Civic Reasoning and Discourse Across The Curriculum

INTRODUCTION TO THE PRACTITIONER REPORT SERIES

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Defining Civic Reasoning and Discourse

"Early in its work, the National Academy of Education Committee on Civic Reasoning and Discourse agreed on a shared definition of civic reasoning and discourse to guide the development of the report. The central question guiding the formulation of this definition concerns 'What should we do?' and the 'we' includes anyone in a group or community, regardless of their citizenship status. To engage in civic reasoning, one needs to think through a public issue using rigorous inquiry skills and methods to weigh different points of view and examine available evidence in search of an equitable solution or resolution. Civic discourse concerns how to communicate with one another around the challenges of public issues in order to enhance both individual and group understanding. It also involves enabling effective decision making aimed at finding consensus, compromise, or in some cases, confronting social injustices through dissent. Finally, engaging in civic discourse should be guided by respect for fundamental human rights, and knowledge of history" (Lee et al., 2021b, p.1).

INTRODUCTION

Education plays a central role in preparing young people to engage thoughtfully in civic and community issues and to wrestle with complex dilemmas in the public domain. As a democracy, our system of governance offers multiple pathways through which people living in the country can influence how civic issues and dilemmas are addressed. Historically, such preparation has been viewed as the purview of K–12 civics courses and U.S. history courses. However, *Educating for Civic Reasoning and Discourse* (Lee et al., 2021b) from the National Academy of Education articulates a broader view. It argues that the multiple dimensions of civic reasoning and discourse require explicit attention across all the subject matter areas taught in U.S. schools and at every level of K–12 education (see Box A for definition of civic reasoning and discourse).

To illustrate civic learning across subject-specific content areas, we present a collection of practitioner reports addressing teaching practices in five areas of learning: 1) mathematics; 2) science; 3) literacy; 4) history and social studies; and 5) digital citizenship education. Undergirding these reports is the assumption that engaging students in the development of civic-related knowledge, skills,

dispositions, and ethics across academic disciplines is important for students' civic preparation.

Designed for teachers, school and district leaders, and disciplinary practitioner organizations, these reports offer guidance and exemplars of instruction to illustrate how teachers can design lessons that meet both the demands of disciplinary learning and the needs of civic engagement.

These approaches take to heart the necessity for learning activities to contribute to youths' development of democratic values, intellectual capacities, and the ability to navigate differences in perspectives in search of a common good. The reports also take into account the different stages of cognitive, biological, and social–emotional development of young people and offer examples of lessons across grade levels.

This introduction provides an overarching framing for the series of five practitioner reports. It provides a description of essential components of civic reasoning and discourse; next, it reviews relevant research on learning and development, brain development, and classroom climate that facilitates students' development of civic capabili-

ties. Finally, this introduction provides recommendations to strengthen civic learning across K–12 classrooms.

ESSENTIAL COMPONENTS OF CIVIC REASONING AND DISCOURSE

Civic reasoning involves several essential components, including knowledge and skills, epistemology, dispositions, and ethics. In addition, preparing young people to engage in civic reasoning should be informed by students' developmental needs and how learning settings can support youth development. Below, we define these essential components, and we recognize that they are interwoven and enacted together when youth engage in civic reasoning and discourse.

Knowledge and Skills.

Virtually every civic issue and dilemma with which we wrestle in the civic domain requires knowledge. This includes knowledge of systems of governance, particularly when addressing problems that might invoke potential changes in public policies, laws, and institutional practices. At the same time, other disciplinary knowledge often needs to be brought to bear in order to reason rationally. For example, when thinking through the complexities of the COVID-19 pandemic, knowledge of viral mutations; mathematical data displays; the history of prior pandemics in the United States and the world (e.g., the Influenza Pandemic of 1918–1919); and the history of the country's debates over the

authority of federal, state, and local governments in relationship to individual rights are all highly relevant to inform public actions.

Knowledge has many dimensions, including conceptual, procedural, and episodic (National Academies of Sciences, Engineering, and Medicine, 2018; National Research Council, 2000). Conceptual knowledge involves big ideas that serve as explanatory models of phenomena. Procedural knowledge involves skills and strategies for solving problems. Equally important is episodic knowledge and the psychosocial development that results as students experience the learning process and the feeling of knowing and doing. This includes the narratives students construct of the affective, social, and cultural experience of thinking and being in a particular problem space, and the values and beliefs that motivate the work and organize young people's development. Table 1 (p.3) illustrates examples of each kind of knowledge in the disciplines of mathematics, science, history and social studies, and literacy.

