



December 2023

INTEGRATED LEARNING, INTEGRATED LIVES: HIGHLIGHTING OPPORTUNITIES FOR TRANSFORMATIVE SEL WITHIN ACADEMIC INSTRUCTION



SOCIAL AND EMOTIONAL LEARNING INNOVATIONS SERIES

By Heather N. Schwartz, Dr. Ally Skoog-Hoffman, Dr. Joe Polman, Dr. Olivia Kelly, Dr. Josefina Bañales, Dr. Rob Jagers

INNOVATIONS SERIES OVERVIEW

The Collaborative for Academic, Social, and Emotional Learning (CASEL) is committed to supporting and advancing the field of social and emotional learning (SEL) to ensure that schools honor, challenge, and inspire the academic, social, and emotional growth and development of all students. SEL has emerged as a central feature of education and is even more important at a time in which our nation, local communities, adults, and young people are compelled to navigate heightened social tensions and traumas. While initial [research](#) studies have established the general benefits of SEL, the next phase of work should address the need for improvements and innovations to SEL policy, approaches, programming, and practices to increase the likelihood of maximum contributions to the well-being (Huppert, 2009; Fredrickson, 2001) of each and every young person and adult. We understand psychological well-being as inclusive of the constructs of positive emotions (happiness and/or contentment) and the development of purpose, while also fostering positive relationships with others. This series aims to help the field imagine new, more expansive and equitable approaches to SEL and wellness to ensure that all children, adolescents, and adults feel safe, supported, and seen so that they can thrive.

Throughout this series, we will share innovative conceptions, methods, and practices that embody SEL principles, along with aligned strategies that maximize learning and well-being for students at each setting level of CASEL's systemic SEL framework. CASEL takes a systemic approach to SEL implementation that emphasizes the importance of establishing equitable learning environments and coordinating practices across key settings of classrooms, schools, families, and communities to enhance all students' social, emotional, and academic learning. A systemic approach integrates SEL throughout the school's academic curricula and culture, across the broader contexts of schoolwide practices and policies, and through ongoing collaboration with families and community organizations. Each report in this series will highlight a key setting from CASEL's framework. This report focuses on engaging instructional practices that integrate SEL in classrooms. [Read the first report](#) on authentic partnership with families and caregivers. Reports focused on schools and communities will follow.

Within the CASEL framework, we will pay particular attention to research and understanding that is consistent with transformative SEL (tSEL), an approach that embodies an equitable, systemic orientation to SEL. We will share both current understandings about these practices and strategies and why they matter from a research and practice perspective. We will also provide case studies to help illustrate what these practices and strategies can look like in schools, families, and communities. We hope that the series will spark discussion around strategies, curricula, and action research agendas that lead to changes in mindsets, practices, and policies, with a focus on the centering of the voices and choices of students and their families.

ACKNOWLEDGMENTS

CASEL recognizes the generous support of the Bill & Melinda Gates Foundation and the Raikes Foundation in advancing the work that generated this report. We are deeply grateful for their support and collaboration.

The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of either foundation.

We'd like to thank our collaborators for their partnership in providing relevant content and highlighting case studies from the field.

Courtney Adams, Program Strategy Manager—Curriculum, The Nora Project

Dr. Alison Boardman, Associate Professor, University of Colorado, Boulder

Katy Fattaleh, Director of Programs, The Nora Project

Dr. Miranda Fitzgerald, Assistant Professor, University of North Carolina at Charlotte

Dr. Jen Newton, Associate Professor, The Ohio State University



TABLE OF CONTENTS

Introduction	5
Framing SEL With Academic Integration	7
How Learning Happens	9
The CASEL Program Guide: Evolving With the Field	10
Transformative SEL (tSEL)	12
Inquiry-Based Learning Develops Student SEL	13
Project Based Learning (PBL)	14
Research and Theoretical Foundations	14
Youth Participatory Action Research (YPAR)	15
Research and Theoretical Foundations	16
PBL and YPAR Through a tSEL lens	17
Conditions for Educators to Enact Inquiry-Based Learning Through the Lens of tSEL	23
Implications for Teacher Education	25
Inquiry-Based Learning Develops Student SEL	25
Case Study 1: STEMpathy	27
Case Study 2: Compose Our World	28
Case Study 3: The Restorative Justice Project Advisory Committee	30
Conclusion	33

INTRODUCTION

This is the second report in a series exploring innovations in SEL. The series is aligned with CASEL's framework for systemic SEL, which identifies four key settings where students and adults live and learn: classrooms, schools, families, and communities. **The purpose of this second report is to highlight the importance of systemic, integrated SEL in classrooms.**

Over the past decade, there has been increased acknowledgement of the central role SEL plays in the growth and development of young people. The importance and complexities of SEL have become more evident in the past three years as society continues to grapple with the role of schools and PreK-12 education in ongoing public health and civic challenges. As schools and communities seek to recover from three years of disruption and to support students socially, emotionally, and academically, many more introduced or expanded SEL implementation. [Thousands of schools](#) within and outside the United States have implemented SEL programming, some using new federal, state, and local funding newly granted for this purpose (Schwartz et al., 2022). This is not unwarranted.

A large body of research has demonstrated the effectiveness of SEL programming for supporting students' academic and long-term success and enhancing young people's coping skills, resiliency, and emotion identification (Bierman et al., 2002; Cipriano et al., 2023; Hawkins et al., 2008; Taylor et al., 2017). Most of this research has focused on what Cipriano and colleagues (2023) call USB SEL, that is, universal school-based interventions provided to all students to support the development of inter- and intra-personal competencies. However, some have adopted a narrow definition of what social and emotional programming can look like, implementing SEL as a stand-alone, separate program that is not meaningfully integrated throughout the day. We propose that when done thoughtfully and with a lens towards equity, meaningful inclusion, and excellence, integrated approaches to SEL with academics provide robust and consistent opportunities for students to learn about and demonstrate SEL. While academic integration can occur many different ways, we focus on inquiry-based learning strategies as one promising approach.

What do PBL and YPAR look like in action?

To get a sense of what these two approaches look like in the classroom, consult the case studies of STEMpathy (PBL) from The Nora Project, Compose Our World (PBL), and The Restorative Justice Project Advisory Committee (YPAR) at the end of this paper. These case studies highlight the importance of social context, the role of young people and adults, and the structures necessary for implementation.



To do this, we briefly explore CASEL’s model for SEL before critically examining the literature around inquiry-based learning opportunities. An inquiry-based approach to instruction is a student-centered, active learning approach requiring students to engage in critical thinking and reflection around an issue or challenge. We focus on **two inquiry-based approaches to learning, Project-Based Learning (PBL) and Youth Participatory Action Research (YPAR), which show promise as examples of integrated, systemic approaches to SEL** by allowing students to be authors and co-designers in their own learning. Next, we explore the conditions necessary to enact inquiry-based approaches in the classroom. Lastly, we share a set of case studies illustrating what inquiry-based learning opportunities, specifically PBL and YPAR, can look like in practice. In this way, we seek to provide both inspiration and practical application for educators, program providers, and researchers looking to continue to move the conversation forward, integrate new strategies into their programs or practices, and expand their research agendas.

Throughout this report, we keep in mind the ways in which schooling contexts have traditionally and historically marginalized students from a variety of socio-economic and ethnic-racial backgrounds, compounded further for those students identified with disabilities or service and support needs. As such, we often refer to some students as being historically marginalized or as belonging to historically marginalized groups. This terminology is meant to recognize the marginalization that these groups (e.g., African-American/Black, rural, those with disabilities) have experienced but does not mean to erase the vastly different socio-historical experiences of these groups that shape their marginalization.



FRAMING SEL AND ACADEMIC INTEGRATION

SEL is the process through which young people and adults acquire and apply inter- and intra-personal social and emotional competencies that support them personally and professionally. Within our [definition of SEL](#) and throughout our work, we have elevated the importance of **systemic SEL** to align research, policy, and action (Mahoney et al., 2021). Systemic SEL implementation includes coordinating practices across key settings of classrooms, schools, families, and communities to enhance all students' social, emotional, and academic learning. CASEL's view of systemic SEL is visible within our **framework** (see figure 1). At the center are the five core social and emotional competencies—broad, interrelated areas that support learning and development. Circling them are four key settings where students live and grow: classroom, school, family, and community.

This paper focuses on the classroom level, where the goal is to foster supportive classroom environments wherein educators teach explicit SEL and integrate SEL throughout academic instruction by weaving deep academic learning with opportunities for students to understand their own emotions, empathize with diverse perspectives, solve problems constructively, and make decisions while considering the needs of others. This includes [fostering academic mindsets, aligning SEL and academic objectives, and using interactive pedagogy](#). When adults prioritize students' personal experiences and cultural backgrounds and seek their input, they create inclusive classroom environments where students are partners in building a community of learners where they can take the intellectual risks necessary to learn while also benefiting from the chance to build relationships with the teacher and other students (Farrington et al., 2012).



Despite research highlighting that SEL and academics are mutually reinforcing, including research from the National Commission on Social, Emotional, and Academic Development (Aspen Institute), the **field grapples with the tendency to see SEL as a siloed, stand-alone, and add-on activity**, and at times even as a trade-off with academic instruction. Explicit lesson-based SEL curricula have demonstrated effectiveness on a variety of student-level outcomes, but without further guidance, they can be too limited in scope and duration to integrate meaningfully with academics or shift classroom dynamics (Jones & Bouffard, 2012). This can lead to classrooms where SEL lessons may involve students exploring their identities, listening to peers, and expressing their own perspectives, but once the lessons end, it's back to "business as usual," with fewer collaborative learning experiences that provide opportunities for students to demonstrate and deepen their SEL competencies.

To truly harness the power of SEL to transform learning in schools, students need opportunities to practice SEL competencies throughout the day as they grapple with content, collaborate with peers, set meaningful goals, and communicate effectively, all within a supportive and challenging classroom environment. These experiences are part of a high-quality and equitable education, and there is promise that they will lead to improved academic and social-emotional outcomes for students (Dolfin et al., 2019; Finkelstein et al., 2010; Nichols-Barrer & Haimson, 2013; Moving Forward Institute, 2018, 2020; Rimm-Kaufman et al., 2021). This approach aligns with both inquiry-based learning and what the Learning Policy Institute (LPI) calls "deeper learning," defined as an approach that "develops students' abilities to think critically and solve complex problems, communicate effectively, work collaboratively, and learn independently." According to LPI, deeper learning includes opportunities to engage in both inquiry-based learning and SEL ([Learning Policy Institute, 2023](#)).

Unfortunately, as Jal Mehta and Sarah Fine point out in their book, *In Search of Deeper Learning*, these experiences of deeper learning are often seen as the domain of private, elite, or independent schools (Mehta & Fine, 2019, p. 11). In reality, all students will need new skill sets to be actively engaged citizens and meet the demands of work in a complex, ever-changing world. In 2015, the top three skills employers looked for were problem-solving, critical thinking, and creativity ([Curtin, 2017](#)). More immediately, ensuring that all students have access to rigorous and engaging learning opportunities deepens students' connection to school. This is critically important at a time when many districts are struggling with low attendance and engagement ([Mehta, 2023](#)).

But while the recent global health crisis may have deepened student disengagement, this critical concern for educators is not new. A 2015 Gallup poll of nearly one million U.S. students found that the longer students are in school, the less engaged they feel. In fifth grade, 75 percent of learners surveyed reported being engaged by school. By 11th grade, the number falls to 32 percent (Mehta & Fine, 2019). The reasons for this are varied, but the implications are clear: schools as they currently exist do not provide the engagement needed for all students to thrive.

It can be difficult to work against these conditions without a systemic approach. As Mehta and Fine describe, educators may feel compelled by outside forces or internal pressure to focus on the basics first, hoping to get to deeper engagement and more rigorous content at some undetermined point in the future. This is even more true for students facing systemic barriers, including students with disabilities, English Learners, Black students, and learners from other marginalized communities (Hammond & Jackson, 2015).

As one educator Mehta and Fine spoke to explained, there is a distinction between their colleagues who see “Bloom[’s taxonomy] as a ladder” and those who see “Bloom as web.”¹ Those in the latter category move between providing foundational content knowledge and allowing space for students to analyze, evaluate, and create. This may help ameliorate what Zaretta Hammond describes as an opportunity gap that comes from focusing on low-level basics at the expense of building independent learners. “For culturally and linguistically diverse students, their opportunities to develop habits of mind or cognitive capacities are limited or non-existent because of cultural inequity” (Hammond & Jackson, 2015, p. 13). These students are more likely to experience a “back-to-basics” curriculum with more rote learning.

To truly ensure that all students have access to these opportunities, across all demographics and academic levels, we need to approach instructional design with an equity lens. For example, to meet students where they are, allow for meaningful inclusion, and foster communities of belonging, we must ensure that there are various entry points for learning and participation. Educators will need to be prepared and empowered to offer appropriate scaffolding and support while keeping curiosity and exploration front and center. This requires educators to balance providing guidance to students and following their leads.

To ensure that academic integration strategies serve all students, we must also make sure that students are not pulled for other services during these critical learning times. These SEL experiences are part of academic instruction and not optional “nice-to-have” opportunities for some students. Each student, no matter their academic level, benefits from the opportunity to connect and collaborate as they solve problems, gain knowledge, and apply skills to deepen learning.

By integrating SEL and academics through inquiry-based learning, we commit to prioritizing the social, emotional, and academic needs of all students.



