciousness – the treated students perceive greater importance of their cultural identity and thus be more cautious and perceptive about it. To better identify themselves, high schoolers may therefore devote more attention, both intentionally and unconsciously, to identity-related content and increase consumption of related information in class and out of class (DellaVigna and Gentzkow, 2010).³⁴ In this way, tolerant high schoolers may be better informed of the salience of both identities and different narratives, leading to more weights on aspects that share with other Taiwanese and aspects they share with other Chinese. Apart from the recent economic work (e.g.,

³⁴A canonical underlying rationalization for increased information acquisition is that decision-makers tend to reduce the uncertainty associated with things they care. Besides, the recent behavioral literature also suggests the importance of salience in shaping attention involuntarily – Bordalo, Gennaioli and Shleifer (2022) provides an excellent demonstration on this point: "after discussing whether families are having fewer children, we notice many babies on the street."

Shayo, 2009; Dehdari and Gehring, 2022; Okunogbe, 2023), literature in identity politics and social psychology also provides additional rationalization that multiple identities of an individual can play crucial roles in nation-building (Giroux, 1992; Maddens, Billiet and Beerten, 2000; Stelzl and Seligman, 2009; Korostelina and Lässig, 2013; Fukuyama, 2018).

Empirically, this mechanism predicts a stronger perception of identity issues and increased acquisition of both pro-Taiwanese and pro-Chinese information.

These two mechanisms are not necessarily exclusive among treated individuals, but which one dominates bears important implications to understand how the history curriculum further shapes political outcomes (polarized vs. neutralized stances).

4.2.1 Limited vertical transmission: parents' ideology and reaction

Parents in favor of non-Taiwanese identity may react more adversely to the new curriculum, increasing the vertical transmission of the opposite identity. It is also worth noting that our setting is somewhat different from the commonly used setup: we focus on high school adolescents (similar to Cantoni et al. (2017)), who are less receptive to parental transmission than the school-age children studied in existing research. To empirically test this channel, we allow the impact of the new curriculum to vary by (1) if both parents grew up in Taiwan, and (2) if both parents favor the independent nationhood of Taiwan. Specifically, we generate a dummy that is 1 for each mediator.³⁵

The first four rows in Figure 4 report the corresponding regression results. The left panel visualizes the estimated effect on Taiwanese identity, and the right panel visualizes the estimated effect on Chinese identity. Rows 1-2 show that there is no discernable heterogeneous effect due to parents' ethnicity. Given the limited variation in parents' ethnicity in the Taiwanese setting as noted, even if in the presence of any discernible heterogeneous treatment effect, it is not likely to be the primary contributor to underpin the baseline results. In Rows 3-4, while the estimates are slightly more significant among individuals whose parents favor Taiwanese identity, there is again no statistically differential response due to parents' ideology. The P-values of the corresponding Wald test (for the equality of coefficients) are 0.636 and 0.628 respectively.

To better understand the role of parents' reaction, Column (1) of Table B7 shows that the reform is associated with greater awareness of parents' national ideology, and the effect is stronger among respondents with non-native parents. These combined results suggest that, consistent with the existing studies, oppositional parents are more likely to resist curricular indoctrination and increase intergenerational transmission of identity. However, compared with its substantial effect on school-age children's ideology (e.g., Fouka, 2020), vertical transmission is less effective for high schoolers and thus not likely to be the primary mechanism here.

 $^{^{35}}$ About 87.2% of the respondents' both parents grew up in Taiwan, and 43.1% of the respondents' both parents favor the independent nationhood of Taiwan.

4.2.2 Regional political spectrum and enforcement

We now turn to the geographical difference in political ideology, as the issue of national identity is deep in the bones of Taiwanese politics. Individuals growing up in pro-mainland environments may possess a weaker Taiwanese identity prior, but they (and other local individuals and groups) are also more likely to oppose the transmission of Taiwanese identity.³⁶ Therefore, there may exist both endogenous information supply and demand along the geopolitical dimension. To this end, we allow the effect on transmission to vary by the dominant political ideology (pro-mainland vs. pro-independence) in one's hometown city. Specifically, we construct a binary mediator that is 1 for the hometown city where the pro-mainland parties dominated in the 2000 and 2004 general elections. The mean of this hometown ideology dummy is 51.8%.

The fifth and sixth rows in Figure 4 show that the new curriculum is relatively effective in consolidating Taiwanese identity among respondents growing up in *ex-ante* pro-Chinese regions, and there is no salient pushback in favor of Chinese identity, though the estimates are less precise. The 95 curriculum indoctrinates the Taiwanese roots and erases Chinese roots. Thus, the heterogeneity along the geo-political dimension, if any, seems to be more in line with the case in which high schoolers endogenously acquire identity-related information they are less familiar with: following the curricular reform, students from "pro-independence" regions with lower Chinese prior exhibit greater Chinese recognition, and students from "pro-mainland" regions with lower Taiwanese prior exhibit greater Taiwanese recognition. This suggests the possibility of a co-movement speculation where high schoolers are not extremely intolerant of other cultural identities. Collectively, our results can not be purely reconciled with the canonical substitution explanation.

<u>Reaction of teachers.</u> To understand the enforcement channel, we further investigate the reaction of high school teachers, the front-line implementers of the new curriculum. Conceptually, while teachers can input via changing their instructional methods, the primary goal of teaching may not shift: the instruction is still dominantly directed by the textbook content in order to better prepare students for the college entrance exam.³⁷ To quantitatively study how high school teachers react to the 95 curriculum, we utilize the Taiwan Education Panel Survey (TEPS, 2005 - 2007). Managed by the Ministry of Education and the Ministry of Science and Technology, the TEPS is a longitudinal study that collects information from a representative sample of students and teachers at junior and senior high schools in Taiwan. We employ

³⁶Households from pro-mainland cities may resist the transmission of Taiwanese memory by increasing their consumption of Chinese-related content, which can reduce the costs of interacting with people who are different from them (Bisin et al., 2011). It could also be that local front-line providers may make extra efforts (e.g., oppositional propaganda and changes in pedagogical methods) to mitigate the indoctrination of Taiwanese identity.

³⁷Sung (2020) provides qualitative evidence that, pedagogically, most history teachers tend to remain neutral on the issue of national identity regardless of their political axes.

the history teachers' responses in 2005 (pre-reform) and 2007 (post-reform) to conduct a simple DiD. Columns (3) - (6) of Table B7 present the results. The estimate in Column 3 suggests that the introduction of the new curriculum does not alter regular-track teachers' adherence to the textbook. Column (4) shows that the new curriculum does not have a significant effect on switching to different teaching practices. Columns (5) - (6) further complement the analysis by showing that the time allocation of instructors also experiences little change. Therefore, our baseline results are unlikely to be driven by changed teaching practices.

Other substitute mechanisms for socialization. Apart from the parental transmission and geo-political differences, one may be concerned about the reaction of other social and cultural groups that relate to identity formation (Carvalho, Koyama and Williams, 2022). Differing from other settings (e.g., Sakalli, 2019; Fouka, 2020; Bazzi, Hilmy and Marx, 2021), religious groups and other social organizations play marginal roles in Taiwanese high schoolers' lives. Without the presence of organized religious communities, religious culture in modern Taiwan is of little relevance to identity formation (Frettingham and Hwang, 2017). A review of the related literature also indicates that there are no other social organizations in Taiwan that can effectively engage high schoolers – just as in other East Asian countries, students face fierce competition to stand out in Taiwan's education system.

4.2.3 Identity consciousness and information acquisition

Motivated by the above findings, in this section, we provide two pieces of evidence in favor of the endogenous change in information demand – the transmission emphasizing Taiwanese identity alters high-schoolers' identity consciousness, leading them to acquire more identity-related information in order to be better informed of their cultural identities.

<u>Identity consciousness (preference shift).</u> We begin by showing that curricular indoctrination alters high schoolers' national identity consciousness. The outcome variable is a binary that is 1 if the respondent views the national identity issue as "important" and 0 otherwise ("not important"). The last row of Figure 3 suggests that studying under the 95 curriculum is associated with a 12 percentage point (0.25 standard deviation) higher likelihood of demonstrating a strong identity consciousness, indicating a salient preference shift.

<u>Information acquisition on both identities.</u> If the new curriculum triggers greater care of national identity, then we expect high schoolers to invest more in acquiring related information. First, the fifth row of Figure 3 visualizes the DiD estimate on an augmented dependent variable, which equals 1 only if the respondent simultaneously values both Taiwan-oriented memory and China-oriented national memory noted earlier in the TSCS. Additionally, the sixth row corroborates by using an equally-weighted z-score index that summarizes the recognition

 $^{^{38}}$ As highlighted before, the majority of Taiwanese residents are of Han ethnicity. Moreover, most Taiwanese do not have a definite religious affiliation; instead, they only practice some Chinese folk religious traditions, which are in essence a combination of Buddhism and Taoism with a Confucian worldview. According to a survey by Pew Research Center in 2010, 81.7% of Taiwanese practice some Chinese folk religious traditions.

of each national memory. These estimates suggest that the 95 Curriculum Reform is associated with a greater probability of an individual recognizing both types of national memory.