In addition to knowledge, the ability to understand and wrestle with complex civic issues and dilemmas requires the development of skills such as collaboration, perspective-taking, and communication. It is also increasingly important for young people to be able to evaluate information and separate fact from opinion (Torney-Purta & Amadeo, 2013). Furthermore, cognitive growth during childhood and adolescence allows young people to think in deeper and more complex ways and to develop strategies to enhance their learning. In other words, youth develop an ability to think about their thinking—that is, metacognition. The development of metacognitive skills gained through meaningful inquiry-oriented learning enables students to reflect, ask questions, build upon prior knowledge, form deeper conceptual understanding of complex phenomena, and apply their skills to address civic issues and social problems (Darling-Hammond et al., 2020; Lee et al., 2021a; National Academies of Sciences, Engineering, and Medicine, 2018; National Research Council, 2000, 2005, 2012).
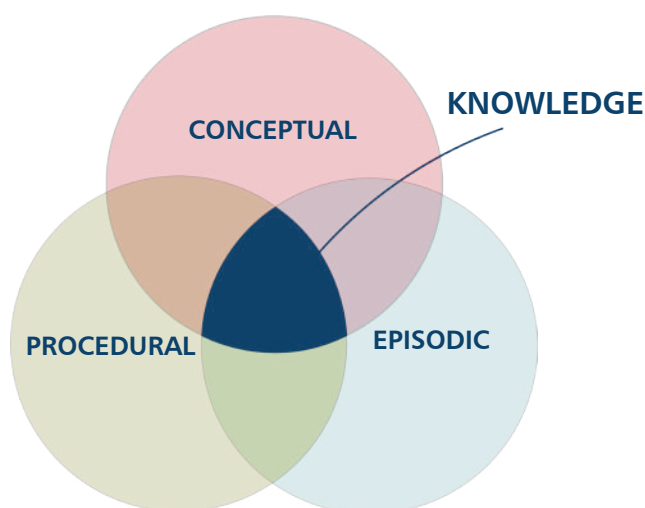
	Conceptual	Procedural	Episodic
Mathematics	• Properties of whole numbers and fractions	• Skills for analyzing data displays • Formula for adding or subtracting fractions • Procedures for deriving and comparing group averages	• Noticing patterns, quantities, and spatial orientations in the world around us • Building understanding of complex issues through mathematically interrelating quantities
Science	• Understanding of scientific methods as ways to investigate and build knowledge • Knowledge of water cycle on Earth	• Procedures for logging observations (e.g., testing hypotheses related to water pollution)	• Building emotional connection to the natural world, and developing curiosity about the workings and interdependencies of natural systems
History and Social Studies	• Knowledge of democratic institutions and processes	• Strategies for distinguishing facts from opinions	• Constructing a felt sense of connection to others from past and present; representing humanity as continuous and interdependent
Literacy	• Understanding of how elements of literature operate (e.g., themes, character type, symbolism)	• Strategies for comprehending main ideas	• Developing dispositions to engage with narrative as a form of meaning-making as well as cultural and self-exploration and expression

Note. Table 1 caption: **Table 1** Examples of Conceptual, Procedural, and Episodic Knowledge in Subject Matter Areas

Epistemology.

Epistemology is the study of knowledge, what constitutes knowledge, and how one evaluates knowledge (Chinn et al., 2011; Hofer & Pintrich, 2004). Epistemology also involves the criteria used to assess whether evidence put forth to evaluate claims is considered valid. The view that only scientific experimentation produces knowledge, which is objective and clear, would be one epistemology. However, the epistemological position defended in this project values complexity and dynamics (versus accepting simplistic and linear ways of thinking about issues). It also favors a willingness to be open to new experiences and to examine one's existing assumptions when confronted with perspectives that are different from one's own. Moreover, it entails a growth mindset (Dweck, 1999; Dweck & Leggett, 1988; Yeager & Dweck, 2020). People who believe that intelligence is fixed often do not believe that effort matters. A recent study found

that students who perceived that their teachers held a growth mindset (versus fixed) reported positive experiences in their classrooms (Kroeper et al., 2022).