HOW LEARNING HAPPENS

Educational research points to the importance of systemic, integrated approaches to learning. This includes rich learning experiences and knowledge development, developmental relationships, and the integration of opportunities to learn about and practice social and emotional competencies. In addition, research highlights the importance of authentic tasks to support transferable learning (Learning Policy Institute & Turnaround for Children, 2021). These tasks often require that students utilize social and emotional competencies such as planning for

¹ Benjamin Bloom and collaborators published the Taxonomy of Educational Objectives, often referred to as “Bloom’s Taxonomy,” in 1956. This framework categorizes educational objectives along a continuum from foundational learning (“knowledge”) to higher-order thinking tasks (“evaluation”) and is represented as a pyramid. The taxonomy was updated in 2001. The continuum now moves from “remember” to “create.” (Retrieved from <https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/>)

sustained and complex investigations (self-management), communicating ideas effectively (relationship skills), and determining sources for academic support (social awareness). Conversations based on whether to prioritize academic learning or SEL miss the opportunity to strengthen both strategically.

Research also points to the importance of environments filled with safety and belonging to foster the academic mindsets and risk-taking associated with learning (Learning Policy Institute & Turnaround for Children, 2021). For example, understanding students' identities as assets to learning (Ladson-Billings, 2014) recognizes the power of self-awareness (identity) in the learning process and rejects positioning any one identity (e.g., white, heterosexual, cisgendered) as normative. Additionally, multiple scholars have pointed to the importance of supportive relationships, a cornerstone of Culturally Responsive Education and SEL, as a critical feature of learning generally (Farrington et al., 2012; Gay, 2002; Hammond & Jackson, 2015; Learning Policy Institute & Turnaround for Children, 2021; Search Institute, 2020).

In addition to the research literature, CASEL is learning through our [Collaborating Districts Initiative](#) (CDI). There are a number of CASEL CDI districts acting as models for rolling out systemic, integrated approaches to SEL. For example, Cleveland Metropolitan School District has a student advisory council that meets with the district superintendent each quarter to provide input regarding all relevant issues—from graduation rates to the district's widely used climate survey. In Nashville, the metro district's SEL, Equity & Diversity and Curriculum & Instruction departments have worked in concert to develop a model for academic instruction that focuses on elevating student voices. In Tulsa Public Schools, the [Tulsa Way for Teaching & Learning](#) supports culturally, socially, and emotionally inclusive classrooms by featuring equity at the center of the Relationships, Relevance, & Rigor framework (Schlund et al., 2020). Each of these approaches moves far beyond SEL as stand-alone or add-on lessons to a more ecological approach.

THE CASEL PROGRAM GUIDE: EVOLVING WITH THE FIELD

CASEL also identifies and learns from high-quality SEL programming through the [CASEL Guide to Evidence-Based Programming](#), which we created to help districts and schools select programs that meet their needs. We review high-quality SEL programs that demonstrate evidence of effectiveness, including those that integrate SEL and academics, and share those that meet our [rigorous criteria](#) in our online guide. For example, [EL Education](#)², which demonstrates evidence of effectiveness in grades 6-8, includes both an organizational approach to creating a positive school culture (for example through daily “crew” meetings) and an open source curriculum that integrates SEL and language arts through empowering instructional practices. [Reading With Relevance](#)³, which demonstrates evidence of effectiveness in grades 3 to 5, provides an academic integration approach that guides students and educators through the process of reading culturally relevant literature. Teachers are provided with lesson plans that guide students to read deeply, talk openly, and write reflectively with a lens towards both personal and academic growth and social justice.

² Results from a quasi-experimental evaluation found that students who participated in the program achieved significantly higher standardized test scores in reading compared to students in the control group. Results from a randomized control trial conducted over the 2014-2017 academic years using a cohort model found that students whose teachers received EL Education training demonstrated significantly positive social classroom behaviors.

³ Results from a quasi-experimental evaluation conducted in the 2017-2018 school year (unpublished report written in 2020) found that students who participated in the program had significantly higher student-reported behavioral school engagement and improvements in their perception of school safety. Results from another quasi-experimental evaluation conducted in the 2017-2018 demonstrated significantly higher reading ability scores compared to students in the control group.

Two other programs, [Connect Science](#)⁴, which demonstrated evidence of effectiveness in grade 4, and [PBLWorks](#)⁵, which demonstrates evidence of effectiveness in grade 12, use PBL specifically as a way to support and challenge students socially, emotionally, and academically. Connect Science integrates science content and SEL. In this project-based learning curriculum, students act as scientists by investigating local problems around energy, exploring options, implementing solutions, and evaluating impact. PBLWorks is another PBL program where students actively engage in real-world and personally meaningful projects. The program provides guidance for educators around relationship-building, scaffolding to meet the needs of all learners and co-creating shared agreements with students. While these are not the only programs that include elements of collaborative problem-solving and/or PBL, they come to mind as strong examples across grade levels.

Pedagogical strategies like PBL and YPAR can support SEL at a range of developmental levels—first, because they often rely on broad principles and guidance to be interpreted by educators, and second, because the input and guidance of students themselves play a substantial role in shaping the products and the processes of the work. Approaches like PBL and YPAR may be especially relevant for middle and high schoolers, who have a greater sense of their own autonomy and identity, and may be more receptive to programming that asks them to use their skills to make an impact than more didactic approaches (Ozer et al., 2021). As Ozer and colleagues ask, “Are SEL programs telling adolescents what to do rather than acknowledging and encouraging their growing capacities for metacognition and critical thinking by inviting them to take up skills, make decisions that align with their personal values, and work together to shape their ecological contexts?” (Ozer et al., 2021 p. 7).

Inquiry-based approaches that create opportunities for students to take the lead on issues such as risky sexual behavior may also help to alleviate what Yeager et al. recognize as a conundrum in the field of prevention implementation: High schoolers need both autonomy and guidance. Yeager and colleagues hypothesize that “compared to children, adolescents are more sensitive to whether they are being treated with respect,” and that didactic approaches to prevention may be off-putting (Yeager et al., 2018, p. 102). Education based on research conducted by, with, and for their peers may afford students this sense of status.

Currently, only 22 out of 85 programs in the CASEL Program Guide (26 percent) are designed and show evidence of effectiveness for high school students. Of these 22 programs, only 7 programs (32 percent) use either a teaching practice or academic integration approach (or both). While these numbers do not reflect where many wish the field would be, they have increased steadily over the years since our review began⁶. Given the evidence-base and the developmental appropriateness of weaving SEL into academic content areas, we hope that the trend continues towards providing the resources and curriculum to support students (and adults) to meet their unique social, emotional, and academic potential.

4 Results from a randomized control trial evaluation conducted in the 2017-2018 academic year (published in 2021) show students demonstrated significantly higher post-test science achievement and student-reported civic engagement, specifically energy attitudes and behaviors, than the students in the control group.

5 The results of a randomized control trial evaluation conducted in the 2007-2008 academic year (published in 2010) found that students who received the program had significant increases in self-reported academic self-efficacy, as well as higher economic literacy test scores compared to control group students.

6 Safe and Sound, CASEL’s first guide to evidence-based SEL programs, had 22 SELect programs. Of these, 10 were offered at the high school level.



TRANSFORMATIVE SEL (tSEL)

CASEL does not prescribe any [specific form of SEL](#)⁷ but encourages schools, families, and communities to work together to decide how best to implement, teach, and assess SEL based on the priorities, strengths, and needs of their local schools and communities. Throughout this paper, we will be looking at systemic, integrated SEL through the lens of one approach to SEL, transformative SEL (tSEL). As an approach, tSEL focuses on co-learning to critically examine root causes of inequity and to develop collaborative solutions that lead to personal, communal, and societal well-being (Jagers et al., 2021).

Key features of tSEL include being community- and culturally responsive and youth guided (Jagers et al., 2021). While still grounded in the CASEL competencies and systemic SEL, tSEL expands and deepens our understanding of SEL in service of equity and excellence; for example, by moving beyond relationship skills to ground student collaboration in justice-oriented citizenship (Jagers et al., 2019). “Ultimately, tSEL is concerned with not just the analysis of disparate experiences of social and emotional well-being, but with encouraging youth to engage in collective projects and activities that aim to contribute to community well-being and justice” (Rivas-Drake et al., 2021, p. 5). Additionally, tSEL includes a focus on:

- **Curiosity**, part of responsible decision-making, which leads to the pursuit of knowledge and different perspectives and contributes to attention, engagement, and learning.
- **Identity**, a core part of self-awareness, which refers to how students (and adults) view themselves as individuals and as part of the world around them. Having a healthy sense of identity buffers against negative or traumatic experiences and contributes to positive academic, social, and emotional outcomes.

⁷ CASEL does believe, however, that evidence-based SEL programs and practices are critical for positive student outcomes

- **Agency**, part of self-management, or feeling empowered to make choices and take actions that produce a positive difference. Agency helps young people make choices about learning and career goals, overcome personal challenges, and shape the course of their lives.
- **Belonging**, part of social awareness, the experience of acceptance, respect, and inclusion within a group or community. Having a sense of belonging is critical to well-being, motivation, and achievement.
- **Collaborative Problem-Solving**, part of relationship skills, the ability to build shared understanding and work together to come to solutions by pooling knowledge, skills, and efforts.

Like the domains of competence in which they are nested, the constructs are interrelated and potentially mutually reinforcing. For example, in many respects, collaborative problem-solving can provide a context for leveraging and cultivating identity, agency, belonging, and curiosity among young people and adults (Jagers et al., 2021). While particularly salient within tSEL, the constructs are important within SEL generally. They distill recent scholarship on how learning and development happens with an eye towards equity (Jagers, et al., 2019).

INQUIRY-BASED LEARNING DEVELOPS STUDENT SEL

Approaches that are student-led and inquiry-based provide a unique opportunity to support systemic, integrated SEL. First, complex, meaningful learning experiences provide all students opportunities for sustained engagement, collaboration, and expression (Barron et al., 2010). This means students have opportunities to practice SEL competencies every day as part of their journey towards academic excellence. Second, when SEL competencies are integrated into meaningful academic experiences, teachers are in turn afforded opportunities to reinforce SEL skills over time (Stelitano & Steiner, 2021). This allows teachers to act as coaches as students internalize and apply their learning to new and more challenging problems and make connections between the competencies and their day-to-day experiences. This is a shift away from overly didactic instruction to more engaging and rigorous approaches.

Both PBL and YPAR can be considered innovations in SEL instruction and implementation because they encourage collaborative problem-solving, which synergizes competencies, and move from a narrow focus on student skill-building by using academic content and skills to examine an issue or problem that is locally relevant. Jagers et al. identify PBL and YPAR as promising approaches that have the “potential to foster social, emotional, and academic processes and outcomes for diverse students and adults” (2019, p. 175). Building on the work of Jagers et al., this report will explore PBL and YPAR in further detail, with special focus on how these approaches enable the building of equitable learning environments and supporting student learning using the focal constructs. We will begin with a brief description of each approach, along with their theoretical underpinnings before exploring what these approaches could look like through a tSEL lens.

PROJECT-BASED LEARNING (PBL)

Project-Based Learning (PBL) is a student-centered approach to teaching and learning where students inquire around topics or phenomena of interest and ultimately create and share public products or performances addressing their questions (Condliffe, 2017; Mergendoller & Larmer, n.d.). PBL curriculum is designed and enacted in schools in a range of ways, but all tend to proceed with cycles of inquiry starting with driving questions, through investigation, ending with conclusions and communicating them to an audience. The Buck Institute for Education (Mergendoller & Larmer, n.d.) includes the following essential PBL elements: (a) a challenging problem or question that is important to students; (b) sustained inquiry that is active, in-depth, and iterative; (c) authenticity that implies real-world relevance for students; (d) student ownership reflected in their voice and choice; (e) student and teacher reflection. These design principles require a shift in mindset and practices of both teachers and students as teachers move to the role of facilitator and coach (Condliffe, 2017).

RESEARCH AND THEORETICAL FOUNDATIONS

Much research has documented the benefits of PBL in supporting student learning and engagement. The evidence from research on PBL in science education strongly suggests that effectively guided instruction by teachers yields strong academic learning outcomes (Furtak et al., 2012), especially when teacher guidance is geared toward key disciplinary practices such as attention to evidence and explanation. In a meta-analysis of 30 studies from elementary to college level in multiple subjects, Chen and Yang (2019) found a moderate to large positive effect size for academic outcomes when comparing students in PBL classes with students who received typical instruction. In another study, Hernández-Ramos and De la Paz (2009) compared eighth graders in a technology-enhanced PBL unit with students receiving typical instruction and found that students in the PBL group had higher content knowledge scores, demonstrated higher levels of historical thinking, and reported increased positive attitudes towards learning social studies and towards working with others relative to comparison students. Students also reported enjoying the PBL experience and learning skills they could apply in future.

There is also growing evidence that PBL can support equity as an effective strategy for increasing student engagement and academic attainment across racial, gender, language, and socio-economic backgrounds (Condliffe, 2017; Duke et al., 2021; Holthuis, 2018; Saavedra et al., 2021). For example, students participating in the Learning Through Performance PBL middle school science program in high-poverty, diverse schools outperformed matched comparison peers receiving traditional science instruction on science, math, and English assessments. English learners in the PBL course outperformed peers on a language proficiency test (Deutscher et al., 2021). In a study examining the effects of a PBL social studies and literacy curriculum in elementary schools, Duke et al. (2021) found that students in a low socioeconomic status district receiving PBL instruction performed significantly better than those in comparison classrooms (63 percent better on a social studies assessment and 23 percent better on an informational reading assessment). Finally, Saavedra et al. (2021) found in a randomized control trial that adding rigorous PBL to AP U.S. Government and AP Environmental Science courses increased the proportion of students earning college-credit qualifying scores on the final tests across household income levels.