Importantly, high schoolers may obtain information from not only the "manipulated" text-books but also other sources (e.g., social media). To this end, we use the Taiwan Communication Survey (2015), a representative survey managed by the Ministry of Science and Technology that focuses on political and civic communication, to present direct evidence. Columns (1) - (2) of Table 3 indicate that studying under the 95 history curriculum is associated with significantly greater attention to both China- and Taiwan-related messages, in which each dependent variable is on a 5-point integer scale, where 1 refers to "very little attention", and 5 refers to "a great deal of attention". Columns (3) and (4) provide stronger evidence that treated high schoolers are more likely to simultaneously acquire *both* sets of information from the media, speaking to the pattern of memory recognition. Finally, Column (5) runs a placebo test using the consumption of the weather forecast as the outcome and the estimated effect is close to zero.

[Table 3 here]

Taken together, we observe a significant increase in the perceived salience of identity issues and information acquisition from both narratives, which may induce greater weights on common attributes (and in turn mitigate the exclusiveness and neutralize the identity stance). These patterns are consistent with the geo-political heterogeneity documented above, indicating a prominent role of endogenous information demand by recipients.

4.2.4 Testing the dominant mechanism: co-movement

The empirical evidence so far implies that the endogenous information demand of high schoolers tends to have greater explanatory power. In this set of analyses, we explicitly test which mechanism dominates. This is of particular relevance, as the two mechanisms generate different predictions on how the new curriculum reshapes the overall political spectrum and voting behavior.

[Table 4 here]

First, we conduct a coarse analysis based on a binary dependent that captures the comovement pattern, which is 1 if an individual reports an intense Taiwanese identity (above its group mean) in conjunction with an intense Chinese identity. The mean cutoff is calculated within the treatment group and the control group separately to account for the education-specific differences. As seen in Column (1) of Table 4, the new curriculum increases the likelihood of

³⁹The corresponding survey questions are "How much attention do you pay to *pan-blue* (pro-mainland) information posted on media platforms?" and "How much attention do you pay to *pan-green* (pro-independence) information posted on media platforms?"

identifying oneself as both Taiwanese and Chinese.⁴⁰ The estimate remains robust if we adopt the group median as the cutoff for the strength of each identity (Column 2). Moreover, the result persists even if conditioning on the geo-political differences noted earlier (Table B8), suggesting that when transmission makes the dimension it seeks to affect too salient, it can not only affect the oppositional types but also the mainstream types. Together, these results suggest that the co-movement mechanism may be dominant.

However, given that both outcomes (Taiwanese identity and Chinese identity) are endogenous variables affected by the same reform (and that conceptually it is not easy to have additional independent experiments that only affect one variable), we further turn to examine the correlation between two identities to obtain a neater design. To do so, we aggregate the observations by $Treat \times Cohort$ cell (similar to the Donald-Lang approach) and use the cell-specific correlation between the two reported identities as the dependent variable. Conceptually, this measure captures the exclusiveness of the two identities. Column (3) of Table 4 reports the results. The mean of the dependent variable is -0.288, indicating that Taiwanese identity and Chinese identity are generally negatively associated with each other. Importantly, the positive DiD estimate implies that studying under the new curriculum mitigates this antagonistic correlation – that is, treated high schoolers are on average more likely to reconcile with a joint strengthening/co-existence of two identities.

Third, we utilize the recent advancement in non-parametric DiD to better investigate the heterogeneous treatment effects without assuming the linearity of covariates (Lu, Nie and Wager, 2019). Figure A4 visualizes the distribution of heterogeneous treatment effects varying by respondent's gender, parental background, parents' ideology, and geo-political differences. Consistent with our previous findings, despite the presence of some heterogeneity, the comovement channel dominates.

In sum, the evidence above suggests that the co-movement mechanism that considers the endogeneity of high schoolers' information acquisition contributes primarily to the unintended impact of the 95 history curriculum, leading to an increased recognition of the common attributes of Chinese and Taiwanese. These combined results also speak to the growing economic identity literature that multiple identities can co-exist and evolve together (e.g., Constant, Gataullina and Zimmermann, 2009; Georgiadis and Manning, 2013; Okunogbe, 2023).

5 Further Results: Political Inclination and Voting

National identity plays a central role in Taiwan's politics. Since 1992, Taiwan has effectively been a "Green-Blue" two-party duopoly. The "Green" coalition led by the *Democratic Progressive*

⁴⁰The argument is made according to the mean strength of the identity, since the subjective identity perception is more meaningful on an ordinal scale. That is, a strength of "5" for Chinese identity and a strength of "5" for Taiwanese identity may not be comparable. We later use behavioral outcomes to further attenuate this concern.

Party (DPP) has traditionally favored Taiwanese nationalism and pro-independence ideology. The 95 Curriculum Reform was implemented by the DPP, which was the ruling party of Taiwan then. In contrast, the "Blue" coalition led by the Kuomintang (KMT) is generally in favor of a stronger linkage with Mainland China. It follows that whether (and if so when) Taiwan should unify with Mainland China or declare its independence remains a tense issue in Taiwan's identity politics (which also has a direct bearing on China-U.S. relations). Therefore, the new history curriculum may further affect political behavior. To attenuate the "house effect" concern, we utilize both the TSCS and the CIS data to corroborate our findings. Considering that political attitudes and voting are generally interacted with more complicated incentives and factors, this section provides only a tentative attempt to suggest the potential relevance of curricular transmission.

5.1 Pro-independence inclination and protectionism

First, we examine whether exposure to the new curriculum affects attitudes toward Mainland China. Specifically, we look at one's pro-independence inclination and attitudes toward economic integration with the mainland. To measure the pro-independence inclination, we exploit a pair of questions that have been widely used in Taiwan's polling as noted earlier: (1) whether Taiwan's regime should declare its independence from China if it would not cause a civil war; (2) whether Taiwan's regime should unify with Mainland China if sharing similar economy and policy. For each question, we construct a dummy that is 1 for "agree" and 0 for "disagree". Columns (1) - (4) of Table 5 present the results using the TSCS and the CIS data. The pairwise comparison suggests that treated high schoolers tend to possess a relatively moderate stance concerning Taiwan's nationhood: they are more cautious about declaring independence; yet, there is little change in the intention of unification. These findings speak to our earlier notion that calls for caution in interpreting the single observational proxy – reduced support for radical nationalistic policies may not necessarily indicate an endorsement for promainland policies.

[Table 5 here]

We then turn to investigate the impact on protectionism, which bears economic significance (Maddens, Billiet and Beerten, 2000; Fisman, Hamao and Wang, 2014; Fouka and Voth, 2022). While Mainland China has long been Taiwan's top trade partner across the strait and has offered active support and concessions, Taiwan's attitudes toward economic cooperation are, at best, ambivalent even in the face of material gains. Pro-independence politicians fear that the economic integration will create over-dependence on the mainland and thus frame Beijing's concession as a strategy to facilitate unification (Powers and Lin, 2019). However, the economic growth of Taiwan hinges heavily on its trade gain with Mainland China. Therefore, conditioning on no significant change in the intention of unification, policy preferences on eco-

nomic cooperation with the mainland may feature an ambiguous or neutral political stance. As shown in Columns (5) - (6) of Table 5, across different datasets, studying under the new history curriculum is associated with a higher probability of supporting economic cooperation with the mainland. To address concerns about multiple hypothesis testing, Columns (7) - (8) utilize a z-score index as the outcome variable to summarize the aforementioned related outcomes, and the results remain highly robust.

Taken together, studying the new curriculum is associated with a more moderate position on Taiwan-Mainland political and economic tensions. Since we only compare the "jumps" in outcomes across adjacent school cohorts within the same cross-sectional survey, the estimates are less likely to be confounded by differential evolvement by education level or changes in identity politics over time. While suggestive, the pattern resonates with the previous result that the reform promotes the co-recognition of Taiwanese and Chinese identities, which could in turn neutralizes the political spectrum.