The problems we face in the public domain, and indeed in our private lives, are complex. In the case of the COVID-19 pandemic, many competing dimensions of the problem cannot be addressed with simplistic ways of thinking—from economic considerations to physical safety to scientific advances and equity. Because of this mosaic of factors, robust learning in each academic content area requires valuing complexity and embracing uncertainty.

Complex problems in the civic domain, whether contemporary or historical, can be addressed most fully when individuals and communities are disposed to study and expand the knowledge they bring to the problem, and are willing to acknowledge what they do not know or where an alternative perspective might exist.

In addition, we live in a historical moment where information is abundantly available particularly through digital resources, but this information can be biased or even maliciously falsified. Epistemology is important as students learn to examine digital outlets critically for hidden agendas and misinformation.

Dispositions.

Dispositions entail the habits of mind and approaches that people bring to a situation or learning setting (Stitzlein, 2021). Preparing students to engage in civic reasoning and discourse requires the development of several key dispositions, including questioning, weighing competing evidence, valuing complexity and multiple points of view, and empathizing.

One important disposition is that of questioning—this includes asking good questions that are motivated by a sincere desire to understand, not assuming or thinking you already know the answers, and genuinely being open to and interested in what you may not yet know. Another important disposition is the tendency to weigh competing evidence—to take into account what one knows from multiple sources, and to think rigorously about

the quality of evidence in support of a point, while maintaining critical awareness of what one hopes or fears to be true. Relatedly, civic reasoning and discourse also include examining multiple points of view, which entails first recognizing that there are multiple points of view and perspectives on an issue and then seeking to explore and understand an issue from a range of perspectives as well as taking the perspective of others who may have different backgrounds, experiences, and needs.

To develop the habit of listening deeply and sincerely to others and seeking to understand and respect different perspectives, teachers should help students cultivate emotional regulation and self-awareness, in conjunction with developing cognitive capacities for managing complex and sometimes contradictory information.

Ethics.

Finally, civic reasoning and discourse need to be guided by ethics. Founding documents of the U.S. government articulate a vision of a moral commitment to a sense of a common good:

> We the People of the United States, in Order to form a more perfect Union, establish justice, insure domestic Tranquility, provide for the common defense, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America. (U.S. Constitution)

> We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness. (U.S. Declaration of Independence)

While realizing the promise of these words is still a work in progress, they illustrate an ethical framing for how we can relate to one another and how we take up the work of stewarding the common good.

At the core, ethics involves a systematic, values-driven search for solutions and systems that promote what is good, right, and just and avoid

what causes harms or inequity, now and into the future. While there are egregious examples of failing to live up to the standards set out in the Constitution (e.g., participating in the trade of enslaved persons, not allowing women full rights), the role of ethics in how we participate in our democracy is, and has always been, critical.

Children's capacity for reasoning and debating about ethical questions in the public domain progressively develops from a young age. Even during the preschool years, children have a basic understanding of fairness and what is considered right and wrong (Turiel, 2006, 2015). Additionally, young children are "hard-wired for social interaction involving collaboration and reading the emotions of others" (Lee et al., 2023, p. 14). As children develop, both in the cognitive and social domains, so too do their capacities for more complex moral reasoning and judgments (Corsaro, 2020; Kohlberg, 1974; Lee et al., 2021a; Nasir & Kirshner, 2003; Piaget, 1932). Most adolescents and young adults are able to think more systemically and to reason about morality in ways in which they can consider the

greater good and think beyond individual rewards and punishments (Kohlberg, 1974).

LEARNING, BRAIN DEVELOPMENT, AND SOCIAL-EMOTIONAL GROWTH

In addition to providing students with opportunities for the development of the components of civic reasoning and discourse, robust teaching should be informed by the research on how people learn and brain development that undergirds learning. The practitioner reports reflect an ecological perspective on learning and development (Bronfenbrenner, 1979; Osher et al., 2017, 2020)—that is, learning and development are embedded in cultural contexts and are bi-directional, with students both shaping and being shaped in the learning environment (i.e., classroom) (Lee et al., 2023; Nasir et al., 2020).

What Do We Learn from Research on Learning and Development?

Osher et al. (2020) argue that learning is a dynamic, "constructive enterprise shaped by ongoing, reciprocal interactions between children's biology, their

> " Children's capacity for reasoning and debating about ethical questions in the public domain progressively develops from a young age. "

developing brains and their physical and social contexts, with the latter playing a defining role" (pp. 6–7). Young children learn by exploring their physical environments, interacting with others, and engaging with tools such as books and technology. They learn from experiences in the world, which they take in through senses such as seeing, hearing, touching, and smelling (Kitayama & Park, 2010; Lee et al., 2021a).