Furthermore, positive outcomes have been found for not only academic achievement but **SEL development**. For example, Krajcik et al. (2021) reported that, in a randomized control trial of 46 elementary schools, participants in the Multiple Literacies in Project-Based Learning (ML-PBL) program more frequently reported the value of the

SEL skills of reflection and collaboration. In another study, a third-grade teacher’s use of the ML-PBL curriculum provided opportunities for students to learn and use the social and emotional skills of collaboration, reflection, ownership, and reflection in the service of disciplinary learning (Fitzgerald, 2020). Boardman et al. (2023) found that ninth grade ELA students in PBL classrooms reported more meaningful learning experiences and opportunities for collaboration and other aspects of SEL (i.e., self-awareness, social awareness, and relationship skills) than students in comparison classrooms, and their teachers reported more authentic learning, more student choice, and greater student engagement. This contributed to many teachers also reporting a sense of renewal and greater passion after having shifted to PBL instruction.

YOUTH PARTICIPATORY ACTION RESEARCH (YPAR)

Youth Participatory Action Research (YPAR) is an approach to research and teaching that allows young people and educators to collaborate in co-leading a research project that they care about and that directly impacts their lives (Checkoway & Richards-Schuster, 2012; Ozer, 2016). YPAR is considered another promising inquiry-based teaching strategy that acknowledges and supports students’ curiosity, identities, and sense of agency and belonging while engaging in collaborative problem-solving in academically rigorous and relevant course content (Jagers et al., 2019). YPAR spaces have also been associated with young people’s critical consciousness development, which is the ability to recognize and analyze systems of inequality and the commitment to take action against these systems (El-Amin et al., 2017). YPAR has multiple features, which include youth: (1) engaging in research to understand social issues they care about, (2) translating research into social change efforts that positively impact young people’s schools and communities, (3) and collaborating with adults to engage in these research-practice efforts (Cammarota & Fine, 2008; Ozer et al., 2022). Students engage in the cyclical process of observation, reflection, planning, and action through group dialogue and listing out community strengths, data collection, and in the creation of an action plan for change. Through the process, they are able to develop a voice in shaping aspects of their own and their communities’ socio-political, culture, educational, and public health futures (Schensul & Berg, 2004).



RESEARCH AND THEORETICAL FOUNDATIONS

While there is great promise in YPAR programming and its effects on youth, the field is in need of causal research linking efforts to direct impacts. Still, this type of action research has demonstrated preliminary success with marginalized urban middle and high school youth (Berg et al., 2009), and has great implications for youth through both a prevention and educational lens. A 2017 meta-analysis found a set of common youth outcomes associated with participation in YPAR; they included development of self-agency and leadership and interpersonal and

cognitive outcomes (Anyon et al., 2018; Schensul & Berg, 2004). In Berg and colleagues' 2009 quasi-experimental designed YPAR intervention, youth cohorts researched risky teen sex, high school dropout rates, and drug use/teen hustling (the selling of stolen or illegal items) and found that over the course of the program, youth-reported perceptions of social cohesion significantly rose, along with youth (who stayed the entirety of the intervention) reporting higher levels of both community self-efficacy and disapproval of drug use than those who dropped (Berg et al., 2009).

YPAR models are aligned with the K–12 Common Core curriculum, specifically those research skill benchmarks, emphasizing evidence-based inquiry (Kornbluh et al., 2015). Using the YPAR model gives students the opportunity to learn research skills while involving math, reading, writing, and problem-solving, which are highly valued in classrooms nationwide, while also creating great potential to complement SEL programs in these classrooms (González & Hong, 2022; Ozer et al., 2021). During YPAR, program facilitators (i.e., community educators, out-of-school time staff) and classroom teachers engage students in critical reflection on their personal and community assets and challenges while providing opportunities to learn content aligned to academic standards. This form of programming uses a social science and advocacy-based approach to help young people think critically and tackle structural, individual-, and group-level disparities that affect them, their peers, and/or their communities (Schensul & Berg, 2004). In turn, YPAR empowers students to use academic research skills while working collaboratively with their peer groups—applying their social emotional skills—to investigate and take action to rectify local issues. This model can span from a single curricular unit plan to an academic year, depending on the school context.

YPAR provides an alternative to more common pedagogical approaches to teaching and learning by creating a research process that is relevant to youths' lives and responsive to their communities' needs (Akom et al., 2008). The process is also grounded in assumptions that youth have important thoughts to share about pressing social issues and ideas on how to disrupt them (Bañales et al., 2023; Teixeira et al., 2021). YPAR can be a powerful tool to tap into young people's perspectives about their school experiences and the creative solutions they have to improve schooling conditions particularly for youth of color (Villavicencio et al., 2022), LGBTQ+ teens (Buckley-Marudas, 2018), and other young people with marginalized identities. For example, youth engaged in this programming have undergone the research processes to address community-level issues such as risky sexual behavior, high school dropout rates and drug dealing among high school students (Berg et al., 2009). Other programs have had high school youth address the trajectories of students who earned a GED as compared to those who achieved the traditional high school diploma (Tuck, 2009). In this way, YPAR offers the potential for a developmentally appropriate pedagogical approach that embeds SEL and prevention.

In thinking about social emotional competence development, Ozer and colleagues (2021) put forth that YPAR participation should yield youth-level outcomes such as positive ethnic identity and sense of purpose (self-awareness), greater individual and collective efficacy (self-management and relationship skills), and increased school bonding and social networks and supports (social awareness and relationship skills). Future directions in the field include further research and evaluation continuing to substantiate these ideas.



PBL AND YPAR THROUGH A TSEL LENS

As we explored, tSEL is an approach to SEL that focuses on co-learning to critically examine root causes of inequity and to develop collaborative solutions that lead to personal, communal, and societal well-being (Jagers et al., 2021). In a research-practice partnership focused on “working to connect the dots between SEL, ethnic/racial identity development, and emerging civic and sociopolitical development among Latinx early adolescents,” Rivas-Drake and colleagues (2021, p. 2) help paint a picture of what tSEL can look like in practice. In their brief, they elevate three principles: (1) Centering students’ lived experiences and identities in SEL instruction; (2) Using SEL discussions to validate student experiences of oppression; and (3) Creating space for youth to use their voice for social justice.

The extent to which PBL and YPAR do all three varies; both PBL and YPAR disrupt inequitable educational practices by creating opportunities for students to co-learn and develop collaborative solutions to community problems. However, as we will explore, the extent to which PBL includes the focus on critical consciousness included in both the tSEL definition and the findings of Rivas-Drake et al. (2021) varies widely. Generally speaking, it would be reasonable for educators to begin with PBL and, depending on their context, deepen the work to a YPAR approach as students and teachers themselves become more comfortable with the shift towards deeper analysis of critical consciousness.

Another important component of tSEL is that it is community- and culturally responsive. According to Ladson-Billings (2014), culturally relevant teaching speaks to three separate domains that become relevant and sustaining for students when interwoven: academic success, cultural competence, and sociopolitical consciousness. For learners who experience cultural, racial, or linguistic marginalization, well-supported SEL within PBL and YPAR can open up new pathways and opportunities (e.g., Nasir et al., 2020; Polman, 2006; Rahm, 2016), which we explore in detail in the section on identity. High-quality PBL and YPAR include elements of community- and culturally responsive education because each “uses a student’s cultural knowledge as a scaffold” (Hammond & Jackson, 2015, p. 15) and relies on supportive, equitable teacher-student relationships, although YPAR more consistently includes the sociopolitical consciousness Ladson-Billings describes. We will now describe each approach through the lens of the focal constructs connected to tSEL.

Inquiry-based strategies like PBL and YPAR nurture curiosity through sustained inquiry with a lens to the wider world. Curiosity has both cognitive and affective elements that lead us to pursue knowledge and awareness (Hidi & Renninger, 2006; Jagers et al., 2021). Sustained inquiry is a key feature of both PBL and YPAR; both approaches have students (and adults) move through cycles of reflection, planning, and action, as described above. Curiosity plays an important role throughout these project cycles. For example, at the beginning stage, PBL initiatives often launch with questions in which students are interested (Penuel et al., 2022). In the middle phases of a project cycle, students find and evaluate sources of information, pose new questions, and apply their learning in an iterative process. At this stage, teachers can facilitate hands-on experiences with unfamiliar ideas, materials, and people, opening up new curiosities for students and helping them to build new interests and understandings (Hidi & Renninger, 2006). In the end stages of a project cycle, curiosity is important to critique and revision; students ask questions and help each other focus and refine their thinking.

While sharing the element of sustained inquiry with PBL, a key component of YPAR involves young people questioning why their lived conditions, social realities, and the nature of society are structured in the ways that they are. Asking youth to reflect on why disparities along race-based, class-based, language-based, etc., lines exist presents opportunities for young people to question the role historical and contemporary systems of dominance and biased forms of policy play in creating and perpetuating young people’s lived conditions. Thus, the YPAR process, in and of itself, is a social justice approach to facilitating students’ curiosity, as it centers questions students may have about their identities and the social issues that impact their schools and local communities.

Creating the kinds of relationships with and among students that allow for productive conversations around complex social issues requires adult capacity and asks adults to bring a curiosity about the lived experiences of their students, especially when they are different from their own. Additionally, a key component of YPAR involves youth developing skills related to critical consciousness, or the ability to reflect on and question the larger structural issues (e.g., local policy) that underpin social issues that impact youth, their schools, and communities, as well as engage in behaviors that challenge these issues (Cammarota & Fine, 2008). This construct can be linked to curiosity in its call for critical reflection and pursuit of knowledge and different perspectives.

Both PBL and YPAR tap into and honor students’ identities—their knowledge and understanding of themselves and their communities. These two strategies incorporate students’ personal experiences and cultural backgrounds—i.e., their “funds of identity” (Esteban-Guitart & Moll, 2014, p. 31)—in multiple ways. For example, most PBL includes an emphasis on “voice and choice” and authenticity⁸. For example, the PBL-ELA program *Compose Our World* (Boardman et al., 2021) focuses on authentic-making in three ways—projects should be authentic to students’ experiences and perspectives, authentic to their community, and authentic in their use of disciplinary practices and tools (Polman, 2012). YPAR also grounds itself in students’ lived experiences and provides opportunities for students to learn and apply research practices. When enacted successfully, both PBL and YPAR build self-awareness by bridging how students may have seen themselves in the past (or been seen) with emerging, more expansive ways of understanding themselves and their assets. This includes how students understand themselves as members of their classroom communities, their potential for future work, and their identities as citizens with rights and responsibilities (Calabrese Barton et al., 2013; Nasir et al., 2020; Polman & Miller, 2010).

⁸ Buck Institute describes an authentic project as one that “involves real-world context, tasks and tools, quality standards, or impact, or the project speaks to personal concerns, interests, and issues in the students’ lives” (Mergendoller & Larmer, 2015).

In this way, both PBL and YPAR support the development of disciplinary identities, which invites students to expand their understanding of themselves as learners and thinkers, for example, by thinking of themselves as writers, scientists, or mathematicians who use the practices and tools of the discipline. Development of disciplinary identities can be at odds with the traditional “grammar of schooling” (Tyack & Tobin, 1994); notions of what makes a good student often include conformity and compliance, which are at odds with the sustained questioning and collective creativity needed to do deep disciplinary work. This can be seen in the program Connect Science (Rimm-Kaufman et al., 2021) which engages students as young as third grade in developing their disciplinary identities by defining their roles as scientists to impact change in their communities.

This connects to the academic mindset of “this work has value for me.” Academic mindsets lay the groundwork for deep social, emotional, and academic learning (Farrington et al., 2012). The recognition that students receive when carrying out work valued within the disciplines helps build strong academic identities as well as identities that learners carry beyond school into the rest of their lives (Avraamidou, 2022). As Farrington et al. (2012) note, “learners are naturally motivated to learn when they ... see connections between the learning and their personal aspirations” (p. 29).

YPAR spaces are well-positioned to support young people’s ability to reflect on and engage with a range of social identities (e.g., gender, ability status, immigration status), particularly for students in the period of adolescence (Davis, 2019; Huerta et al., 2023; Kornbluh, 2023). For example, in identifying communities in which young people yearn to engage, they may question: What is a community? How do we know? What communities do we belong to, and how do those connections impact our understanding of and involvement in these communities? While young people who engage in social identity development processes experience positive outcomes for themselves and their own self-concept, their communities benefit as well (Bañales et al., 2021; Crocetti et al., 2022). For instance, young people of color who explore and gain clarity about their ethnic-racial backgrounds and develop attitudes and beliefs about these groups are likely to believe that it is important to promote the well-being of members of their school and local communities and expect to be involved in behaviors that advance their communities as they get older (Bañales et al., 2020; Pinetta et al., 2020). This connects with the focal construct of agency.

Both PBL and YPAR build students’ sense of agency and efficacy by acknowledging that youth themselves have the power to make a true impact on their communities and providing the metacognitive and self-regulatory strategies they need to engage in this type of sustained effort (Farrington et al., 2012). Bandura (2000) defines agency as consisting of devising, following, and reflecting on a plan of action. While the process of PBL does leverage student agency, the extent to which PBL is student-driven varies considerably, with curriculum developers and teachers often constraining projects to fulfill curriculum goals while still offering opportunities for student choice. In PBL classrooms, agency can be seen in students making choices around learning, assuming leadership roles, effectively planning towards goals, collaboratively working to solve problems, and reflecting on their own efficacy and learning. Reflection (self- and social awareness) is an essential component to PBL and to being agentic (Barron et al., 1998). With support, students can reflect on themselves and their communities to identify patterns and make meaningful changes (Baines et al., 2021).

YPAR is an especially powerful process in stimulating young people’s agency through their civic engagement—or the development of beliefs, attitudes, and behaviors that positively contribute to communities (Phan & Kloss, 2023). Young people’s participation in the YPAR process, which is inherently focused on their positive involvement in their local and school communities, is itself a form of civic engagement (Aldana et al., 2019; Anderson, 2020). In

addition to the process, young people who participate in YPAR are likely to engage in political, civic, and prosocial actions that positively impact their communities (Huerta et al., 2023). For example, middle school and high school Latinx students who were involved in efforts that centered their communities expressed beliefs that they could make a difference in their communities (Domínguez, 2021). Youth who are more civically engaged in adolescence report higher incomes and educational levels as adults (Ballard et al., 2019).

