

DESIGN PRINCIPLES FOR COMMUNITY-BASED SETTINGS: PUTTING THE SCIENCE OF LEARNING AND DEVELOPMENT INTO ACTION

RICH LEARNING EXPERIENCES AND KNOWLEDGE DEVELOPMENT

Forum for Youth Investment

in partnership with Learning Policy Institute and Turnaround for Children
and in association with the SoLD Alliance

Emerging science tells an optimistic story about the potential of all learners. There is burgeoning knowledge about the biological systems that govern development, including deeper understandings of brain structure and wiring and its connections to other systems and the external world. This research indicates that brain development and life experiences are interdependent and malleable—that is, the settings and conditions individuals are exposed to and immersed in affect how they grow throughout their lives.

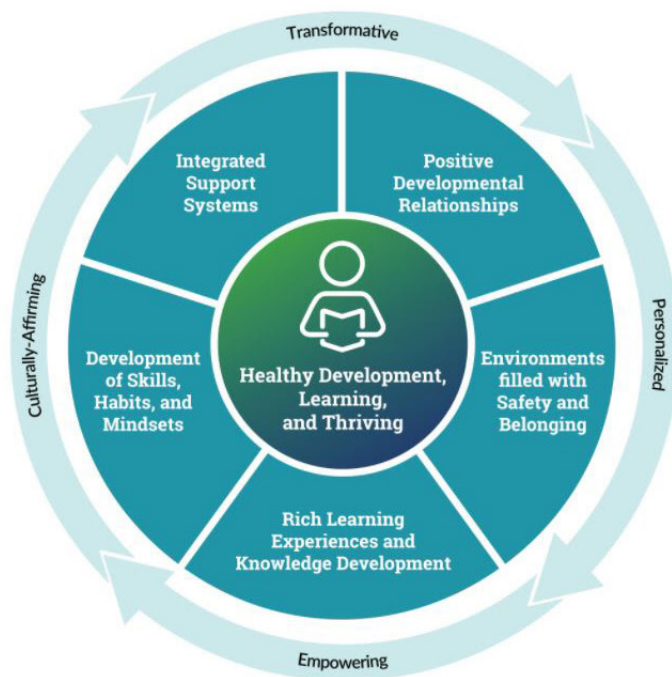
With this knowledge about the brain and development, coupled with a growing knowledge base from multi-disciplinary research, there is an opportunity to design learning systems in which all individuals are able to take advantage of high-quality opportunities for transformative learning and development. The situation facing our country today—sharp and growing economic inequality, ongoing racial violence, the physical and psychological toll of the pandemic—underscores the need to enable societal and educational transformations that advance social justice and the opportunity to thrive for each and every young person.

Design Principles for Community Based Settings: Putting the Science of Learning and Development Into Action, seizes this opportunity to advance change. It provides an overarching framework, the Guiding Principles or Whole Child Design, that can guide transformation of learning settings for children and adolescents.

The inner circle names the five science-based elements that, taken together, are the guiding principles for healthy development, learning, and thriving:

- Positive Developmental Relationships
- Environments Filled with Safety and Belonging
- Rich Learning Experiences and Knowledge Development
- Development of Skills, Habits, and Mindsets
- Integrated Support Systems

The outer circle of the graphic names the four essential conditions for equitable whole child design: all learning and development settings need to be transformative, personalized, empowering, and culturally affirming. In day-to-day practice, all of these elements need to be considered and actualized together.



This section is part of the larger playbook and focuses on what community-based settings can and do to foster Rich Learning Experiences and Knowledge Development. In this playbook, we explore how these principles are the nonnegotiable starting points for community-based settings, including how these principles are being explicitly used to engage and validate learners. This playbook also offers framing for how to think about these design principles in the context of the diverse structures and complex array of programs, organizations, and institutions operating in the “community” space. The full playbook can be found online [here](#).

RICH LEARNING EXPERIENCES AND KNOWLEDGE DEVELOPMENT

CREATING RICH LEARNING EXPERIENCES AND KNOWLEDGE DEVELOPMENT THROUGH AN EXPERIENTIAL LEARNING MODEL AT 4-H.

4-H is a national youth development organization whose mission is to give all youth equal access to opportunity. 4-H provides kids with community, mentors, and learning opportunities to develop the skills they need to create positive change in their lives and communities. It focuses on hands-on projects in health, science, agriculture, and civic engagement. It relies heavily on a five-step experiential learning model that volunteers can use to facilitate educational 4-H activities. “Learning by doing” is a commonly used expression in 4-H. It focuses on using inquiry-based strategies to support active learning. The five steps of their experiential learning model are:

Step 1: Experience. Youth engage in a hands-on educational learning experience. This step focuses on the importance of young people being actively involved and at the center of the learning experience. The young person is encouraged to learn by doing and provided with guidance and feedback by the adults. Adults encourage young people to problem solve by asking if-then and open-ended questions.