Children learn to make sense of these experiences by extrapolating features that serve as models of phenomena called schema (Bartlett, 1932). They then use those schema as efficient models to make predictions about new experiences. They have schema about the natural world as well as the social world. The effort to make sense of experiences is influenced by the extent to which they attribute a sense of relevance and self-efficacy to those experiences—that is, emotionally how they experience engagement in activity. Thus, knowledge—specifically prior knowledge—and perceptions of the self and emotions intersect to build new knowledge (Lee et al., 2021a).

Self-efficacy refers to one's belief in one's own ability to succeed or do well in a task or in an environment (Bandura, 1997; Schunk & Pajares, 2009). The need to feel efficacious—that one matters to others and that one makes an important contribution with one's skills and talents—is a key aspect of a successful learning environment. Because students learn in social and cultural settings, it is critical that learning enables students' connections to their unique identities, to the groups they belong to, and to the ways they see themselves and experience their connections to others. Students have a developmental need to feel connected to others and to feel competent, and they thrive in environments where they feel a sense of belonging and where they feel valued.

Embedded in that sense of self-efficacy and belonging, and especially salient during adolescence and young adulthood, are the constructs of identity and self-concept that also follow a developmental trajectory. That is, younger children's self-concepts and identities tend to be more concrete and role-oriented whereas adolescents' identities are more abstract and multidimensional (Erikson, 1968). Students' identities, self-concepts, and self-efficacy are related to their motivation to learn. The context within which that learning occurs, especially the perceived classroom climate, is essential to the development of knowledge and skills, epistemology, dispositions, and ethics.

Of course, the ways students engage in learning are shaped by their developmental stage, which shows variability across demographics and cultural contexts and is dynamic across situations, but is loosely associated with age (Lee, 2017; Rogoff, 2003). At each developmental stage, individuals engage in knowledge and skill building in characteristic ways that reflect cognitive and social–emotional growth and that are enabled by neurobiological maturational processes. Accommodating these characteristic ways of learning is essential for developmentally appropriate curriculum and instruction.

What Do We Learn from Research on Brain Development?

In late infancy and the preschool years, sensory and motor systems of the brain are becoming more efficient and interconnected. These include regions involved in language and social communication; emotional expression, perception, and regulation; and movement of one's body through space to explore surroundings, manipulate objects, and interact with others in order to construct simple concepts and cause–effect reasoning (Immordino-Yang, 2011, 2015; Immordino-Yang et al., 2019; Lee et al., 2023).[1]

Across the elementary school years, association regions of the brain are developing, enabling children to integrate information from different senses and sources in order to build conceptual understanding of social, emotional, and cognitive contexts to make more explicit predictions about the future, and to formally represent their knowledge and understandings to others through language, arts, emotions, and other forms of communication and representation.

[1] See also the American Educational Research Association Ed-Talk "Learning with an Emotional Brain," by Mary Helen Immordino-Yang: https://www.youtube.com/watch?v=DEeo350WQrs

Through the middle school years and the transition to high school, brain regions involved in emotional rewards, sensitivity to social interactions and reputation, and higher-order thinking are maturing. These enable new, initially fragile capacities for emotion regulation and long-term planning, as well as in-depth interests, a focus on identity and self-aware-ness, and abstract thinking (Immordino-Yang et al., 2019; Lee et al., 2023).

In high school and into the college and early adult-hood years, the brain networks interconnecting association areas continue to mature and stabilize, which supports increasingly complex cultural, ethical, and scholarly thinking about how and why the world works and how it could work differently. Across development, but especially in adolescence and young adulthood, individuals have a strong de-velopmental need for deep social connections that facilitate contributions to one's group; a sense of self-efficacy around building ideas and beliefs; and, as one transitions to adulthood, a need to establish a culturally grounded sense of life purpose (Immor-dino-Yang et al., 2019; Lee et al., 2023).

What Do We Learn from Research on Classroom Climate?

Human learning and development are interactive processes in which individuals and their environ-ments mutually and dynamically shape each other. This interactive process occurs between and among individuals as well as between an individual and societal institutions. For children and adolescents, the school and the classroom are extremely influential settings for their cognitive, social, and psychological growth as well as for the development of their civic reasoning and discourse capabilities (Osher et al., 2020).