Teachers using PBL and YPAR can support student agency by providing them with the tools to be independent learners. Successful PBL teachers incorporate classroom organizational structures and practices that promote participation and a sense of agency among all learners. The focus on supporting all learners in developing deep knowledge and tools moves away from test-taking strategies and worksheets and toward mindful scaffolding and gradual release of support as students become more independent (Baines et al., 2021; Barron et al., 1998). PBLWorks has shown effectiveness in measures around student agency in CASEL's Program Guide—students who received the program had significant increases in self-reported academic self-efficacy (CASEL).

YPAR also stimulates students' agency by providing structured opportunities to build their capacity to conduct, analyze, and present original research. As with other inquiry-based processes, it is important that educators do not confuse the youth-led processes of YPAR with "hands-off" approaches to teaching and learning. Even though YPAR can be exciting for students as they feel their voices are centered in decision-making, the process may also feel overwhelming. Creating a research-project from start to finish takes a lot of work and often includes trial and error. It is important for students to have scaffolded opportunities to practice key skills that comprise the broader YPAR process (e.g., research skills), as well as the unique skills of students' particular projects.

This requires adults to nurture academic mindsets, such as: "I belong in this academic community" and "my ability and competence grow with effort"(Farrington et al, 2012) along with providing concrete opportunities to practice research skills. Relatedly, University of Denver researchers facilitated a program using the Youth Engaged in Leadership and Learning (YELL) curriculum, a 26-week YPAR curriculum, and found that high school participants experienced positive and statistically significant changes in perceived youth voice and adult support (key elements to agency and belonging) in contrast to a lack of change in the comparison group, suggesting that YPAR creates opportunities for adolescents to take on meaningful leadership roles and negotiate new relational dynamics with adults (Anyon et al., 2018).

Inquiry-based learning aligns with sociocultural learning theories that hold learning is a social activity and that meaning-making happens through our interactions with others (e.g., Vygotsky, 1978; Wertsch, 1998). This necessitates belonging, which itself is deeply connected to agency. A sense of belonging is foundational to students' positive relationship with school and their academic success and outcomes (Jagers et al., 2021), and students who feel a sense of belonging in their schools and classrooms demonstrate higher levels of competencies such as self-efficacy and intrinsic motivation (Farrington et al., 2012). Belonging is supported through inclusion, which means that all students have access to, and support for, these learning experiences, from initial brainstorming stages to critique and revision.

When students feel accepted, they can show up authentically and co-create with their peers (Healey & Stroman, 2021; Jagers et al., 2021) and are more able to take the intellectual risks necessary to learning. This connects with Hammond and Jackson's (2015) focus on the importance of learning partnerships and community-building to

support student independence and deeper learning. This requires “trusting and caring relationships” (Boardman et al., 2021, p. 75). The Compose Our World ninth grade English Language Arts initiative explicitly stressed the importance of students and teachers practicing caring, advocacy, perspective-taking, and empathy; this contributed to a greater sense of belonging and success in PBL (Garcia et al., 2020). The Nora Project emphasizes the importance of belonging for all students through their three values: (1) Accessible spaces are better spaces; (2) Inclusive activities are richer activities; and (3) All human lives have equal value.

PBL also creates a sense of disciplinary belonging through critiques by experts in a field, which students use as part of their process of revising projects. For example, framing of critiques in a science project as “scientist to scientist” creates additional layers of belonging and identification, since the recognition of the students by respected others suggests inclusion in the group of people who “do science” (Avraamidou, 2022; Polman & Miller, 2010).

YPAR spaces have also been associated with young people’s critical consciousness development, which is another aspect of civic engagement that involves youths’ critique and action against societal oppression (Watts et al., 2011; Heberle et al., 2020). Critical consciousness development may be considered an aspect of students’ belonging, as both processes are aspects of social awareness that involve recognizing the inherent value of minoritized communities and supporting the inclusion of these communities (Gonzalez et al., 2020). All students, including those with marginalized and dominant social backgrounds, have the potential to develop a critical consciousness of complex social issues, such as racism (Bañales et al., 2023), in developmentally appropriate ways. Given tensions with discussing societal oppression in school (CITES) and structural school-related realities that constrain YPAR such as time (Anderson, 2020), youth require scaffolded opportunities to learn about the historical and contemporary manifestations of oppression. Although the critical consciousness development process has been associated with positive academic and social and emotional outcomes (Heberle et al., 2020; Seider et al., 2023), youth require emotional support throughout the process (Fernández & Watts, 2022), as learning about the history of displacement and marginalization in communities can be overwhelming.

However, this overwhelm can be offset, or at least joined, by radical hope, as students pool their knowledge and skills through collaborative problem-solving. Inquiry-based learning often moves students from the constraints of the classroom and school settings to their larger community as they work together to provide authentic solutions to context-specific problems in support of collective well-being (Jagers et al., 2019). Inquiry-based learning, such as PBL and YPAR, foster active classroom cultures that support productive forms of student talk, such as building on the thinking of others (Michaels & O’Connor, 2017; Michaels et al., 2007). This requires students to recognize the strengths in one another’s contributions and co-create knowledge. To engage in this way, students use multiple, interconnected intra- and interpersonal competencies, such as: communicating clearly, listening actively, cooperating, resisting selfishness and inappropriate social pressure, negotiating conflict constructively, seeking help, and offering leadership when needed, and working collaboratively whenever possible (Jagers et al., 2019). To be most effective, collaborative learning opportunities require group members to rely on one another for their success (Huss, 2006; Jao, 2012). This requires educators to be thoughtful about roles and requirements, so that each student has a meaningful opportunity to contribute.

Well-designed PBL ensures that all students have meaningful roles and that they work together in an iterative process of critique and revision. When implemented with a tSEL lens, PBL grounds student collaboration in justice-oriented citizenship. Iterative cycles in the promotion of well-being and positive change—moving from relationship skills into collaborative problem-solving—adds an equity lens and deepens the “why” of the learning and engagement (Jagers et al., 2019). Collaborative problem-solving towards real-world issues can provide a means to combine disciplinary learning with student-led advocacy. For example, Morales-Doyle’s (2017) “soil project” engaged students and community members from local activist organizations in investigations of soil contaminations, followed by efforts to achieve environmental justice. Bouillion and Gomez (2001) demonstrated that such community-connected science learning provided important scaffolds to students’ collaborative problem-solving.

YPAR, though sharing similar features to PBL such as an emphasis on collaboration and inquiry, is distinct in that it explicitly positions youth as not just co-creators of knowledge, but as expert co-creators, which necessitates intentional power sharing strategies by adults (Cammarota & Fine, 2008; Ozer, et al., 2013). YPAR has a particularly strong emphasis on equity, with actual improvement of the lived experience of youth through policy changes being the ultimate aim (Ozer, 2016). This makes YPAR an especially useful strategy for practitioners looking to integrate tSEL into their work with students.

YPAR’s focus on providing youth space to think critically about the root causes of social issues in society and local communities alongside their peers and teachers offers opportunities for Collaborative Problem-Solving. There are numerous opportunities to engage in this aspect of tSEL that map onto the YPAR process. For instance, in the problem-identification process, students and school partners must work together to identify social issues that the group wants to learn more about. These discussions require skills related to perspective-taking, verbal communication, and active listening for students to understand the importance and scope of a social issue and the communities the issue impacts (Gonzalez et al., 2020). Students may also engage in collaborative problem-solving as they determine the “action” component of their projects, or in determining how their research will be used to advance social justice for communities.

It is common for students who engage in YPAR to have diverse ideas on how to translate research into practice or into actions that promote social change (Anyon et al., 2018). This diversity of thought is a strength that should be supported, especially because it signals that students are interested and excited to apply their research to actual community-level issues. It is vital for students’ agency and decision-making to be supported in the process to ensure that youths’ visions for social justice are centered (Aldana & Richards-Schuster, 2021). Exploring the different ways students desire to impact communities using their research presents a unique opportunity for educators to engage students in conversation and decision-making around what it means to translate findings into tangible outcomes and how group-level goals inform this process.

Overall, both PBL and YPAR have the potential to communicate to students that they are safe, loved, and respected at school—positive experiences that could ripple into further opportunities for social connection and social justice in young people’s local communities. Young people walk into schools with ideas about issues that pertain to the structure of their schools, such as what to have for school lunch, how the opportunities afforded to them at their school differ from opportunities students have at other schools, and how differences in school resources are related to societal inequality (Hope & Bañales, 2019). PBL and YPAR offer educators and students alike the opportunity to lean into rigorous, engaging, and relevant approaches to social, emotional, and academic learning as they seek to impact the world around them.

CONDITIONS FOR EDUCATORS TO ENACT INQUIRY-BASED LEARNING THROUGH THE LENS OF TSEL

What we want for students, we must be willing to provide for teachers. Educators who will be using inquiry-based learning with their students benefit from experiencing these approaches firsthand, collaboratively exploring questions based on their unique perspectives, interests, and experiences. In this way, educators become more comfortable at co-designing authentic learning experiences that rely on collaboration and solving real-world problems. Encouraging a space of “productive uncertainty” (Allen & Heredia, 2020) is a pathway for educators to encourage student voices and ideas, and to empower them to become more civically engaged. This means, in part, being willing to prioritize asking complex questions over having all the answers. If districts and schools aim to build these skills among educators, then they must invest the time and resources necessary for teachers to “get their hands dirty,” try new things, and make pivots. Leadership can support this work by embracing and modeling not-knowing and taking a learner’s stance (i.e., curiosity) through their own communication, professional learning, etc.

Inquiry-based learning is far from one-size-fits-all. As they experience and learn about implementing inquiry-based instructional strategies, educators benefit from the shared knowledge and experience of their colleagues to adapt their lessons to meet the needs of their specific students. An environment of professional belonging helps educators feel comfortable sharing both their strengths and challenges in the service of learning ([Learning Forward](#)). Professional learning communities are one way to create consistent opportunities for collective learning and collaborative problem-solving. Schools can support educators by making time and space for this sort of work. It is important to note, however, that opportunities for collaborative problem-solving are more likely to support teacher efficacy when teachers have “influence over instructionally relevant school decisions” (Goddard et al., 2004, p. 3). It is crucial, therefore, that educators’ hypotheses and epiphanies around instruction are connected to actual **agency** and decision-making power over that instruction.

This decision-making power allows educators to adjust instruction in ways that tap into and honor students’ knowledge and understanding of themselves and their communities so they can take action and address real problems. This requires a degree of power-sharing and thought-partnering with students that may be outside of some educators’ comfort zones. Young people require leadership opportunities to practice using their voices to speak up about issues they care about. Scaffolded power-sharing in particular is an important aspect of PBL, YPAR, and other student-centered approaches to teaching and learning (Barron et al., 2010). **It requires educators to build strong, empathetic, and transparent relationships with students.** Given that “adultism”—the system of oppression that prevents young people from engaging in opportunities and decision-making that directly impacts their lives (Bettencourt, 2020)—still shapes the environments of many schools, students may vary in how comfortable they are sharing their ideas, particularly ideas that challenge the views of adults (e.g., teachers, principals).

To help them build environments of inclusion and belonging where students feel free to speak their minds, educators benefit from opportunities to discover and strengthen their own social and emotional competencies, including the ability to handle uncertainty and ambiguity, build relationships with students, and understand the types of social support students may need to participate effectively in groups. When students engage in the process of co-learning and are viewed by educators as agentic in knowledge-construction, stronger groundwork for successful PBL and YPAR implementation is laid (Miller et al., 2018; Teixeira et al., 2021; Zangori & Pinnow, 2019).

Additionally, tSEL-aligned inquiry-based learning requires cultural competence, an element of social awareness related to the ability to recognize, examine, understand, and respond to the social identities of oneself and others within sociocultural and historical contexts. Cultural competence is a core component of adult tSEL skills, and is developed through intentional critical reflection. Educators, therefore, need opportunities to locate their instruction within the larger socio-political context by paying attention to self and society. This strengthens their ability to provide young people with opportunities to practice engaging in the critical consciousness-development process. Young people, regardless of their social identity background, require facilitated opportunities to learn about historical and contemporary oppression, as well as opportunities to unlearn disparaging narratives about their communities. Such education will better ensure that students begin to develop the tools of identifying and critiquing social issues in their schools and communities. In addition, both culturally responsive/competent teaching and SEL rely on strong relationships with and among students.

Adult educators are key to building these relationships. The more educators feel that their **identities** are accepted as an important part of the school culture—which necessitates peer exploration and identity work—the more likely belonging is fostered in turn. During empathy interviews with students, Tulsa Public Schools heard that students themselves recognized when adults in their school buildings felt a sense of belonging and connection, and that this impacted their own experience of belonging (CASEL, 2020). Further, when adults in schools take time and care to get to know students, and students feel enabled to develop meaningful relationships with both adults and their peers, schools become spaces of care where impactful learning, learning relevant to their own lives, can take place. When students do not feel their identities are valued, that they belong and have agency, then schooling becomes a subtractive experience in their lives and they become increasingly likely to disengage from the experience (Stanton-Salazar & Valenzuela, 2001).

Identity plays an especially critical role in YPAR, given that a key tenet of YPAR is that youth are seen as experts of their lives. Adults require opportunities that allow them to practice engaging in active listening when engaging with students, taking students for their words when they share their lived experiences, and validating students' strengths and challenges. These mindsets and skills can be contextualized, practiced, and reinforced within professional learning opportunities. Of course, teachers and school administrators are embedded in unique schools that are a part of school districts in cities and states with unique legislation that dictate the educational opportunities that teachers provide and the skill-building opportunities teachers may engage in. For this reason, we hope that educators see the strategies in this paper as part of a toolkit for integrated learning that requires they bring their own classroom expertise and knowledge of local context to the table.