5.2 Voting behavior

Our final set of analyses explores the potential impact of the 95 history curriculum on voting behavior in general elections. In Taiwan, a general election is held every four years, in which all citizens over 20 years old with at least 6 months of residency are eligible to vote. Voters elect the president and vice president as a joint ticket from three groups of candidates. The first general election that individuals from the 2006 academic cohort could participate in is the 2012 one. The 2012 and 2013 waves of the CIS elicit voting behavior in the general election of 2012, and its 2016 wave elicits voting behavior in the 2016 one. To increase the power, we also pool all waves of the TSCS that comprise respondents' voting behavior from 2012 to 2016.

We start by excluding individuals who are not eligible to vote from our sample. Next, we classify candidates in each election as "Blue" (pro-mainland), "Green" (pro-independence), and "Median" (relatively neutral position) according to their party affiliations and creeds. Voters, however, are also able to abstain. As we are primarily interested in whether the political spectrum turns more polarized or neutral, an abstention in the two-party duopoly can be viewed as an expression of a neutral position or alienation. Thus, abstention votes are classified into the same category as votes for "median" candidates in our baseline analysis (we also investigate them separately later). We then define binaries to indicate whether one belongs to each category. For instance, we create a binary for the "Green" vote that is 1 if voting for candidates from "Green" coalition in the general election, and 0 otherwise (including abstaining). Appendix E summarizes the information about presidential candidates and electoral outcomes

 $^{^{41}}$ In a typical Taiwanese general election since 2008, the affiliations of the three groups of candidates are comprised of DPP ("Green"), KMT ("Blue"), and a third party (with a relatively moderate position).

⁴²The difference in the mean of outcome variables between the CIS and the TSCS is thus due to the different weights assigned to the 2012 and 2016 general elections. The 2012-2015 waves of the TSCS elicit voting behavior in the general election of 2012, and the 2015 wave elicits voting behavior in the general election of 2016.

in the 2012 and 2016 general elections.

The usage of multiple waves from two independent surveys largely alleviates the threat of "house effect" bias and small sample constraint. Another common concern about self-reported votes is over-reporting. While we cannot eliminate the presence of falsehood, we argue that it is less of an issue in our study. First, our identification relies on a DiD exploiting a sharp cut-off across cohorts; accordingly, the estimates would not likely be biased unless the falsification was systematically correlated with the study of the new curriculum. Moreover, the existence of over-reporting may drive our estimate of interest (the impact on "median" inclination) toward zero, leading to a lower bound of estimated effects. Second, both the CIS and the TSCS are retrospective general social surveys instead of ex-ante polls. In particular, the TSCS elicits respondents' votes using both direct self-reported and indirect game-based approaches to ensure the consistency of responses. Third, both elections have no "controversial" candidates that may trigger strong incentives for respondents to falsify.

[Table 6 here]

Table 6 reports the results on voting behavior. Studying under the 95 history curriculum adds about 10 percentage points to the probability of voting for median candidates or abstention (Columns 3 and 4). Accordingly, we see a reduction in the probability of voting for "Blue" or "Green" candidates among the treated individuals (although the estimates are less precise). Figure A5 further checks separately the effect on "median" votes vs. abstention and finds that the votes for the "median" candidates contribute more to the moderation result.

Notably, the magnitudes of the estimated coefficients adopting different surveys are largely compatible, further bolstering the validity of our findings. The results also remain robust to the choice of the cohort bandwidth (Figure A6), as well as controlling for the interaction of *Post* and college education. Finally, Figure A7 presents event study plots to validate the "jump" in voting outcomes across adjacent treated and untreated cohorts.

In sum, the above exercises provide suggestive evidence that, in line with our baseline results on national identity formation, the 95 history curriculum has likely neutralized the political axes, indicating the potentially relevant role of school curricula in shaping socioeconomic and political outcomes.

6 Conclusion

This paper studies the impact of history curricula on national identity and political behavior. The 95 Curriculum Reform separates the chronology and designation of Taiwan from the history of China, sharply increasing Taiwan-related collective memory to foster Taiwanese identity. We find that the transmission induces unintended consequences: studying under the

95 history curriculum enhances the reported strength of both Taiwanese and Chinese identities. Our analysis suggests the new curriculum increases high schoolers' identity awareness and incentivizes them to demand more information related to both cultural identities, which in turn leads to a recognition of shared aspects. We further observe the treated individuals exhibit more moderate political inclinations and, coherently, they are more likely to vote for "median" candidates and abstain.

Collectively, we present novel empirical evidence on the scope of history curricula in nation-building and thus contribute to the growing discussion on the role of educational content in shaping attitudes and socioeconomic outcomes. While the observed backlash pattern can be specific to the episode of Taiwan's *de-sinicization*, our results may hold some general implications. In particular, we highlight recipients' endogenous information demand as a prominent channel capable of counteracting educational indoctrination, speaking to the flourishing theories of cultural homogenization (Bisin et al., 2011; Carvalho, Koyama and Williams, 2022). Furthermore, our results also resonate the growing literature on multiple identities (Shayo, 2009; Dehdari and Gehring, 2022; Okunogbe, 2023). These insights have potential applicability to other contexts of nation-building and may help explain the mixed results of curricular transmission.

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Figures

Taiwanese identity

Chinese identity

Chinese identity

Chinese identity

Chinese identity

Chinese identity

Chinese identity

Apply 1980

School entry cohort relative to the 95 curriculum reform

Treatment group

Treatment group

Treatment group

Figure 1: National identity in Taiwan - treatment vs. control group

Notes: The figure depicts the average reported strength of Taiwanese/Chinese identity of treatment (having attained regular senior high school track education) and control groups across school entry year cohorts. Foreigners are excluded. Each national identity is measured by a Likert scale ranging from 0 (not at all) to 10 (absolutely).

[Back to Page 16]

Taiwanese identity (standardized) Chinese identity (standardized) 1.6 1.2 Point estiamte (90% confidence intervals) Point estiamte (90% confidence intervals) .8 -4,-3 -2,-1 1,2 Cohort(s) relative to the curriculum reform (biennial bin) -4,-3 -2,-1 1,2 Cohort(s) relative to the curriculum reform (biennial bin) -6,-5 -6,-5 3,4 3,4 Coef [Treated×Event-time dummy]: No controls Coef [Treated×Event-time dummy]: No controls Coef [Treated×Event-time dummy]: Controls Coef [Treated×Event-time dummy]: Controls Coef [Treated×Event-time dummy]: Controls + Group trends Coef [Treated×Event-time dummy]: Controls + Group trends

Figure 2: History curriculum reform and national identity gap

Notes: The identity gaps are estimated based on:

$$y_i = \sum_{T} DD_{cs}^T + x_i'\theta + \lambda_s + \tau_c + \varepsilon_i$$

where the difference-in-differences (DD) is allowed to vary with biennial cohort bins. Each outcome variable has been standardized to have zero sample mean and unit standard deviation. Controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and hometown (city) fixed effects. Reporting 90% confidence intervals using educational track clusters.

[Back to Page 17]

The 228 Incident [sharpened q-value: 0.068*] The Formosa Democratic Movements [sharpened q-value: 0.015**] The establishment of the Republic of China [sharpened q-value: 0.001***] The Second Sino-Japanese War [sharpened q-value: 0.001***] Combined: Taiwanese & Chinese collective memories Combined: z-score (four aforementioned memories) Placebo: Asian recognition Identity consciousness: natioanl identity issue is crucial -.5 -.25 .5 .75 Coef [Treated × Post] Coef [Treated×Post]: Taiwan-based collective memory Coef [Treated×Post]: China-based collective memory

Figure 3: History curriculum reform, national consciousness and national memory

Notes: The figure visualizes the difference-in-differences estimates based on the specification:

$$y_i = \beta \times Post_c \times Treat_s + x_i'\theta + \lambda_s + \tau_c + \varepsilon_i$$

Each row presents the estimate from one separate regression. Each outcome variable is a binary that is one if the response is "important" and zero otherwise; for ease of presentation, we standardize each outcome variable. Controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and hometown city fixed effects. Sample bandwidth: [-6,+4] cohorts around the reform. Reporting confidence intervals using educational track clusters. The sharpened q-values (following the false discovery rate procedure by Anderson (2008)) are reported in brackets to account for multiple hypothesis testing (Rows 1-4); Row 6 also presents the estimate using an equally-weighted z-score index that summarizes the related outcomes in Rows 1-4.