The interactions within the classroom, or the classroom climate, have been studied widely. A meta-analysis of classroom climate research—a multidimensional construct—found positive rela-tionships between classroom climate and students' academic and psychosocial outcomes (Wang et al., 2020). A review by White and Schoenfeld (2024) finds that classroom climates that affirm students'

unique identities are essential to the development of learner agency and deeper conceptual knowledge. Furthermore, there is a substantial amount of evidence connecting civic-related learning outcomes to the classroom and school environment in which they occur. More specifically, research evidence has found that when a classroom climate is conducive for open discussions and supports a respectful environment even when disagreements happen, students can develop the knowledge, skills, and dispositions they need for civic reasoning and discourse (Barber et al., 2021).

RECOMMENDATIONS

Based on the components of civic reasoning and discourse and the research on learning and develop-ment, the following recommendations are provided to strengthen the development of students' civic reasoning and discourse.

- **Enhancing students' capabilities for civic reasoning and discourse involves the development of several key components, including knowledge, skills, epistemology, dispositions, and ethics.** Complex challenges in the public domain necessitate *knowledge* across content areas; *skills* to analyze, collaborate, and communicate; *epistemology* to evaluate evidence and claims; *dispositions* to value complexity and different perspectives; and *ethics* to guide decisions that are right and just.

- **Preparing young people for civic reasoning and discourse necessarily involves learning across subject matter areas.** The ability for civic reasoning, discourse, and complex problem-solving in the public domain is best informed by knowledge and skills gained across subject matter disciplines. In addition to social studies, other core subject areas offer deep learning opportunities for students to expand both the breadth and depth of their knowledge and engage in reasoning on a wide range of complex civic issues.

- **Civic learning should reflect learners' cognitive, biological, and psychosocial development.** Students' senses of identity, self-concept, self-efficacy, and moral development are key elements in their learning and follow developmental trajectories. Attending to these areas of development affirms students' identities and strengthens their agency to engage with learning contents.

- **The everyday lives of young people provide opportunities for students to learn, develop, and practice civic reasoning and discourse. Therefore, civic-related instruction should connect to personally meaningful areas of civic inquiries.** Civic learning in school necessarily involves students' everyday knowledge and skills through drawing connections between students' experiences outside of school and the explorations of formal knowledge and skills in schools and classrooms. Students learn best when the content is interesting, engaging, and relevant to their lives. Connecting learning to the goals and identities of learners provides powerful spaces of intellectual engagement, social negotiation, and connection.

- **Students learn best in environments characterized by an open and welcoming climate for discussion that promotes a sense of safety and belonging. Furthermore, civic instruction should be designed in ways that support students in feeling efficacious in** their abilities to carry out intellectual work. This involves constructing learning tasks with multiple entry points, being mindful of learning progressions, and orchestrating safe opportunities to build on and apply a diverse range of students' prior knowledge and experiences as well as new learning. Authentic learning, which focuses learning on relevant real-world problems, is fostered in learning spaces where learners feel safe, personally connected, and valued, and where identity threats are minimized. Supporting students' strong and caring social relationships with teachers and peers facilitates a sense of safety and belonging.

- **Civic learning should invite students to explore complex issues to foster their understanding of the role of ethics in civic problem-solving.** Young people, and adolescents in particular, have a strong sense of justice and ethics, and this sense is tied to their budding construction of identity, self-concept, and moral development. Children, even at an early age, are capable of having a basic understanding of fairness and distinguishing right from wrong. By adolescence, individuals are capable of more complex moral reasoning. Engaging with complex topics explicitly will help students build on their intuitive understandings of rights and justice, while also building the necessary capacities and dispositions to think deeply about issues. ▪

The practitioner reports that follow illustrate the key components of civic reasoning and discourse as well as the recommendations with concrete examples across subject matter areas. The reports are the product of collaborations between scholars who study learning and practitioners who are content area experts. For each report, an effort was made to consider the developmental spectrum to offer examples at the elementary, middle, and high school levels. However, these are but a few examples of the kinds of lessons, approaches, and activities that embody the recommendations outlined in this introduction and that will prepare young people to engage in civic reasoning and discourse. We encourage teachers to draw on their own deep content knowledge and knowledge of their students to expand this repertoire, connecting concepts and skills to students' lived experiences, current events, and community issues.

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