While it does require an investment of time and energy, focusing on social and emotional competence and relationship-building along with curriculum and instruction is essential work that helps educators to thrive. Along with boosting their professional effectiveness, opportunities to learn about and reflect on their competencies provide educators with myriad other benefits. In fact, educators in districts who have the opportunity to engage in critical self-reflection as they develop SEL competencies are “less likely to report burnout, demonstrate higher levels of patience and empathy, and have more positive relationships with students, contributing to their academic, social, and emotional development” (Schlund et al., 2020, p. 10).

CREATING THE CONDITIONS FOR EDUCATORS TO ENACT INQUIRY-BASED LEARNING THROUGH THE LENS OF TSEL: IMPLICATIONS FOR TEACHER EDUCATION

A shift away from doing “school as usual” requires a shift in educator preparation. At the high school level especially, there can be a focus on content knowledge and curriculum over high-quality instructional practices that embed SEL. However, for educators to enact inquiry-based learning through a tSEL lens, they need both expertise in their content area and excellent teaching skills. The braiding of these two elements is referred to as pedagogical content knowledge. According to Toolin et al. (2021, p. 34), pedagogical content knowledge is “the critical junction where content knowledge and pedagogical knowledge intersect, and where teachers organize, represent, and formulate their subject matter for student understanding and learning.” When an educator possesses knowledge of different learning strategies and their students’ unique abilities, as well as a firm grasp of their students’ social, political, cultural, and physical environments, they are better able to enact their pedagogical content knowledge (Toolin et al., 2021).

Teachers do not promote student agency by simply “getting out of the way.” Rather, they organize and orchestrate a learning environment with resources and interactions that supportively provide a context in which all learners can successfully exercise agency. Indeed, PBL approaches that are unstructured and more along the lines of student-led “discovery learning” yield lower academic achievement outcomes (e.g., Kirschner et al., 2006). Pre-service teacher education, therefore, should include learning about, and practice using, strategies that are aligned to research on supporting group work (e.g., Cohen, 1994) and are consistent with principles of Universal Design for Learning (Meier et al., 2020).

All students benefit from these learning supports. Research from the Guided Inquiry supporting Multiple Literacies (GIsML) project showed promising approaches to supporting students with individual educational plans (IEPs) conducting an inquiry-based approach in fourth and fifth grades. The initiative identified four significant categories of demand that presented challenges for students with IEPs: language and cognitive needs, print literacy, attention, and social interaction (Magnusson & Palincsar, 1995).

Teachers do not promote student agency by simply “getting out of the way.” Rather, they organize and orchestrate a learning environment with resources and interactions that supportively provide a context in which all learners can successfully exercise agency.



Researchers found that several practices, ranging from providing opportunities for students to “rehearse” their thinking with a partner or small group before whole-class sharing to having structured opportunities for students to support and mentor one another, showed promise in mitigating these challenges. To assist, teachers paid more attention to the group design to ensure that there was at least one student in each group with the leadership skills and social awareness to act as an ally; they also modeled, monitored, and facilitated positive interactions (Cutter et al., 2002; Palincsar et al., 2000, 2001). To ensure that diverse learners benefit from spaces of “productive uncertainty” and authentic intellectual engagement, educators will need to be strategic in their support. Beneficially, strategies that help build independence (agency) in struggling learners are effective for supporting all learners (Rose & Meyer, 2002). These strategies provide opportunities for all students to practice self-management (agency) and responsible decision-making (collaborative problem-solving).

In addition, teacher preparation and continuing education programs are critical to fostering social, emotional, and cultural competencies within educators—regardless of whether they intend to incorporate student-centered inquiry-based learning into their classrooms (Schonert-Reichl, 2017). These competencies help educators create classrooms of care (built on strong relationships), which are foundational to learning at every stage. One model for relationship-building that might prove useful in teacher preparation—and continuing education—is Search Institute’s Developmental Relationships Framework. This framework is particularly useful for loosely framing how relationships can be built within an inquiry-based learning curriculum. Forming these relationships with both peers and adults helps young people cultivate their abilities to shape their own lives, build resilience, and thrive (Search Institute, 2020). The Institute’s framework highlights five key actions adults can take in service of relationship development:

- 1. Express Care:** This can be done through encouragement, showing dependability, warmth, and listening.
- 2. Challenge Growth:** Holding students accountable to high expectations, even in the face of adversity, and pushing them to excel.
- 3. Provide Support:** Helping students to navigate difficult situations, advocating for them, and empowering them to take responsibility.
- 4. Share Power:** This can be done through showing students respect, including them in collaborative work, and giving them opportunities to lead work.
- 5. Expand Possibilities:** Entails opening opportunities for students to grow and be inspired through connections outside of classroom experiences.

This framework provides a useful model for the intricate process of relationship-building while allowing space for the collaborative nature of this often complex process.

Whichever approaches and strategies educators add to their toolkit, we appreciate their collective struggle to engage, support, and educate all students. These citizen-students are our future doctors, lawmakers, artists, and educators, and upcoming generations will depend on their collective capacity to create a just and healthy world. If we truly want to implement SEL in service of equity and excellence, we will need to collectively move towards more inclusive classrooms where every student has access to the rich and meaningful learning experiences needed to meet their potential, and we will need to prepare and support educators in this critical mission.



CASE STUDIES

PBL and Academic Integration Spotlight: STEMpathy

The students in Mr. Miles' sixth grade STEMpathy Club at a public school in the suburbs of Chicago were excited to share the results of their audit of the school's physical, cultural, and social barriers to inclusion as part of [The STEMpathy program](#), created by [The Nora Project](#). Walking the halls of their school with the lens of inclusion helped them discuss the places and spaces where they might not feel invited to participate fully, and to understand where their friends and classmates might feel excluded, too. Students used the ideas that emerged to create project proposals, which they shared with school leaders, to improve accessibility in their school. But their journey together started long before they conducted the audit.

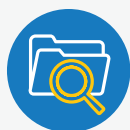
STEMpathy was created as a way to offer students the opportunity to be changemakers in their school communities and to help students build relationships. Students who participate in STEMpathy learn about disability as a natural and expected part of human diversity, recognize and honor that everyone is different, learn what it means to be an ally, and take action to make a positive impact on the inclusivity of their school communities. This is where Mr. Miles' group began learning together. The program provided content that ensured that the students were well-versed in disability and inclusion as a social justice and civil rights issue through their time in the club and that they understood that STEMpathy is "not a service project for kids with disabilities. Instead, it is learning for everyone, which celebrates friendship, diversity, inclusion, and service to the school." As they identified barriers to access and inclusion, the students wrestled with the challenges of advocacy and allyship without overstepping, speaking for, or speaking over those primarily impacted by inaccessibility.

STEMpathy was carried out in four phases of work. Initially, students engaged in knowledge-building and team-building activities as a means to build a foundation for strong collaboration once project work began. The next phase of the work focused on an examination of the school community to apply that knowledge of disability rights and inclusive practices to a problem specific to the school community. Students engaged in an audit of their school to identify opportunities to remove barriers to inclusion in their school community. They took into account their personal capacity, constraints, and time to select a project that they felt confident they could take on.

Mr. Miles guided their work, but the students led their inquiries based on what was most salient for them. This required collaborative problem-solving and vulnerability, as students reached consensus on one or more projects to pursue. Central to the work is the process of inviting and incorporating feedback from stakeholders. Students must bring their ideas to a group of decision-makers to solicit feedback and apply that before they begin. Mr. Miles' club talked with school administrators, teachers, and custodial staff. Facilitators must be prepared to support students through the often challenging experience of receiving critical feedback so that students can practice flexibility and creativity in the face of setbacks. In the third phase of the work, students developed and executed their project plans, building their agency as they made choices and took action to execute their projects, which reflected the proposed solutions to barriers identified in the audit. STEMpathy highlights the importance of supporting students as they build the skills to persevere through challenges and manage their time wisely.

Finally, students closed the loop on their project work by evaluating the effectiveness of their solutions and sharing their experience with their community. This offered a chance to both celebrate success and name where growth happened, even if the outcome wasn't exactly what was expected.

The tSEL construct of **belonging** is a central tenet of STEMpathy. STEMpathy encourages students to make positive contributions to the inclusivity of their school but also focuses on opportunities for students to connect with one another and create a sense of belonging in their school. By analyzing the inclusivity of the school community, students identify ways in which some are being excluded and work to find solutions that can improve conditions for everyone to feel a sense of belonging. Students learn about disability, the largest marginalized group, which is rarely included in the content students learn in school. By drawing awareness to disability as a natural and expected part of human diversity and opening opportunities for students to see parts of themselves reflected in the curriculum, STEMpathy encourages students to share more about themselves and their intersecting identities. Creating a space where it is safe to self-disclose disability leads to a greater likelihood that disabled students will feel a sense of belonging.



CASE STUDIES

PBL and Academic Integration Spotlight: Compose Our World

At the beginning of the school year, the students from David Glover's ninth grade English language arts class would have never imagined they'd be hosting a film screening about the history of the Ku Klux Klan (KKK) in their community. But that's where they ended up. After completing the inquiry-based learning project, one student noted that in most school activities, people don't actually do anything, but "we actually went out and made that change."

Mr. Glover was one of the teachers at an alternative public high school involved in co-designing, testing, and refining the Compose Our World curriculum, a PBL curriculum that incorporated the tSEL constructs. Across the year, Mr. Glover's class—like others doing the Compose Our World curriculum—carried out a series of projects inquiring "How is the world composed for us, and how do we compose our world?" The students sought to identify projects that mattered to them and could reach local audiences.

After their first project, creating a "Museum of Humanity" at a local library, Mr. Glover suggested the students examine their local history to collaboratively build a project that would interest students and appeal to their community. The students began looking at events within their home state in the western part of the U.S. and followed their curiosity about what they encountered to create mini-documentaries. Mr. Glover provided guidance on interviewing and camera angles as the students composed their movies. The work they did was informed by their identities. For instance, Mr. Glover's students identified with a variety of racial and ethnic groups; many identified as White, and many identified as Chicano or Chicana. The White students found inspiration in the [Whiteness Project](#), and most of the students across all identifications were interested in issues of justice. Some chose to examine protests happening about standardized tests in schools, while others began investigating the history of the KKK.

After making the mini-documentaries, the entire class previewed them and then had the opportunity to further exercise their **agency** when they voted on a topic for a final, whole-class documentary. They chose to continue with the exploration of the KKK. They were shocked to find out that the KKK was a strong force in their state's politics and life in the first half of the 20th century, and many noted they had not realized how violent this part of their own town's history had been. Mr. Glover saw this as a turning point in the project. He said in an interview:

The minute we were like, we decided on doing the KKK documentary, ever since then it's like, "Okay, this is real and this what we're doing and we're looking at how it applies to our lives and we're making all these connections," and it was just real. It's not real when they say, "Let's just think about this thing and let's imagine what it might be like."

All along the way, Mr. Glover sought to create an atmosphere where all students felt a sense of **belonging** as they carried out **collaborative problem-solving**. The Compose Our World professional learning community had talked a great deal about "caring, advocacy, perspective taking, and empathy" (CAPE). In the context of the KKK project, the teacher and students cared for one another by supporting all students to make vital contributions to the final documentary and the public screening event. Some students were behind the camera, while others conducted interviews, still others edited the video, and another set worked on the flyers about the screening, which they had scheduled at a local university.

The students were encouraged to advocate for themselves and for others. They sought to understand the perspectives and have empathy for those in the past who were oppressed by the KKK, while also understanding the historical context of their community, which had allowed the racist ideas to flourish. The students came to recognize that the racist legacy of that era was not just past, but was playing out in contemporary political events. In addition to the final documentary film, the students developed a set of public service announcements (PSAs) along with a lesson plan for students at three middle schools in the district. Mr. Glover's students guided their younger peers in creating posters and discussed how to combat discrimination. During a panel discussion with a packed audience at the public screening, one student summed up the experience like this:

It's kind of a lot easier to learn when you're actually interested in the topic. At other schools they're more worried about your grades, not your well-being It's just a lot easier to work on something when you're actually interested and engaged and you want to know about all these other social problems.

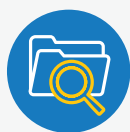
About the Curriculum: Compose Our World⁹ was created by a group of researchers and teachers who collaborated from 2015-2019 to co-design and refine a PBL approach to ninth grade English language arts (ELA) that integrated SEL and universal design for learning. They produced a year-long free curriculum consisting of

⁹ Research-base (qualifying under ESSA Tier 2): In 2018-2019, researchers conducted a mixed-methods study of 43 teachers and more than 1,500 students in 20 schools across two states to evaluate qualities of enactments as well as academic and SEL outcomes (Boardman et al., 2023). Quantitative results from multiple measures include increased student opportunities for authentic learning and collaboration in PBL ELA classes when compared to students in traditional language arts classrooms. Academic outcomes on a writing assessment in the PBL and traditional conditions were not statistically different. Qualitative results showed that many educators reported participating in Compose Our World's professional learning community reinvigorated their practice and noted that the projects developed student creativity and communication skills. Analysis also shows that teachers' asset based views of students and expertise at fostering student collaboration are associated with high-quality PBL enactment.

[four adaptable projects](#). Each project culminates in a multimodal product or performance—like the museum exhibit, film screening, or PSAs that Mr. Glover’s class did—that simultaneously requires the development of ELA skills and reaches an authentic audience.