[Back to Page 19] [Back to Page 23]

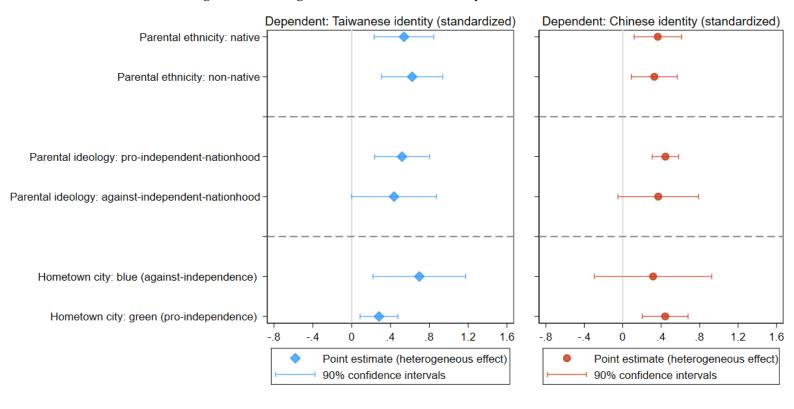


Figure 4: Heterogeneous effects of the history curriculum reform

Notes: The figure visualizes the estimated heterogeneous effects of the 95 curriculum on national identity formation. Each panel presents the results from three separate regressions. The specification is similar to that of Equation (1) but allows the impact to vary by the corresponding mediator variable:

$$y_i = \beta_1 \times Post_c \times Treat_s \times \mathbf{1}_{[Mediator=0]} + \beta_2 \times Post_c \times Treat_s \times \mathbf{1}_{[Mediator=1]} + x_i'\theta + \phi_{Treat \times Mediator} + \psi_{Post \times Mediator} + \lambda_s + \tau_c + \varepsilon_i$$

The mediator in Rows 5 - 6 is a dummy that is 1 if the pro-mainland party dominates one's hometown city in the 2000 and 2004 general elections. Sample bandwidth: [-6,+4] cohorts around the reform. Reporting 90% confidence intervals using educational track clusters.

Tables

Table 1: Summary statistics and balance check

Panel A	All	Pre-S	Septemb	er 2006	Post-S	Septemb	er 2006	Diff-i	Diff-in-Diff	
TSCS (2013)		Control	Treat	Diff.	Control	Treat	Diff.	Raw	Conditional	
, ,	Mean (s.d.)	Mean	(s.d.)	[p-value]	Mean	(s.d.)	[p-value]	[p-value]	[p-value]	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Male	0.535	0.544	0.458	-0.085	0.559	0.576	0.017	0.102	0.079	
	(0.500)	(0.501)	(0.502)	[0.269]	(0.499)	(0.498)	[0.837]	[0.366]	[0.268]	
Dialect usage	0.422	0.476	0.403	-0.073	0.452	0.305	-0.147	-0.074	-0.055	
	(0.439)	(0.482)	(0.398)	[0.341]	(0.434)	(0.429)	$[0.068]^*$	[0.505]	[0.504]	
Religious	0.642	0.718	0.653	-0.066	0.602	0.559	-0.043	0.023	-0.016	
	(0.480)	(0.452)	(0.479)	[0.362]	(0.492)	(0.501)	[0.605]	[0.835]	[0.868]	
Native	0.948	0.922	0.958	0.036	0.957	0.966	0.009	-0.027	-0.020	
	(0.222)	(0.269)	(0.201)	[0.313]	(0.204)	(0.183)	[0.775]	[0.573]	[0.651]	
Native (father)	0.969	0.971	0.972	0.001	0.978	0.949	-0.029	-0.030	-0.030	
	(0.172)	(0.169)	(0.165)	[0.958]	(0.146)	(0.222)	[0.369]	[0.459]	[0.498]	
Native (mother)	0.969	0.981	0.958	-0.022	0.968	0.966	-0.002	0.021	0.033	
	(0.173)	(0.139)	(0.201)	[0.417]	(0.178)	(0.183)	[0.957]	[0.612]	[0.394]	
Coastal hometown	0.578	0.602	0.597	-0.005	0.548	0.559	0.011	0.016	0.007	
	(0.495)	(0.492)	(0.494)	[0.950]	(0.500)	(0.501)	[0.896]	[0.889]	[0.952]	
Observations	327	103	72	175	93	59	152	327	327	
Panel B	All	Pre-S	Septemb	er 2006	Post-September 2006			Diff-in-Diff		
CIS (pooled)		Control	Treat	Diff.	Control	Treat	Diff.	Raw	Conditional	
(1 /	Mean (s.d.)	Mean	(s.d.)	[p-value]	Mean	(s.d.)	[p-value]	[p-value]	[p-value]	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Male	0.512	0.522	0.503	-0.019	0.529	0.492	-0.037	-0.019	-0.018	
	(0.500)	(0.501)	(0.502)	[0.743]	(0.503)	(0.504)	[0.672]	[0.858]	[0.873]	
Native (father)	0.860	0.876	0.877	0.002	0.838	0.800	-0.038	-0.040	-0.043	
	(0.348)	(0.331)	(0.329)	[0.965]	(0.371)	(0.403)	[0.571]	[0.603]	[0.621]	
Coastal residency city	0.459	0.484	0.484	-0.001	0.368	0.431	0.063	0.064	0.057	
	(0.499)	(0.501)	(0.501)	[0.992]	(0.486)	(0.499)	[0.461]	[0.533]	[0.546]	
Observations	449	161	155	316	68	65	133	449	449	

Notes: The table presents descriptive statistics (mean, standard deviation) of demographic characteristics. Sample bandwidth: [-6,+4] cohorts around the reform. "TSCS 2013" refers to the *Taiwan Social Change Survey* (National identity) in 2013; "CIS (pooled)" refers to the *Chinese Impact Studies* (2012, 2013, 2015, 2016). "Dialect usage" is an indicator that is 1 if Taiwanese Hokkien dialect is used in one's daily life; "Religious" is a dummy that is 1 if the respondent holds at least one religion or has some folk religious beliefs; "Native" is a dummy that is 1 if the respondent was born in Taiwan. Standard deviations are in parentheses. In Column (9), the difference-in-differences are estimated conditional on the educational track fixed effects and cohort fixed effects (the same set of fixed effects as the one used in the main specification), with Donald-Lang 2-step adjusted P-values in brackets. * p < 0.1, ** p < 0.05, *** p < 0.01.

[Back to Page 15]

Table 2: History curriculum reform and reported national identity

	Taiwane	ese (0, low - 1	0, high)	Chinese (0, low - 10, high)			
Mean of dep. var	(1)	(2)	(3)	(4)	(5)	(6)	
	8.892	8.892	8.892	2.435	2.435	2.435	
$Treat \times Post$	0.604	0.745	0.975	1.248	1.035	1.325	
Cluster SEs: Education track Cluster SEs: Treat \times Cohort	(0.300)*	(0.324)*	(0.324)**	(0.448)**	(0.359)**	(0.359)***	
	(0.100)***	(0.158)***	(0.137)***	(0.284)***	(0.301)***	(0.302)***	
Donald-Lang Aggregate Est.	0.612	0.800	1.026	1.259	1.069	1.355	
Donald-Lang Newey–West SEs	(0.109)***	(0.151)***	(0.098)***	(0.231)***	(0.212)***	(0.234)***	
Cohort FEs Education track FEs Demographic controls Group specific trends	Yes Yes	Yes Yes Yes	Yes Yes Yes Yes	Yes Yes	Yes Yes Yes	Yes Yes Yes Yes	
Std. dev. of dep. var.	1.575	1.575	1.575	2.757	2.757	2.757	
Observations	327	327	327	327	327	327	
Data source	Taiwa	n Social Cha	nge Survey	- National Id	lentity (TSCS	5 2013)	

Notes: Unit of observation: the individual in 2013. Treat is a dummy that is one if the respondent has received regular-track high school education. Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). Demographic controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and respondent hometown (city) fixed effects. Sample bandwidth: [-6,+4] cohorts around the reform. For Donald-Lang 2-step estimators, there are 2 groups (treatment and control) and 10 cohorts; the Newey-West method further adjusts standard errors for auto-correlation (with maximum lag set at 3 cohorts). * p < 0.1, ** p < 0.05, *** p < 0.01.