Compose Our World used a continuous improvement model to implement new designs, and quickly gather feedback and shift to maximize success for students and educators. As part of their work, they created embedded supports and a model Design Institute for extending the professional-learning community of teachers engaged with PBL in ELA. Their approach explicitly integrates SEL with an equity-oriented approach to PBL, and has a particular emphasis on how teachers and students enact caring, advocacy, perspective-taking, and empathy. A key component of materials and professional learning was to encourage teachers to customize projects to meet the unique capabilities and experiences of their diverse students.

Their work led to the publication of the book, *Compose our World: Project-Based Learning in Secondary Language Arts* (Boardman et al., 2021), which can serve as a guide for educators looking to integrate SEL and academics. The book provides a research-based approach to PBL, and includes classroom vignettes with teacher and student voices to help educators apply this approach in their own classrooms, as well as classroom resources that facilitate customization to unique contexts.



CASE STUDIES

YPAR and Academic Integration Spotlight: The Restorative Justice Project Advisory Committee

At a Chicago Options¹⁰ public high school, students, staff, and researchers worked together to study their experiences and practices around restorative justice. Through a YPAR project that embedded tSEL, The Restorative Justice Project Advisory Committee (RJ PAC) turned students into researchers, staff into collaborators, and researchers into community partners.

This participatory, Chicago-based research project, which spanned almost two years, was a collaboration between DePaul University doctoral student Lynn Liao and [Instituto of Justice and Leadership Academy \(IJLA\)](#). IJLA is “designed to serve students between the ages of 16-21 years old, who are seeking a more personalized and individualized program [The school is a] restorative learning community that engages students, through praxis, to strive for self-actualization ... [they] ... invigorate hope and restore students’ hearts and minds to reclaim their education, graduate, and transform into agents of change.” Lynn, now Dr. Liao, approached IJLA with the idea for collaboration, which was rooted in her interests in restorative justice practices in schools. IJLA was interested in documenting the restorative justice practices they already engaged in their school.

The shared and overlapping interests between Liao—an academically trained researcher—and the school provided a strong foundation for the PAC. Gema Gaete, a counselor at the school during the project, expressed

¹⁰ In CPS, Options Schools provide opportunities for re-engagement with school for students who have become off-track.

that “many times, researchers come into schools with Latino and Black students and treat our students as subjects to be studied, dehumanizing them and not valuing their inherent community wisdom or contributions ... Lynn came in humble and willing to listen to our ideas, respected and honored our community and values. The project was about us researching ourselves, so it was a great fit for her and us.” The school already had core principles that emphasized the importance of youth voice, liberation, and healing. Similarly, Liao’s community-based research approach was guided by these principles. The authenticity of the collaboration was supported by both parties’ shared values and beliefs about students of color and their communities and how to engage students in research that impacts their lives.

From its inception, the group included students, school staff, and Liao. In addition to Gaete, this group included Kasia Sanchez, Stacey Krueger, Sixto Torres, Salvador Guzman, Yesenia Pupo, Daniel Barrios, Richard Padilla, Esme Calderon, Sergio Jacquez, Kristina Jensen, Bertha Ramirez, Angie Ramos, Gerardo Posados, and Liliana Ramirez. Students joined the RJ PAC by word of mouth through their friends and school staff. Students who outwardly expressed leadership qualities were also invited to participate in the group. Gaete emphasized that the group ensured to recruit “all students—not only the students who were straight-A students and known school leaders” She stressed that it was important to invite all students to the committee and authentically engage them while they were there because all students deserved the opportunity to have a voice in shaping their school.

In the first year of the project, the RJ PAC had goals related to team development and research. First and foremost, members were invested in creating and solidifying the partnership. One critical relationship-development activity the team engaged in was the development of “acuerdos” (agreements), which were ground rules that outlined the standards of how team members would collaborate with one another. Gaete indicated that it was common for students to “check” staff and students during meetings if they were not staying committed to the acuerdos. Students’ ability to speak honestly to school staff on the committee signaled the trust students felt with the group’s members, especially with the adults. Calderon agreed, voicing that “the group was like a jury where democratic decisions were created.”

Calderon also shared that the PAC not only represented the voices of students on the committee; students also used the group as a platform for other students to share their opinions about the school. To create a strong ethic of collaboration and power-sharing on the team, they always developed meeting agendas together. Gaete shared that Liao never came with her own agenda: students, staff, and Liao had dedicated time to create the agenda to ensure that members had opportunities to steer the group’s activities. Calderon agreed, sharing that students’ opinions were solicited and taken into consideration in decision-making. The power-sharing practices on the team allowed students to feel safe and invested in the group, which served as the foundation for the team’s development of research skills.

All students and staff were trained on foundational research skills by Liao, such as the importance of developing research questions that are grounded in empirical research, but also in students’ own lived experiences. Students and staff were also trained on how to collect and analyze data. Given that the formation of the team was grounded in an interest to document the restorative justice practices of the school, the research questions the team chose to focus on were: (1) What are the restorative justice values

and practices at IJLA?; (2) What are the goals of restorative justice at IJLA?; and (3) What are the staffs' and students' experiences with restorative justice? To investigate these questions, the team facilitated four focus groups with students and one focus group with staff at the school, analyzed the data, and developed a logic model with the results, which was a diagram that depicted [how restorative justice was implemented at IJLA](#).

RJ PAC was particularly successful in supporting students' **agency**. Given that students were treated as authentic co-researchers on the team, they received hours of training on how to conduct research. This training gave students a sense of confidence that they—a group of predominantly Latino youth—could be leaders in their schools and communities and that this leadership comes in the form of serving as researchers. In addition to reporting a sense of agency in developing and practicing research skills, students reported greater confidence that they could personally de-escalate the potential for conflict that may involve themselves or others in their school and neighborhoods. Calderon voiced that, “as a young person, there were so many things to be angry at. I was mad at all the issues in the world. Issues that impacted me and my community. I turned that anger into something positive by contributing to the PAC.”

Even though the YPAR experience was situated in the context of students' school and their schooling experiences, the experience had ripple effects into students' communities. Calderon shared that being a young person on the PAC “empowered me in the space, but also in my life. Now, as a parent, I still use the skills I learned in the PAC in my home with my children. I was allowed to heal from the hurt I experienced as a youth.” Calderon recognized that she already had an interest in restorative justice before joining the PAC, but that engaging in the YPAR experience with the group gave her a safe and healing space to further explore her interests and commitment to social justice—an opportunity she continues to share in her role as a mother with her children¹¹.



¹¹ This review of RJ PAC is informed by public materials on the project, which include the committee's website and a brief on the group. Additional details on the RJ PAC are gathered from an interview that Dr. Josefina Bañales had with Gema Gaete, a key support staff member on the project who was a counselor at the school during the project, and with Elizabeth Calderon, one of the student leaders on the PAC.



CONCLUSION

Inquiry-based approaches, such as PBL and YPAR, have the potential to provide SEL opportunities that are more equitable, student-led, and culturally responsive than current lesson-based approaches on their own. While there is ample evidence of the positive impact of SEL on students generally, the field currently does not have sufficient data around what works, for whom, and in what circumstances. We recognize that SEL must be tailored to meet the needs of local communities and individual students. Unfortunately, much SEL research has been conducted around an imagined “norm,” and too few studies disaggregate data to demonstrate effects on varied populations.

For example, Cipriano and colleagues (2023) found that only 7.4 percent of 269 universal SEL elementary school studies analyzed intervention outcomes by disability status, and only 28.3 percent analyzed outcomes as a function of students’ race or ethnicity. In light of criticism that SEL—and education itself—can be weaponized against students by prioritizing their adjustment to inequitable environments, it becomes even more important to think expansively about the purposes for SEL. Without a change, we risk serving our students forms of SEL and academics that do not meet their needs, and may even exacerbate current inequities (Cipriano et al., 2021; Rivas-Drake et al., 2020). While there is promising data around inquiry-based approaches, these too must continue to be rigorously studied to understand their impact on students who experience marginalization within our current educational systems.

We hope that this paper has provided both inspiration and practical application for educators, program providers, and researchers looking to continue to move the conversation forward.

REFERENCES

- Akom, A. A., Ginwright, S., & Cammarota, J. (2008, August). Youthtopias: Towards a new paradigm of critical youth studies. *Youth Media Reporter: The Profession Journal of the Youth Media Field* 2(4), 1–30. https://www.researchgate.net/profile/Julio-Cammarota/publication/242094894_Youthtopias_Towards_a_New_Paradigm_of_Critical_Youth_Studies/links/54da386d0cf2970e4e7ec2a6/Youthtopias-Towards-a-New-Paradigm-of-Critical-Youth-Studies.pdf
- Aldana, A., Bañales, J., & Richards-Schuster, K. (2019). Youth anti-racist engagement: Conceptualization, development, and validation of an anti-racism action scale. *Adolescent Research Review*, 4(4), 369–381. <https://doi.org/10.1007/s40894-019-00113-1>
- Aldana, A., & Richards-Schuster, K. (2021). Youth-Led antiracism research: Making a case for participatory methods and creative strategies in developmental science. *Journal of Adolescent Research*, 36(6), 654–685. <https://doi.org/10.1177/07435584211043289>
- Allen, C. D., & Heredia, S. C. (2020). Reframing organizational contexts from barriers to levers for teacher learning in science education reform. *Journal of Science Teacher Education*, 32(3), 1–19. <https://doi.org/10.1080/1046560x.2020.1794292>
- Anderson, A. J. (2020). A qualitative systematic review of Youth Participatory Action Research implementation in U.S. high schools. *American Journal of Community Psychology*, 65(1–2), 242–257. <https://doi.org/10.1002/ajcp.12389>
- Anyon, Y., Bender, K., Kennedy, H., & Dechants, J. (2018). A systematic review of Youth Participatory Action Research (YPAR) in the United States: Methodologies, youth outcomes, and future directions. *Health Education & Behavior: The Official Publication of the Society for Public Health Education*, 45(6), 865–878. <https://doi.org/10.1177/1090198118769357>
- Armstrong, P. (2010). *Bloom's taxonomy*. Vanderbilt University Center for Teaching. <https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/>
- Aвраamidou, L. (2022). Identities in/out of physics and the politics of recognition. *Journal of Research in Science Teaching*, 59(1), 58–94. <https://doi.org/10.1002/tea.21721>
- Baines, A., DeBarger, A. H., De Vivo, K., Warner, N., Brinkman, J., & Santos, S. (2021). *Key principles for Project-Based Learning*. George Lucas Educational Foundation. <https://www.lucasedresearch.org/docs/pbl/>
- Ballard, P. J., Hoyt, L. T., & Pachucki, M. C. (2019). Impacts of adolescent and young adult civic engagement on health and socioeconomic status in adulthood. *Child Development*, 90(4), 1138–1154. <https://doi.org/10.1111/cdev.12998>

- Bañales, J., Aldana, A., & Hope, E.C. (2023). Critical race consciousness: Conceptualizing a model of race-specific critical consciousness among youth. In L.J. Rapa & Godfrey, E.B. (Eds), *Critical consciousness: Expanding theory and measurement*. Cambridge University Press.
- Bañales, J., Aldana, A., Richards-Schuster, K., & Merritt, A. (2021). Something you can see, hear, and feel: A descriptive, exploratory mixed-methods analysis of youths' articulations about racism. *Journal of Adolescent Research, 38*(3), 493–527. <https://doi.org/10.1177/07435584211062117>
- Bañales, J., Hoffman, A. J., Rivas-Drake, D., & Jagers, R. J. (2020). The Development of ethnic-racial identity process and its relation to civic beliefs among Latinx and Black American adolescents. *Journal of Youth and Adolescence, 49*(12), 2495–2508. <https://doi.org/10.1007/s10964-020-01254-6>
- Bandura, A. (2000). Self-efficacy: The foundation of agency. In W. J. Perrig & A. Grob (Eds.), *Control of Human Behavior, Mental Processes, and Consciousness: Essays in Honor of the 60th Birthday of August Flammer* (pp. 17–33). Lawrence Erlbaum Associates Publishers.
- Barron, B., Darling-Hammond, L., Dumont, H., Istance, D., & Benavides, F. (2010). Prospects and challenges for inquiry-based approaches to learning. In *Nature of Learning: Using Research to Inspire Practice*. Organization for Economic Co-operation and Development.
- Barron, B., Schwartz, D., Vye, N., Moore, A., Petrosino, A., Zech, L., & Bransford, J. (1998). Doing with understanding: Lessons from research on Problem- and Project-Based Learning. *Journal of the Learning Sciences, 7*(3-4), 271–311.
- Berg, M., Coman, E., & Schensul, J. J. (2009). Youth Action Research for prevention: A multi-level intervention designed to increase efficacy and empowerment among urban youth. *American Journal of Community Psychology, 43*(3–4), 345–359. <https://doi.org/10.1007/s10464-009-9231-2>
- Bettencourt, G. M. (2020). Embracing problems, processes, and contact zones: Using Youth Participatory Action Research to challenge adultism. *Action Research, 18*(2), 153–170. <https://doi.org/10.1177/1476750318789475>
- Bierman, K., Coie, J., Dodge, K., Greenberg, M., Lochman, J., & McMahon, R. (2002). Evaluation of the first three years of the fast track prevention trial with children at high risk for adolescent conduct problems. *Journal of Abnormal Child Psychology, 30*, 19-35. <https://doi.org/10.1023/A:1014274914287>
- Boardman, A., Garcia, A., Dalton, B., & Polman, J. L. (2021). *Compose Our World: Project-Based Learning in secondary English language arts*. Teachers College Press.
- Boardman, A. G., Polman, J. L., Scornavacco, K., Potvin, A., Garcia, A., Dalton, B., Stamatis, K., Guggenheim, A., & Alzen, J. (2023). Examining enactments of Project-Based Learning in secondary English language arts. Manuscript under review.