[Back to Page 17]

Table 3: History curriculum reform and changes in information acquisition

	Attention and media consumption							
	Taiwan-oriented messages (1, low - 5, high) (1)	China-oriented messages (1, low - 5, high) (2)	Binary: attention to both (1) & (2) (3)	Z-score (4)	Binary: weather forecast (placebo) (5)			
Mean of dep. var	2.409	2.431	0.209	0.000	0.333			
$Treat \times Post$	0.378	0.531	0.197	0.432	0.009			
Cluster SEs: Education track Cluster SEs: Treat \times Cohort	(0.137)** (0.159)**	(0.134)*** (0.164)***	$(0.040)^{***}$ $(0.054)^{***}$	(0.128)** (0.149)***	(0.089) (0.090)			
Donald-Lang Aggregate Est. Donald-Lang Newey–West SEs	0.362 (0.165)*	0.544 (0.164)**	0.194 (0.059)**	0.431 (0.153)**	-0.033 (0.088)			
Cohort FEs	Yes	Yes	Yes	Yes	Yes			
Education track FEs	Yes	Yes	Yes	Yes	Yes			
Demographic controls	Yes	Yes	Yes	Yes	Yes			
Std. dev. of dep. var.	1.082	1.080	0.407	1.003	0.472			
Observations	329	329	329	329	329			
Data source	Taiwan Co	ommunication Sur	vey - Political (Communicat	ion (2015)			

Notes: The outcome variable in Column (3) is a binary that is 1 if the respondent pays particular attention to both China-oriented and Taiwan-oriented messages (using "4 [frequent]" as the cutoff). Columns (4) also presents the estimate based on an equally-weighted z-score index that summarizes the related outcomes in Columns (1) - (3); Treat is a dummy that is one if the respondent has received regular-track high school education. Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). Demographic controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and respondent hometown city fixed effects. Sample bandwidth: [-6,+4] cohorts around the reform. For Donald-Lang 2-step estimators, there are 2 groups (treatment and control) and 10 cohorts; the Newey-West method further adjusts standard errors for auto-correlation (with maximum lag set at 3 cohorts). * p < 0.1, *** p < 0.05, *** p < 0.01.

Table 4: History curriculum reform and identity co-movement

	Strong Taiwanese & strong Chinese recognition		Correlation between two identities
	(1)	(2)	(3)
Mean of dep. var	0.193	0.267	-0.288
$\overline{\text{Treat} \times \text{Post}}$	0.174	0.275	0.322
Cluster SEs: Education track	$(0.059)^{**}$	$(0.054)^{***}$	-
Cluster SEs: Treat \times Cohort	$(0.069)^{**}$	$(0.070)^{***}$	-
Donald-Lang Aggregate Est.	0.179	0.272	0.322
Donald-Lang Newey–West SEs	$(0.094)^*$	(0.096)**	$(0.160)^*$
Cohort FEs	Yes	Yes	Yes
Education track FEs	Yes	Yes	Yes
Demographic controls	Yes	Yes	-
Cutoff	Mean	Median	-
Std. dev. of dep. var.	0.395	0.443	0.325
Observations	327	327	20
Unit of obs.	Individual	Individual	Treat \times Cohort
Data source	Taiwan Socia	al Change Surve	y-National Identity (2013)

Notes: "Strong Taiwanese/Chinese recognition" is a binary that is one if the reported identity is above its corresponding cutoff (mean or median). The outcome variable in Columns (1) - (2) is the product of the aforementioned two binaries, which captures whether an individual simultaneously exhibits strong recognition of both identities. Treat is a dummy that is one if the respondent has received regular-track high school education. Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). Demographic controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and respondent hometown city fixed effects. "Cutoff" refers to the within-group (by Treat) statistic to define the strength of identity as "strong" or "weak". Sample bandwidth: [-6,+4] cohorts around the reform. For Donald-Lang 2-step estimators, there are 2 groups (treatment and control) and 10 cohorts; the Newey-West method further adjusts standard errors for auto-correlation (with maximum lag set at 3 cohorts). * p < 0.1, ** p < 0.05, *** p < 0.05, *** p < 0.01.

Table 5: History curriculum reform and political inclinations

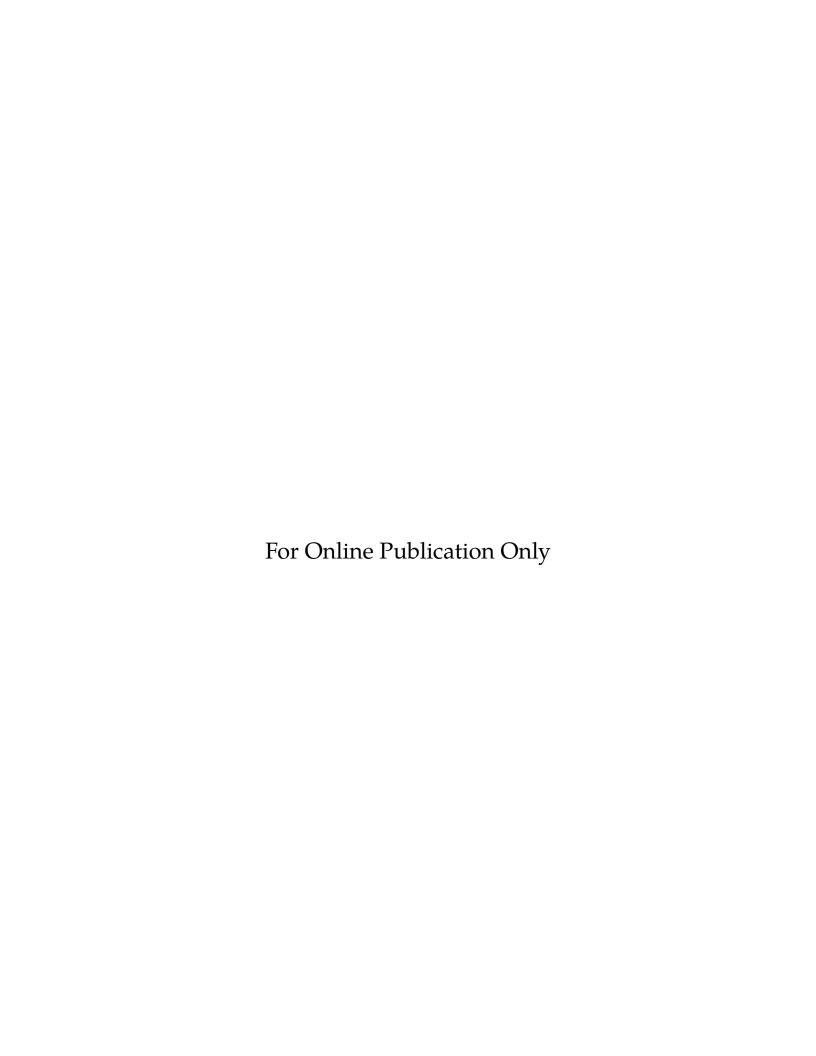
	Declaring independence if it would not lead to war (0 disagree,1 agree)		Unification with Mainland if similar economy and policies (0 disagree,1 agree)		Encouraging economic co-operation with Mainland (0 disagree,1 agree)		Z-score: moderation along political axes	
Mean of dep. var	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	0.633	0.617	0.216	0.126	0.395	0.279	0.000	-0.000
$\overline{\text{Treat} \times \text{Post}}$	-0.114	-0.158	0.032	-0.012	0.214	0.107	0.375	0.366
Cluster SEs: Education track Cluster SEs: Treat \times Cohort	(0.071) (0.066)*	(0.039)*** (0.076)*	(0.044) (0.063)	(0.061) (0.703)	(0.060)*** (0.080)**	(0.052)* (0.034)***	(0.079)*** (0.153)**	(0.211) (0.137)**
Donald-Lang Aggregate Est.	-0.107	-0.155	0.069	-0.022	0.205	0.111	0.415	0.327
Donald-Lang Newey–West SEs	(0.084)	(0.069)*	(0.047)	(0.033)	(0.105)*	(0.038)**	(0.219)*	(0.157)*
Cohort FEs Education track FEs Data source Std. dev. of dep. var Observations	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	TSCS	CIS	TSCS	CIS	TSCS	CIS	TSCS	CIS
	0.483	0.487	0.412	0.333	0.490	0.449	1.002	0.992
	327	449	327	449	327	449	327	449

Notes: Columns (7) - (8) present estimates using equally-weighted z-score indices that summarize the three related outcomes in Columns (1) - (6); we switch the signs of the outcomes in Columns (1) - (2) so that the positive direction always indicates moderation along the Taiwan-Mainland policy and political axes. Treat is a dummy that is one if the respondent has received regular-track high school education. Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). Demographic controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and respondent hometown city fixed effects. Sample bandwidth: [-6,+4] cohorts around the reform. "CIS" stands for the *China Impact Studies* (2012, 2013, 2015, 2016 pooled). "TSCS" stands for the *Taiwan Social Change Survey - National Identity* (2013). For Donald-Lang 2-step estimators, there are 2 groups (treatment and control) and 10 cohorts; the Newey-West method further adjusts standard errors for auto-correlation (with maximum lag set at 3 cohorts). * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 6: History curriculum reform and voting behavior