Bouillion, L. M., & Gomez, L. M. (2001). Connecting school and community with science learning: Real world problems and school-community partnerships as contextual scaffolds. *Journal of Research in Science Teaching*, 38(8), 878–898. <https://doi.org/10.1002/tea.1037>

Buckley-Marudas, M. (2018). Amplifying voice, facilitating agency: Engaging Youth Participatory Action Research in an urban, public high school. *English Leadership Quarterly*, 41(2), 7–11. <https://doi.org/10.58680/elq201829839>

Calabrese Barton, A., Kang, H., Tan, E., O'Neill, T. B., Bautista-Guerra, J., & Brecklin, C. (2013). Crafting a future in science: Tracing middle school girls' identity work over time and space. *American Educational Research Journal*, 50(1), 37–75. <https://doi.org/10.3102/0002831212458142>

Cammarota, J. & Fine (2008). An epilogue, of sorts. In *Revolutionizing Education: Youth Participatory Action Research in Motion* (pp. 213–234). Routledge.

CASEL (2020). SEL as a lever for equity: Adult SEL to support antiracist practice. <https://casel.org/events/sel-as-a-lever-for-equity-part-two/>

Checkoway, B., & Richards-Schuster, K. (2012). Youth participation in community research for racial justice. *Public Sociology: Research, Action, and Change*, 169–175. <https://doi.org/10.4324/9780203051726>

Chen, C. H., & Yang, Y. C. (2019). Revisiting the effects of Project-Based Learning on students' academic achievement: A meta-analysis investigating moderators. *Educational Research Review*, 26, 71–81. <https://doi.org/10.1016/j.edurev.2018.11.001>

Cipriano, C., Horowitz, S. H., & Rappolt-Schlichtmann, G. (2021, December 7). Does social-emotional learning help students who could benefit the most? We don't know. *Education Week*. <https://www.edweek.org/leadership/opinion-does-social-emotional-learning-help-students-who-could-benefit-the-most-we-dont-know/2021/12>

Cipriano, C., Naples, L. H., Eveleigh, A., Funaro, M., Cook, A., Cassidy, C., McCarthy, M., & Schlichtmann, G. (2023). A systematic review of student disability and race representation in universal school-based SEL interventions for elementary school students. *Review of Educational Research*, 93(1), 73–102. <https://doi.org/10.3102/00346543221094079>

Cohen, E. G. (1994). Restructuring the classroom: Conditions for productive small groups. *Review of Educational Research*, 64(1), 1–35.

Condliffe, B. (2017, October). Project-Based Learning: A literature review. <https://files.eric.ed.gov/fulltext/ED578933.pdf>

Crocetti, E., Albarello, F., Meeus, W., & Rubini, M. (2022). Identities: A developmental social-psychological perspective. *European Review of Social Psychology*, 34(1), 161–201. <https://doi.org/10.1080/10463283.2022.2104987>

Curtin, M. (2017). The 10 top skills that will land you high-paying jobs by 2020, according to the World Economic Forum. Inc. <https://www.inc.com/melanie-curtin/the-10-top-skills-that-will-land-you-high-paying-jobs-by-2020-according-to-world-economic-forum.html>

Cutter, J., Palincsar, A. S., & Magnusson, S. J. (2002). supporting inclusion through case-based vignette conversations. *Learning Disabilities Research and Practice*, 17(3), 186–200. <https://doi.org/10.1111/1540-5826.00044>

Darling-Hammond, L., Barron, B., Pearson, P. D., Schoenfeld, A. H., Cervetti, G. N., Chen, M., Stage, E. K., Zimmerman, T. D., & Tilson, J. L. (2015). *Powerful learning: What we know about teaching for understanding*. Wiley.

Davis, S. (2019). Socially toxic environments: A YPAR project exposes issues affecting urban black girls' educational pathway to STEM careers and their racial identity development. *The Urban Review*, 52(2), 215–237. <https://doi.org/10.1007/s11256-019-00525-2>

Deutscher, R.R., Holthuis, N.C., Maldonado, S.I., Pecheone, R.L., Schultz, S.E., Wei, R.C., & Lucas Education Research. (2021). *Project-Based learning leads to gains in science and other subjects in middle school and benefits all learners*. Lucas Education Research. <https://www.lucasedresearch.org/wp-content/uploads/2021/01/LTP-Research-Brief.pdf#:~:text=The percent 20 findings percent 20from percent 20the percent percent20three, percent2C percent20rigorous percent20project percent2Dbased percent20learning>

Dewey, J. (1959). *Dewey on education*. Teachers College Press.

Dolphin, S., Richman, S., Choi, J., Streke, A., DeSaw, C., Demers, A., & Poznyak, D. (2019). *Evaluation of the teacher potential project*. Unpublished report.

Domínguez, A. D. (2021). ¡Venceremos!: Challenging school barriers with Latinx youth Participatory Action Research. *Journal of Latinos and Education*, 22(3), 1208–1222. <https://doi.org/10.1080/15348431.2021.1935258>

Duke, N.K., Halvorsen, A-L., Strachan, S.L., Kim, J., & Konstantopoulos, S. (2021). Putting PjBL to the test: The impact of Project-Based Learning on second graders' social studies and literacy learning and motivation in low-SES school settings. *American Educational Research Journal*. 58(1), 160-200. <https://doi.org/10.3102/percent2F0002831220929638>

El-Amin, A., Seider, S., Graves, D., Tamerat, J., Clark, S., Soutter, M., Johannsen, J., & Malhotra, S. (2017, February 4). *Critical consciousness: A key to student achievement*. Kappan. <https://kappanonline.org/critical-consciousness-key-student-achievement/>

Esteban-Guitart, M., & Moll, L. C. (2014). Funds of identity: A new concept based on the funds of knowledge approach. *Culture and Psychology*, 20(1), 31–48. <https://doi.org/10.1177/1354067X13515934>

- Farrington, C. A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T. S., Johnson, D. W., & Beechum, N. O. (2012, June). *The role of noncognitive factors in shaping school performance: A critical literature review*. Consortium on Chicago School Research. https://consortium.uchicago.edu/sites/default/files/2018-11/The_percent20Role_percent20of_percent20Noncognitive-Aug2017-Consortium.pdf
- Fernández, J. S., & Watts, R. J. (2022). Sociopolitical development as emotional work: How young organizers engage emotions to support community organizing for transformative racial justice. *Journal of Adolescent Research, 38*(4), 697–725. <https://doi.org/10.1177/07435584221091497>
- Finkelstein, N., Hanson, T., Huang, C.-W., Hirschman, B., & Huang, M. (2010). Effects of problem based economics on high school economics instruction. (NCEE 2010-4002). National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
- Fitzgerald, M. S. (2020). Overlapping opportunities for social-emotional and literacy learning in elementary-grade project-based instruction. *American Journal of Education, 126*(4), 573–601. <https://doi.org/10.1086/709545>
- Fredrickson B. L. (2001). The role of positive emotions in positive psychology. The broaden-and-build theory of positive emotions. *The American psychologist, 56*(3), 218–226. <https://doi.org/10.1037//0003-066x.56.3.218>
- Furtak, E. M., Seidel, T., Iverson, H., & Briggs, D. C. (2012). Experimental and quasi-experimental studies of inquiry-based science teaching: A meta-analysis. *Review of Educational Research, 82*(3), 300–329. <https://doi.org/10.3102/0034654312457206>
- Garcia, A., Guggenheim, A., Stamatis, K., & Dalton, B. (2020). Glimmers of care: Attending to the affective everyday in ninth-grade literacy classrooms. *Reading Research Quarterly, 56*(2), 337–354. <https://doi.org/10.1002/rrq.296>
- Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education, 53*(2), 106–116. <https://doi.org/10.1177/0022487102053002003>
- George Lucas Educational Foundation. (2021). *Rigorous Project-Based Learning is a powerful lever for improving equity*. Lucas Education Research. <https://www.lucasedresearch.org/wp-content/uploads/2021/08/Equity-Research-Brief.pdf>
- Goddard, R. D., Hoy, W. K., & Hoy, A. W. (2004). Collective efficacy beliefs: Theoretical developments, empirical evidence, and future directions. *Educational Researcher, 33*(3), 3–13. <https://doi.org/10.3102/0013189x033003003>
- Gonzalez, M., Kokozos, M., Byrd, C. M., & McKee, K. E. (2020). Critical positive youth development: A framework for centering critical consciousness. *Journal of Youth Development, 15*(6), 24–43. <https://doi.org/10.5195/JYD.2020.859>
- González, T., & Hong, J. (2022). *YPAR for the classroom: A guide for the critical and curious educator*. Equity by Design. <https://files.eric.ed.gov/fulltext/ED624596.pdf>

- Hammond, Z., & Jackson, Y. (2015). *Culturally responsive teaching and the brain: Promoting authentic engagement and rigor among culturally and linguistically diverse students*. Corwin, a SAGE Company.
- Hawkins, J. D., Catalano, R. F., Arthur, M. W., Egan, E., Brown, E. C., Abbott, R. D., & Murray, D. M. (2008). Testing communities that care: The rationale, design, and behavioral baseline equivalence of the community youth development study. *Prevention Science, 9*(3), 178-190.
- Healey, K., & Stroman, C. (2021). Structures for belonging: A synthesis of research on belonging-supportive learning environments. <http://studentexperiencenetwork.org/wp-content/uploads/2021/03/Structures-for-Belonging.pdf>
- Heberle, A. E., Rapa, L. J., & Farago, F. (2020). Critical consciousness in children and adolescents: A systematic review, critical assessment, and recommendations for future research. *Psychological Bulletin, 146*(6), 525–551. <https://doi.org/10.1037/bul0000230>
- Hernández-Ramos, P., & De La Paz, S. (2009). Learning history in middle school by designing multimedia in a Project-Based Learning Experience. *Journal of Research on Technology in education, 42*(2), 151–173. <https://doi.org/10.1080/15391523.2009.10782545>
- Hidi, S., & Renninger, K. A. (2006). The four-phase model of interest development. *Educational Psychologist, 4*(2), 111–127.
- Holthuis, N., Deutscher, R., Schultz, S. E., & Jamshidi, A. (2018). The new NGSS Classroom: A curriculum framework for Project-Based Science Learning. *American Educator, 42*(2), 23–27.
- Hope, E. C., & Bañales, J. (2019). Black early adolescent critical reflection of inequitable sociopolitical conditions: A qualitative investigation. *Journal of Adolescent Research, 34*(2), 167–200. <https://doi.org/10.1177/0743558418756360>
- Huerta, C., Gutschow, B., Bañales, J., Boyzo, H., Jenkins, V., Document, P., Taverno, S. E., Goodkind, S., & Ragavan, M. I. (2023). Developing a Youth Participatory Action Research Program for Latine youth in an emerging community. *Health Promotion Practice, 0*(0). <https://doi.org/10.1177/15248399231176248>
- Huppert, F.A. (2009). Psychological well-being: Evidence regarding its causes and consequences. *Applied Psychology: Health and Well-Being, 1*(2), 137–64.
- Huss, J. A. (2006). Gifted education and cooperative learning. *Gifted Child Today, 29*(4), 19–23.
- Jagers, R. J., Rivas-Drake, D., & Williams, B. (2019). Transformative social and emotional learning (SEL): Toward SEL in service of educational equity and excellence. *Educational Psychologist, 54*(3), 162–184. <https://doi.org/10.1080/00461520.2019.1623032>
- Jagers, R. J., Skoog-Hoffman, A., Barthelus, B., & Schlund, J. (2021). *Transformative social and emotional learning: In pursuit of equity and excellence*. American Federation of Teachers. https://www.aft.org/ae/summer2021/jagers_skoog-hoffman_barthelus_schlund

Jao, L. (2012). Culturally aware teaching through cooperative learning and multiple representations in the multicultural classroom. *Multicultural Education*, 19(3), 2-10.

Jones, S. M., & Bouffard, S. M. (2012). Social and emotional learning in schools: From programs to strategies and commentaries. *Social Policy Report*, 26(4), 1-33. <https://doi.org/10.1002/j.2379-3988.2012.tb00073.x>

Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, 41, 75-86. https://doi.org/10.1207/s15326985ep4102_1

Kornbluh, M. (2023). Making the case for youth participatory action research opportunities to enhance social developmental scholarship. *Social Development*, 32(3), 759-775. <https://doi.org/10.1111/sode.12678>

Kornbluh, M., Ozer, E. J., Allen, C. D., & Kirshner, B. (2015). Youth Participatory Action Research as an approach to sociopolitical development and the new academic standards: Considerations for educators. *The Urban Review*, 47(5), 868-892. <https://doi.org/10.1007/s11256-015-0337-6>

Krajcik, J., Schneider, B., Miller, E., Chen, I.C., Bradford, L., Bartz, K., Baker, Q., Palincsar, A., Peek-Brown, D., Codere, S., & Lucas Education Research. (2021). *Project-Based Learning Increases science achievement in elementary schools and improves social and emotional learning*. Lucas Education Research. <https://www.lucasedresearch.org/wp-content/uploads/2021/01/MLPBL-Research-Brief-1.pdf>

Ladson-Billings, G. (2014). Culturally relevant pedagogy 2.0: A.K.A. the remix. *Harvard Educational Review*, 84(1), 74-84. <https://doi.org/10.17763/haer.84.1.p2rj131485484751>

Ladson-Billings, G. (2021). Three decades of culturally relevant, responsive, & sustaining pedagogy: What lies ahead? *The Educational Forum*, 85(4), 351-354. <https://doi.org/10.1080/00131725.2021.1957632>

Lear, J. (2008). *Radical hope: Ethics in the face of cultural devastation*. Harvard University Press.

Learning Forward. *Culture of collaborative inquiry*. Learning Forward. <https://standards.learningforward.org/standards-for-professional-learning/conditions-for-success/culture-of-collaborative-inquiry/>

Learning Policy Institute. (2023, March 21). *Deeper learning*. <https://learningpolicyinstitute.org/topic/deeper-learning>

Learning Policy Institute & Turnaround for Children. (2021). *Design principles for schools: Putting the science of learning and development into action*. Learning Policy Institute. https://learningpolicyinstitute.org/sites/default/files/product-files/SoLD_Design_Principles_Principle_3_Rich_Learning.pdf

Magnusson, S., & Palincsar, A.S. (1995). Learning environments as a site of science education reform: An illustration using interdisciplinary guided inquiry. *Theory Into Practice*, 34(1), 43-50.

Mahoney, J. L., Weissberg, R. P., Greenberg, M. T., Dusenbury, L., Jagers, R. J., Niemi, K., Schlinger, M., Schlund, J., Shriver, T. P., VanAusdal, K., & Yoder, N. (2021). Systemic social and emotional learning: Promoting educational success for all preschool to high school students. *American Psychologist*, 76(7), 1128–1142. <https://doi.org/10.1037/amp0000701>

Mehta, J. (2023). 3 years since the pandemic wrecked attendance, kids still aren't showing up to school. *NPR*. <https://www.npr.org/2023/03/02/1160358099/school-attendance-chronic-absenteeism-covid>

Mehta, J., & Fine, S. (2019). In search of deeper learning: *The quest to remake the American high school*. Harvard University Press.

Meier, B. S., & Rossi, K. A. (2020). Removing instructional barriers with UDL. *Kappa Delta Pi Record*, 56(2), 82–88. <https://doi.org/10.1080/00228958.2020.1729639>

Mergendoller, J., & Larmer, J. (n.d.). *Why we changed our model of the 8 essential elements of PBL*. PBLWorks. https://my.pblworks.org/resource/blog/why_we_changed_our_model_of_the_8_essential_elements_of_pbl

Michaels, S., & O'Connor, C. (2017). From recitation to reasoning: Supporting scientific and engineering practices through talk. In C. V. Schwarz, C. Passmore, & B. J. Reiser (Eds.), *Helping Students Make Sense of the World through Next Generation Science and Engineering Practices* (pp. 311–336). NSTA Press.

Michaels, S., O'Connor, C., & Resnick, L. B. (2007). Deliberative discourse idealized and realized: Accountable talk in the classroom and in civic life. *Studies in Philosophy and Education*, 27(4), 283–297. <https://doi.org/10.1007/s11217-007-9071-1>

Miller, E., Manz, E., Russ, R., Stroupe, D., & Berland, L. (2018). Addressing the epistemic elephant in the room: Epistemic agency and the next generation science standards. *Journal of Research in Science Teaching*, 55(7), 1053–1075. <https://doi.org/10.1002/tea.21459>

Morales-Doyle, D. (2017). Justice-centered science pedagogy: A catalyst for academic achievement and social transformation. *Science Education*, 101(6), 1034–1060. <https://doi.org/10.1002/sce.21305>

Moving Forward Institute. (2018). Embedding social and emotional skill development in common core-aligned English language arts instruction: A study of program efficacy. Unpublished report.

Moving Forward Institute. (2020). Embedding social and emotional skill development in common core-aligned English language arts instruction: A study of program efficacy. Unpublished report.

Nasir, N. S., De Royston, M. M. K., Barron, B., Bell, P., Pea, R., Stevens, R., & Goldman, S. (2020). Learning pathways: How learning is culturally organized. In N. S. Nasir, C. D. Lee, R. Pea, & M. McKinney de Royston (Eds.), *Handbook of the cultural foundations of learning* (pp. 195–211). Routledge/Taylor & Francis Group.

National Commission on Social, Emotional, and Academic Development. The Aspen Institute. (n.d.). <https://www.aspeninstitute.org/programs/national-commission-on-social-emotional-and-academic-development/>

Nichols-Barrer, I., & Haimson, J. (2013). Impacts of five expeditionary learning middle schools on academic achievement. Unpublished report.

Ozer, E. J., Newlan, S., Douglas, L., & Hubbard, E. (2013). "Bounded" empowerment: Analyzing tensions in the practice of Youth-Led Participatory Research in urban public schools. *American Journal of Community Psychology*, 52(1-2), 13-26. <https://doi.org/10.1007/s10464-013-9573-7>

Ozer, E. J., Shapiro, V., & Duarte, C. (2021). *Opportunities to strengthen SEL impact through Youth-Led Participatory Action Research (YPAR)*. Edna Bennett Pierce Prevention Research Center. <https://prevention.psu.edu/wp-content/uploads/2022/09/PSU-Youth-Empowerment-Brief-REV.pdf>

Ozer, E. J., Sprague Martinez, L., Abraczinskas, M., Villa, B., & Prata, N. (2022). Toward integration of life course intervention and Youth Participatory Action Research. *Pediatrics*, 149(Supplement 5). <https://doi.org/10.1542/peds.2021-053509h>

Ozer, E. J. (2016). Youth-led Participatory Action Research. *Equity and justice in developmental science: Theoretical and methodological issues*, 189-207. <https://doi.org/10.1016/bs.acdb.2015.11.006>

Palincsar, A. S., Collins, K. M., Marano, N. L., & Magnusson, S. J. (2000). Investigating the engagement and learning of students with learning disabilities in guided inquiry science teaching. *Language, Speech, and Hearing Services in Schools*, 31(3), 240-251. <https://doi.org/10.1044/0161-1461.3103.240>

Palincsar, A. S., Magnusson, S. J., Collins, K. M., & Cutter, J. (2001). Making science accessible to all: Results of a design experiment in inclusive classrooms. *Learning Disability Quarterly*, 24(1), 15-32. <https://doi.org/10.2307/1511293>

Penuel, W. R., Reiser, B. J., McGill, T. A., Novak, M., Van Horne, K., & Orwig, A. (2022). Connecting student interests and questions with science learning goals through project-based storylines. *Disciplinary and Interdisciplinary Science Education Research*, 4(1), 1-27.

Phan, V., & Kloos, B. (2023). Examining civic engagement in ethnic minority youth populations: A literature review and concept analysis. *American Journal of Community Psychology*, 71(1-2), 54-78. <https://doi.org/10.1002/ajcp.12643>

Pinetta, B. J., Blanco Martinez, S., Cross, F. L., & Rivas-Drake, D. (2020). Inherently political? Associations of parent ethnic-racial socialization and sociopolitical discussions with Latinx youths' emergent civic engagement. *American Journal of Community Psychology*, 66(1-2), 94-105. <https://doi.org/10.1002/ajcp.12435>

Polman, J. L. (2006). Mastery and appropriation as means to understand the interplay of history learning and identity trajectories. *Journal of the Learning Sciences*. 15(2), 221-259. https://doi.org/10.1207/s15327809jls1502_3

- Polman, J. L. (2012). Trajectories of participation and identification in learning communities involving disciplinary practices. In D. Yun Dai, (Ed.), *Design Research on Learning and Thinking in Educational Settings: Enhancing Intellectual Growth and Functioning* (pp. 225-242). Routledge.
- Polman, J. L., & Miller, D. (2010). Changing stories: Trajectories of identification among African American Youth in a Science Outreach Apprenticeship. *American Educational Research Journal*, 47(4), 879–918. <https://doi.org/10.3102/0002831210367513>
- Rahm, J. (2016). Stories of learning, identity, navigations and boundary crossings in STEM in non-dominant communities: New imaginaries for research and action. *Cultural Studies of Science Education*, 11(1), 61–75. <https://doi.org/10.1007/s11422-014-9627-7>
- Rimm-Kaufman, S. E., Merritt, E. G., Lapan, C., DeCoster, J., Hunt, A., & Bowers, N. (2021). Can service-learning boost science achievement, civic engagement, and social skills? A randomized controlled trial of Connect Science. *Journal of Applied Developmental Psychology*, 74. <https://doi.org/10.1016/j.appdev.2020.101236>
- Rivas-Drake, D., Lozada, F. T., Pinetta, B. J., & Jagers, R. J. (2020). School-Based social-emotional learning and ethnic-racial identity among African American and Latino adolescents. *Youth & Society*, 52(7), 1331–1354. <https://doi.org/10.1177/0044118X20939736>
- Rivas-Drake, D., Rosario-Ramos, E., McGovern, G., & Jagers, R. J. (2021). *Rising up together: Spotlighting transformative SEL in practice with Latinx youth*. CASEL. <https://casel.org/sel-rising-up-together/>
- Rose, D. H., & Meyer, A. (2002). *Teaching every student in the digital age: universal design for learning*. Association for Supervision and Curriculum Development.
- Saavedra, A. R., Liu, Y., Haderlein, S. K., Rapaport, A., Garland, M., Hoepfner, D., Morgan, K. L., & Hu, A. (2021, February 22). Knowledge in action efficacy study over two years. [https://cesr.usc.edu/sites/default/files/Knowledge percent20in percent20Action percent20Efficacy percent20Study_18feb2021_final.pdf](https://cesr.usc.edu/sites/default/files/Knowledge%20in%20Action%20Efficacy%20Study_18feb2021_final.pdf)
- Schensul, J., & Berg, M. (2004). Youth Participatory Action Research: A transformative approach to service-learning. *Michigan Journal of Community Service Learning*, 10(3).
- Schonert-Reichl, K. A. (2017). Social and emotional learning and teachers. *Future Child* 27(1), 137–155. <https://doi.org/10.1353/foc.2017.0007>
- Schonert-Reichl, K. A., Kitil, M. J., & Hanson-Peterson, J. (2017). *To reach the students, teach the teachers: A national scan of teacher preparation and social and emotional learning*. University of British Columbia. Available online at: <https://eric.ed.gov/?id=ED582029> (accessed June 16, 2021).

- Schlund, J., Jagers, R. J., & Schlinger, M. (2020). *Emerging insights: Advancing social and emotional learning (sel) as a lever for equity and excellence*. CASEL. <https://casel.s3.us-east-2.amazonaws.com/eMc8OmSr-CASEL-Equity-Insights-Report.pdf>
- Schwartz, H. L., Bongard, H., Bogan, E. D., Boyle, A. E., Meyers, D., & Jagers, R. J. (2022) *Social and emotional learning in schools nationally and in the collaborating districts initiative selected findings from the American Teacher Panel and American School Leader Panel surveys*. Rand & CASEL. <https://casel.org/sel-in-schools-nationally-and-in-the-cdi/>
- Search Institute. (2020). Developmental relationships: The framework. https://d2pck61xhq74q6.cloudfront.net/Resources-Hub/Beyond-the-Classroom/DevRelationships_framework_english-1.pdf
- Seider, S., Henry, D. A., Edwards, E. C., Huguley, J. P., Diaz, B., & Daza, K. (2023). Investigating the relation between critical consciousness and academic achievement for adolescents of color and White adolescents. *Cultural Diversity and Ethnic Minority Psychology*. <https://doi.org/10.1037/cdp0000613>
- Skoog-Hoffman, A., Coleman, B., Nwafor, E., Lozada, F., Olivia-Castro, S., & Jagers, R. (2023, January). *Building authentic school-family partnerships through the lens of social and emotional learning*. CASEL. <https://casel.org/sel-innovations-1/?view=true>
- Stanton-Salazar, R., & Valenzuela, A. (2001). Subtractive schooling: U.S.-Mexican youth and the politics of caring. *Contemporary Sociology*, 30(2), 210. <https://doi.org/10.2307/2655442>
- Stelitano, L., & Steiner, E. D. (2021). Social and emotional learning is the cornerstone: Exploring integrated, schoolwide SEL in two innovative high schools. *RAND Corporation*. <https://doi.org/10.7249/rra322-5>
- Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Development*, 88(4), 1156–1171. <https://doi.org/10.1111/cdev.12864>
- Teixeira, S., Augsberger, A., Richards-Schuster, K., & Sprague Martinez, L. (2021). Participatory research approaches with youth: Ethics, engagement, and meaningful action. *American Journal of Community Psychology*, 68(1–2), 142–153. <https://doi.org/10.1002/ajcp.12501>
- Toolin, R., Jorgenson, S., & Rasmeyer, S. (2021). STEM touchstones for teacher professional learning: An analysis of teacher professional development. *Electronic Journal for Research in Science & Mathematics Education*, 26(2), 32–55.
- Tuck, E. (2009). Suspending damage: A letter to communities. *Harvard Educational Review*, 79(3), 409-427.
- Tulsa Public Schools. (n.d.). *Tulsa way for teaching and learning*. <https://www.tulsaschools.org/about/teams/academics/tulsa-way-for-teaching-and-learning>

Tyack, D., & Tobin, W. (1994). The "Grammar" of schooling: Why has it been so hard to change? *American Educational Research Journal*, 31(3), 453–479.

Villavicencio, A., Conlin, D., & Pagan, O. (2022). Research-practice partnerships in pursuit of racial justice in schools: Navigating a hostile sociopolitical climate. *Educational Policy*, 37(1), 250–275.
<https://doi.org/10.1177/08959048221130353>

Vygotsky, L. S. (1978). *Mind in society*. Harvard University Press.

Watts, R. J., Diemer, M. A., Voight, A. M., Flanagan, C. A., & Christens, B. D. (2011). Critical consciousness: Current status and future directions. In *New Directions for Child and Adolescent Development* (Issue 134, pp. 43–57).

Wertsch, J. V. (1998). *Mind as Action*. Oxford University Press.

Yeager, D. S., Dahl, R. E., & Dweck, C. S. (2018). Why interventions to influence adolescent behavior often fail but could succeed. *Perspectives on Psychological Science*, 13(1), 101–122. <https://doi.org/10.1177/1745691617722620>

Zangori, L., & Pinnow, R. J. (2019). Positioning participation in the NGSS era: What counts as success? *Journal of Research in Science Teaching*, 57(4), 623–648. <https://doi.org/10.1002/tea.21607>