	Vote for "Blue" candidates			"Median" vote or abstention		e for andidates
Mean of dep. var	(1) 0.245	(2) 0.261	(3) 0.414	(4) 0.377	(5) 0.341	(6) 0.362
$Treat \times Post$	-0.079	-0.065	0.155	0.122	-0.076	-0.057
Cluster SEs: Education track Cluster SEs: Treat \times Cohort	(0.043) (0.066)	(0.044) (0.041)	$(0.070)^*$ $(0.050)^{***}$	(0.032)*** (0.022)***	(0.083) (0.037)*	(0.028)* (0.031)*
Donald-Lang Aggregate Est. Donald-Lang Newey–West SEs	-0.051 (0.061)	-0.028 (0.034)	0.139 (0.044)**	0.105 (0.022)***	-0.087 (0.026)**	-0.077 (0.023)**
Cohort FEs	Yes	Yes	Yes	Yes	Yes	Yes
Education track FEs	Yes	Yes	Yes	Yes	Yes	Yes
Survey wave FEs	Yes	Yes	Yes	Yes	Yes	Yes
Data source	CIS	TSCS	CIS	TSCS	CIS	TSCS
Std. dev. of dep. var	0.429	0.440	0.494	0.485	0.475	0.481
Observations	261	1,232	261	1,232	261	1,232

Notes: "Blue" ("Green") vote is a binary that is 1 if voting for pro-Chinese (pro-Taiwanese) candidates in the general election, and 0 otherwise (including abstaining). "Median" vote/abstention is a binary that is 1 if voting for candidates without blue/green party affiliation or abstention. Treat is a dummy that is one if the respondent has received regular-track high school education. Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). Sample bandwidth: [-6,+4] cohorts around the reform. "CIS" stands for the *China Impact Studies* (2012, 2013, 2016 pooled), in which respondents self-report their votes (the 2015 wave does not elicit voting information). "TSCS" here stands for the *Taiwan Social Change Survey* (2012-2016 pooled), which elicits respondent votes using both direct self-reported approach and indirect game-based strategy. For Donald-Lang 2-step estimators, there are 2 groups (treatment and control) and 10 cohorts; the Newey-West method further adjusts standard errors for auto-correlation (with maximum lag set at 3 cohorts). * p < 0.1, ** p < 0.05, **** p < 0.01.



Appendix A Appendix Figures

Percentage (%) 00 01 02 Calendar year Pure Taiwanese Pure Chinese Both or ambiguous

Figure A1: *De-sinicization* – national identity in Taiwan (1992-2010)

Notes: The figure plots the aggregate share of national identity in Taiwan based on polls from 1992 to 2010. Data source: Election Study Center, National Chengchi University of Taiwan (ESC, NCUT).

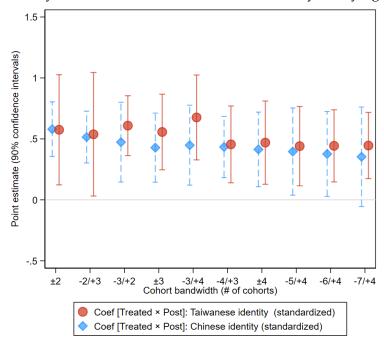


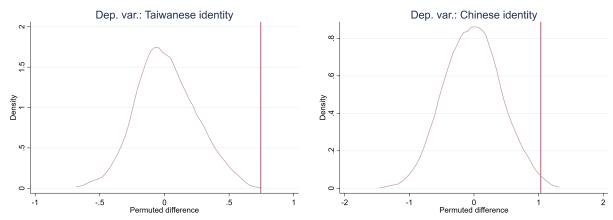
Figure A2: History curriculum reform and national identity – varying bandwidth

Notes: The figure visualizes the regression estimates using varying bandwidths based on the specification:

$$y_i = \beta \times Post_c \times Treat_s + \lambda_s + \tau_c + \varepsilon_i$$

Each outcome variable has been standardized to have zero sample mean and unit standard deviation. See Table 2 for additional notes. Reporting 90% confidence intervals.

Figure A3: Random permutation tests



Notes: The figure visualizes the regression estimates for randomly permuted DiD terms based on the specification (with 1,000 iterations for each outcome variable):

$$y_i = \beta \times Post_c \times Treat_s + \lambda_s + \tau_c + \varepsilon_i$$

See Table 2 for additional notes. The vertical line in each panel represents the corresponding baseline estimated coefficient. The likelihood of the original estimate being a result of coincidence is nearly zero for Taiwanese identity and less than 1.4% for Chinese identity.

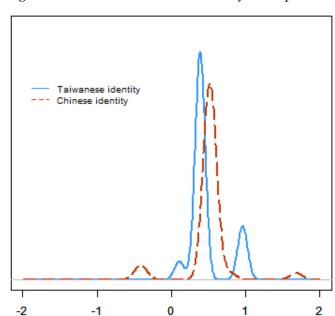


Figure A4: Heterogeneous effects on national identity – nonparametric estimates

Notes: The figure visualizes the distribution (density) of heterogeneous treatment effects using the nonparametric difference-in-differences method proposed by Lu, Nie and Wager (2019), separately for standardized Taiwanese identity and Chinese identity (z-score indices). The covariates include dummies for gender, native parents, parental views on Taiwanese nationhood ("pro-independence" or not), and "Blue dominance" (whether the pro-mainland parties dominated one's hometown city in the 2000 and 2004 general elections).

Votes for "median" candidates vs. Abstention

3
(Signal 2)

-2
Median vote

Abstention

Coef [Treated × Post]: TSCS sample

Coef [Treated × Post]: CIS sample

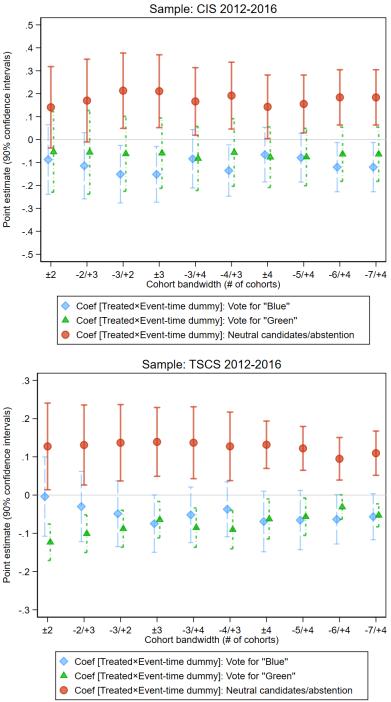
Figure A5: History curriculum reform, turnout, and "median" votes

Notes: The figure visualizes the regression estimates to separately examine the impact on abstention and votes for the "median" candidates, based on the specification:

$$y_i = \beta \times Post_c \times Treat_s + \lambda_s + \tau_c + \varepsilon_i$$

See Table 6 for additional notes. Reporting 90% confidence intervals.

Figure A6: History curriculum reform and voting behavior – varying bandwidth

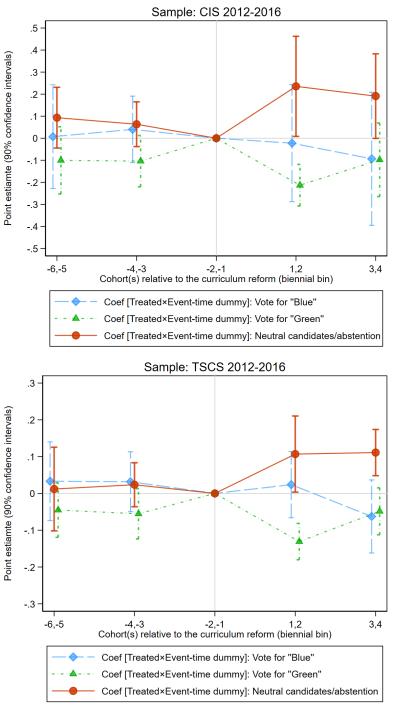


Notes: The figure visualizes the regression estimates using varying bandwidths based on the specification:

$$y_i = \beta \times Post_c \times Treat_s + \lambda_s + \tau_c + \varepsilon_i$$

See Table 6 for additional notes. Reporting 90% confidence intervals.

Figure A7: History curriculum reform and voting behavior



Notes: The voting gaps are estimated based on:

$$y_i = \sum_{T} DD_{cs}^T + x_i'\theta + \lambda_s + \tau_c + \varepsilon_i$$

where the difference-in-differences (DD) is allowed to vary with biennial cohort bins. Reporting 90% confidence intervals using educational track clusters.

Appendix B Appendix Tables

Table B1: Changes in topic counts in Taiwanese and Chinese history

Panel A: History of Taiwan	Count in "88" textbooks	Count in "95" textbooks	Change (%)
Category A. Institutions			
Political institution Economy	9 7	32 30	256 329
Category B. Society			
Civil society Rule of law	4 2	6 4	50 100
Category C. Science and technology			
Architecture Technology	2 2	5 6	150 200
Category D. Culture			
Language and religion Customs and lifestyle Art and literature	6 3 6	15 11 27	117 267 350
Category E. Territory and historical memories			
Race and consanguinity Historical territory Myth and legend National great men	3 4 1 6	7 22 1 6	133 450 0
Panel B: History of China	Count in "88" curriculum	Count in "95" curriculum	Change(%)
Category A. Prehistory & Ancient China			
Prehistory	5	3	-40
Xia - Zhou Dynasties Eastern Zhou (warring states)	10 17	9 14	-10 -18
	10	9	-10
Eastern Zhou (warring states)	10	9	-10
Eastern Zhou (warring states) Category B. Imperial China Qin Dynasty Han Dynasty Eastern Han - Sui Dynasties Tang Dynasty Song Dynasty Yuan Dynasty Ming Dynasty	10 17 5 4 22 13 10 2 6	9 14 5 4 20 8 10 1 5	-10 -18 0 0 -9 -38 0 -50 -17

Notes: The unit of count is *subsection*, which refers to the fourth layer of a textbook. For instance: "Part IV - Subversion of Qing Dynasty, Unit II - Reform and Revolution, Section I- Xinhai Revolution, Subsection I - Sun Yat-sen and 'Revive China Society'." We count the related content in each category in the old and new textbooks, respectively. The version of the new textbooks we use is the "Nan-I" edition (all editions are largely similar in terms of their structure and material but with different publishers). The old curriculum has only one unified version of textbooks.

[Back to Page 10]

Table B2: Curriculum reform and tertiary education

	Whether continuing through tertiary education (indicator)			
Mean of dep. var	(1) 0.706	(2) 0.788		
Treat \times Post	-0.053	-0.011		
Cluster SEs: Treat \times Cohort	(0.081)	(0.083)		
Donald-Lang Aggregate Est. Donald-Lang Newey–West SEs	-0.032 (0.085)	-0.015 (0.061)		
Cohort FEs	Yes	Yes		
Group (treatment/control) FEs	Yes	Yes		
Std. dev. of dep. var.	0.456	0.409		
Observations	327	449		
Data source	TSCS	CIS		

Notes: Treat is a dummy that is one if the respondent has received regular-track high school education. Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). Sample bandwidth: [-6,+4] cohorts around the reform. For Donald-Lang 2-step estimators, there are 2 groups (treatment and control) and 10 cohorts; the Newey-West method further adjusts standard errors for autocorrelation (with maximum lag set at 3 cohorts). * p < 0.1, *** p < 0.05, **** p < 0.01.

[Back to Page 14]

Table B3: Robustness to additional controls

	Taiwanese (0), low - 10, high)	Chinese (0,	low - 10, high)
Mean of dep. var	(1) 8.892	(2) 8.892	(3) 2.435	(4) 2.435
$Treat \times Post$	0.794	0.878	0.912	1.150
Cluster SEs: Education track Cluster SEs: Treat \times Cohort	(0.311)** (0.173)***	(0.192)*** (0.287)***	(0.374)** (0.333)**	(0.398)** (0.396)***
Donald-Lang Aggregate Est. Donald-Lang Newey–West SEs	0.844 (0.187)***	0.964 (0.217)***	0.960 (0.365)**	1.108 (0.330)**
Cohort FEs	Yes	Yes	Yes	Yes
Education track FEs	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes
"China" interpretation FEs	Yes	Yes	Yes	Yes
$Post \times Controls$		Yes		Yes
Treat \times Controls		Yes		Yes
Std. dev. of dep. var.	1.575	1.575	2.757	2.757
Observations	327	327	327	327
Data source	Taiwan Soc	ial Change Survey	y - National Id	dentity (2013)

Notes: Treat is a dummy that is one if the respondent has received regular-track high school education. Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). Demographic controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and respondent hometown city fixed effects. "China" interpretation fixed effects absorb whether an individual recognizes the mainland regime as a part of "China" (year/no/ambiguous). In Column (3) - (4), we interact Treat or Post with all aforementioned demographic controls and the "China" interpretation fixed effects. Sample bandwidth: [-6,+4] cohorts around the reform. For Donald-Lang 2-step estimators, there are 2 groups (treatment and control) and 10 cohorts; the Newey-West method further adjusts standard errors for auto-correlation (with maximum lag set at 3 cohorts). * p < 0.1, *** p < 0.05, **** p < 0.01.

[Back to Page 17]

Table B4: Robustness to differential effects by education level

	Taiwanese (0), low - 10, high)	Chinese (0, 1	low - 10, high)
Mean of dep. var	(1)	(2)	(3)	(4)
	8.892	8.892	2.435	2.435
Treat × Post Cluster SEs: Education track Cluster SEs: Treat × Cohort College × Post Cluster SEs: Education track Cluster SEs: Treat × Cohort	0.745 (0.324)** (0.158)***	1.058 (0.080)*** (0.211)*** -0.323 (0.273) (0.404)	1.035 (0.359)** (0.301)***	0.946 (0.415)** (0.414)** 0.236 (0.607) (0.627)
Cohort FEs Education track FEs Demographic controls Std. dev. of dep. var. Observations Data source	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes
	1.575	1.575	2.757	2.757
	327	327	327	327
	Taiwan Soc	ial Change Survey	y - National Id	entity (2013)

Notes: Treat is a dummy that is one if the respondent has received regular-track high school education. Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). Demographic controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and respondent hometown city fixed effects. College is a dummy that is 1 if the individual has received tertiary education. Sample bandwidth: [-6,+4] cohorts around the reform. * p < 0.1, *** p < 0.05, **** p < 0.01.

Table B5: Robustness to restricted samples

	Taiwanese (0, lo	w - 10, high)	Chinese (0, low	7 - 10, high)
Mean of dep. var	(1) 8.905	(2) 8.905	(3) 2.507	(4) 2.525
$Treat \times Post$	0.780	0.695	1.017	1.154
Cluster SEs: Education track Cluster SEs: Treat \times Cohort	(0.369)* (0.170)***	(0.373)* (0.165)***	(0.526)* (0.324)***	(0.529)* (0.342)***
Donald-Lang Aggregate Est. Donald-Lang Newey–West SEs	0.819 (0.195)***	0.724 (0.191)***	1.064 (0.383)**	1.171 (0.367)**
Cohort FEs Education track FEs	Yes Yes	Yes Yes	Yes Yes	Yes Yes
Demographic controls	Yes	Yes	Yes	Yes
Sample	Abnormal years of schooling excluded	High school graduates and above	Abnormal years of schooling excluded	High school graduates and above
Std. dev. of dep. var.	1.568	1.575	2.796	2.784
Observations	301	288	301	288
Data source	Taiwan Social	Change Surve	ey - National Iden	tity (2013)

Notes: Treat is a dummy that is one if the respondent has received regular-track high school education. Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). Demographic controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and respondent hometown city fixed effects. Sample bandwidth: [-6,+4] cohorts around the reform. For Donald-Lang 2-step estimators, there are 2 groups (treatment and control) and 10 cohorts; the Newey-West method further adjusts standard errors for auto-correlation (with maximum lag set at 3 cohorts). * p < 0.1, *** p < 0.05, **** p < 0.01.

Table B6: Robustness to Ordered Probit estimation

	Taiwanese (0	0, low -10, high)	Chinese (0, low -10, high)		
	(1)	(2)	(3)	(4)	
Mean of dep. var	8.892	8.892	2.435	2.435	
$Treat \times Post$	0.383	0.547	0.555	0.482	
Cluster SEs: Education track	(0.288)	$(0.330)^*$	(0.229)**	$(0.198)^{**}$	
Cluster SEs: Treat \times Cohort	(0.091)***	$(0.182)^{***}$	$(0.110)^{***}$	$(0.118)^{***}$	
Cohort FEs	Yes	Yes	Yes	Yes	
Education track FEs	Yes	Yes	Yes	Yes	
Demographic controls		Yes		Yes	
Pseudo R^2	0.041	0.105	0.030	0.053	
Std. dev. of dep. var.	1.575	1.575	2.757	2.757	
Observations	327	327	327	327	
Data source	Taiwan Soci	al Change Survey	y - National Id	entity (2013)	

Notes: All coefficients are estimated using Ordered Probit regressions. Treat is a dummy that is one if the respondent has received regular-track high school education. Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). Demographic controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and respondent hometown city fixed effects. Sample bandwidth: [-6,+4] cohorts around the reform. *p < 0.1, *** p < 0.05, **** p < 0.01.

Table B7: Reactions of parents and teachers

	Awareness of others' national ideology		Teachers' perceptions and reaction			
	(1) Parents (binary)	(2) Colleagues and friends (binary)	(3) Adherence to textbooks (binary)	(4) Changes in teaching practice (binary)	(5) Time invested in lesson preparation per day	(6) Time invested in other teaching activities per day
Mean of dep. var	0.696	0.706	0.475	0.483	3.637	3.119
$Treat \times Post$	0.180 (0.038)***	-0.080 (0.059)	-0.036 (0.092)	-0.051 (0.089)	-0.216 (0.352)	0.033 (0.296)
\times Non-native parents	0.486 (0.109)***	-0.120 (0.099)				
Cohort FEs	Yes	Yes	Yes	Yes	Yes	Yes
Education track FEs	Yes	Yes	-	-	-	-
Teacher FEs	-	-	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	-	-	-	-
Lower interaction terms	Yes	Yes	-	-	-	-
Data source	TSCS - National Identity (2013)		Taiwan Education Panel Survey (TEPS, 2005-2007)			
Std. dev. of dep. var.	0.461	0.309	0.500	0.500	1.798	1.687
Observations	327	327	1,652	1,652	1,652	1,652

Notes: In Columns (1) - (2), Treat is a dummy that is one if the respondent has received regular-track high school education, and Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). In Columns (3) - (6), Treat is a dummy that is one if the teacher works in the regular-track high school system, and Post is a dummy that is one for the 2007 wave (post-curriculum-reform). Demographic controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and respondent hometown city fixed effects. Sample bandwidth: [-6, +4] cohorts around the reform. Standard errors in parentheses are clustered at the educational track level in Columns (1) - (2) and at the school level in Columns (3) - (6). * p < 0.1, ** p < 0.05, *** p < 0.01.

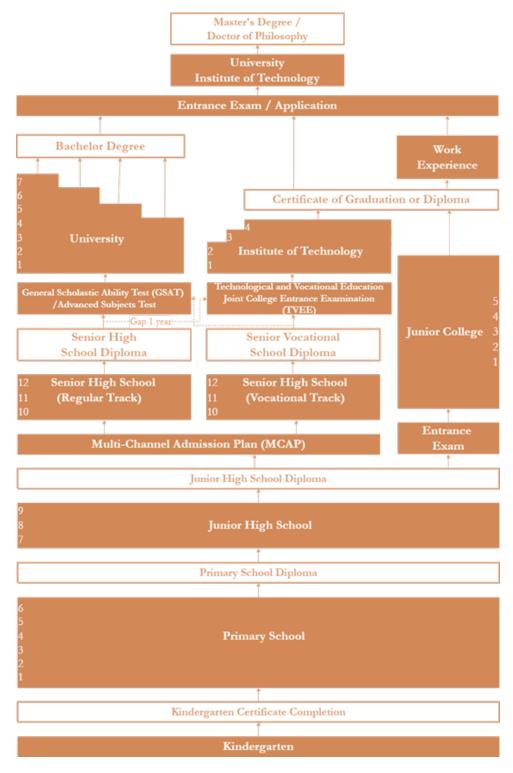
Table B8: National identity comovement – heterogeneity

	Both Taiwanese and Chinese recognition			
Mean of dep. var	(1) 0.193	(2) 0.267	(3) 0.193	(4) 0.267
$Treat \times Post$				
× Parent: pro-independence Cluster SEs: Education track Cluster SEs: Treat × Cohort	0.201 (0.017)*** (0.091)**	0.318 (0.022)*** (0.096)***		
× Parent: anti-independence Cluster SEs: Education track Cluster SEs: Treat × Cohort	0.160 (0.067)** (0.116)	0.252 (0.049)*** (0.105)**		
× Hometown city: "green" (pro-independence) Cluster SEs: Education track Cluster SEs: Treat × Cohort			0.174 (0.092)* (0.116)	0.198 (0.090)* (0.101)*
× Hometown city: "blue" (anti-independence) Cluster SEs: Education track Cluster SEs: Treat × Cohort			0.164 (0.046)*** (0.107)	0.344 (0.026)*** (0.094)***
Cohort FEs	Yes	Yes	Yes	Yes
Education track FEs	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes
Lower-order interaction terms	Yes	Yes	Yes	Yes
Cutoff (identity strength)	Mean	Median	Mean	Median
Std. dev. of dep. var.	0.396	0.443	0.395	0.443
Observations	327	327	327	327
Data source Taiwan Social Change Survey - National Identity (2				al Identity (2013)

Notes: The dependent variable is a binary that is one if the reported strength of each identity is above its corresponding cutoff (the group mean or median), which captures whether an individual simultaneously exhibits strong recognition of both identities. Treat is a dummy that is one if the respondent has received regular-track high school education. Post is a dummy that is one if the respondent is in post-September-2006 school entry cohorts (after the curriculum reform). Demographic controls comprise gender, father ethnicity fixed effects, mother ethnicity fixed effects, and respondent hometown city fixed effects. "Cutoff" refers to the within-group (by Treat) statistic to define the strength of identity as "strong" or "weak". Sample bandwidth: [-6,+4] cohorts around the reform. * p < 0.1, ** p < 0.05, *** p < 0.01.

[Back to Page ??]

Appendix C Education system in Taiwan



Notes: This figure provides a visualization of the Taiwanese education system to provides necessary information for our empirical context. Not all study patterns are included.

Appendix D Historical events

The 228 Incident. On February 28, 1947, a mass movement against autocracy and dictatorship broke out in Taiwan. The main reasons for this uprising were the corruption of the military, the shortage of commodities, and severe unemployment. The masses employed measures like strikes and marches to revolt against the government, but were finally suppressed by the military and failed to achieve the goal of democracy. The blasting fuses and evolvement of the 228 Incident are presented in detail in both the 88 and 95 curricula.

<u>The Formosa Democratic Movements.</u> Taiwan was effectively a one-party state under the governance of the *Kuomintang* (KMT) before the 1990s. The Formosa democratic movement was an organized and prepared political contest between Taiwan's non-party forces and the KMT authorities that broke out in December 1979. The movement caused dramatic impacts on the political and cultural ideologies of Taiwanese society, highlighting the demand for diversification and liberalization. The movement formed the basis for the present-day *Democratic Progressive Party* (DPP), the head of the "Green" coalition. The discussion about the Formosa movement has been markedly increased in the 95 curriculum.

The creation of the Republic of China (ROC). On January 1, 1912, the establishment of the ROC marked the end of the Qing dynasty, and Sun Yat-sen was elected the first president. The establishment of the new regime was brought about by the collapse of Qing Dynasty and the invasion of capitalist powers. In both the 88 and 95 curricula, the revolution to overthrow the old ruler and the ideologies advocated by the new government are introduced.

The victory of the Second Sino-Japanese War (World War II). On August 15, 1945, Japan's unconditional surrender marked the victory of the eight-year-long Second Sino-Japanese War. In this war, the KMT and the *Chinese Communist Party* (CCP) cooperated efficiently, in which the KMT fought on the front battlefield and the CCP was on the battlefield behind the enemy. The evolvement and background of the Second Sino-Japanese war are elucidated in both the old and new curricula from a perspective in which Mainland and Taiwan island constitute an entity to combat invaders (but the new curriculum treats Mainland China as a detached regime and emphasizes more the innermost role of Taiwanese roots).

Appendix E Taiwanese general elections

2012 Taiwanese General Election								
Tsai Ing-wen (蔡英文)		Ma Ying-jeou (馬英九)	James Soong (宋楚瑜)					
Nominee								
Party	Democratic Progressive Party (DPP)	Kuomintang (KMT)	People First Party (PFP)					
	Su Jia-chyuan	Wu Dun-yi	Lin Ruey Shiung					
Running mate	(蘇嘉全)	(吳敦義)	(林瑞雄)					
Popular vote	6,093,578 (45.63%)	6,891,139 (51.60%)	369,588 (2.77%)					
Eligible voters: 18,086,355; Turnout: 13,452,016 (74.38%)								
	2016 Taiw	anese General Election						
	Tsai Ing-wen (蔡英文)	Eric Chu (朱立倫)	James Soong (宋楚瑜)					
Nominee								
Party	Democratic Progressive Party (DPP)	Kuomintang (KMT)	People First Party (PFP)					
Running mate	Chen Chien-jen (陳建仁)	Wang Ju-hsuan (王如玄)	Hsu Hsin-ying (徐欣瑩)					
Popular vote	6,894,744 (56.12%)	3,813,365 (31.04%)	1,576,861 (12.83%)					
Eligible voters: 18,782,991; Turnout: 12,448,302 (66.27%)								
Political stance	Taiwan-centric ideology and independent nationhood Ensuring cross-strait stability	Recognizing the "1992 Consensus" ("one China principle") but differing in its interpretation Promoting cooperation and ties with Mainland	Maintaining the status quo, sticking to the Constitution (neither "Blue" nor "Green") Seeking for sustainable and peaceful development					