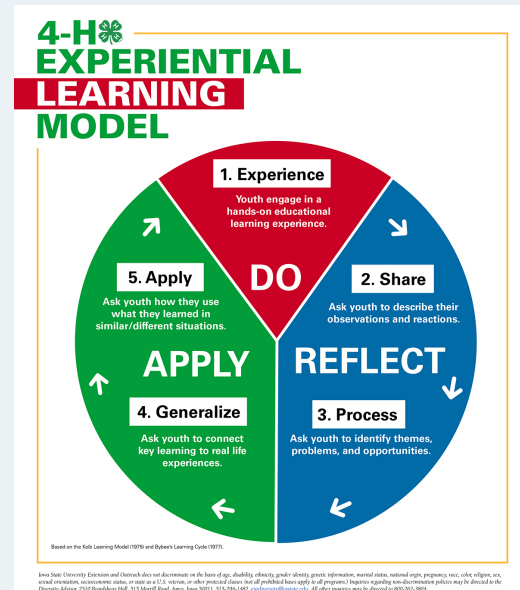
Step 2: Share. Youth are asked to describe their observations and reactions based on what they did/experienced during Step 1. Adults ask them questions on what they did, saw, felt, heard, etc.

Step 3: Process. Youth are asked to identify themes, problems, and opportunities. This is also an opportunity for the adults to help facilitate a debriefing of the experience. Adults ask open-ended questions to help them reflect on their experience, discussing what went well, what were the problems they faced, and what could be done differently next time. This is also an opportunity for adults to listen effectively to understand the young person’s thought process and provide feedback to support the young person’s unique style of learning.

Step 4: Generalize. Youth are asked to connect key learning to real life experiences. In this step, 4-H emphasizes the need for young people to be able to make a personal connection to the learning experience. The adults ask questions focused on what they learned, how it relates to other topics they learned in the past, or are learning at present.

Step 5: Apply. In the final step of this process, youth are asked how they may use what they learned in a similar or different situation. They are then asked how their learning relates to other settings in their lives and are encouraged to think how they can use what they have learned in other situations in the future.

Source: Adapted from Norman, M. M., & Jordan, J. C. (2006). *Using an experiential model in 4-H*. EDIS, 2006(9).



OVERVIEW OF RICH LEARNING EXPERIENCES AND KNOWLEDGE DEVELOPMENT

Learning is a function both of teaching—what is taught and how it is taught—and youth perceptions about the material being taught and about themselves as learners. Young peoples' beliefs, emotions, and attitudes have a powerful effect on their learning and achievement. Motivation is also critical to learning. Young people will work harder to achieve understanding and will make greater progress when they are motivated to learn something. However, motivation is not just inherent; rather, it can be nurtured by skillful teaching and coaching.

Practitioners that successfully motivate young people to engage in learning provide both meaningful and challenging work, within and across disciplines that build on young peoples' culture, and prior knowledge and experience. **Young people learn best when they are engaged in authentic activities and collaborate with peers to deepen their understanding and transfer of skills to different contexts and new problems.**

With these goals in mind, rich learning experiences and knowledge development can be supported by inquiry-based learning structures with thoughtfully interwoven instruction and opportunities to practice and apply learning, meaningful work that builds on youth's prior knowledge; experiences that are individually and culturally responsive, and well-scaffolded opportunities to receive timely and helpful feedback.

WHY RICH LEARNING EXPERIENCES AND KNOWLEDGE DEVELOPMENT ARE IMPORTANT: WHAT THE SCIENCE SAYS

Research from the science of learning and development shows that people learn by building on their prior knowledge and experiences, drawing on their individual, cultural, and community contexts, and connecting what they are learning to what they already understand. In order to make meaning of new ideas, individuals need to apply them to new contexts. People are also motivated to learn by questions and curiosities they hold—and by the opportunity to investigate what things mean, and why things happen. Below are the key findings from science that can inform practice.

Children and youth actively construct knowledge based on their experiences, relationships, and social contexts. The brain develops and learning occurs through connections among neurons that create connections among thoughts and ideas. Learners connect new information to what they already know in order to create mental models that allow them to make sense of new ideas and situations. This process works best when young people actively engage with concepts and when they have multiple opportunities to connect the knowledge to personally relevant topics and lived experiences, which is why culturally responsive practice is essential to the learning process. Effective practitioners support learners in making connections between new situations and familiar ones, focus attention, structure experiences, and organize the information learners receive, while helping them develop strategies for intentional learning and problem-solving.¹

Variability in learning is the norm, not the exception. The shape of each young person's growth is unique, as biology and development interact with experiences and relationships. While development generally progresses in somewhat predictable stages, children and youth learn and acquire skills at different rates and in different ways. Because each young person is unique, there are multiple possible pathways to healthy learning and development. Rather than assuming all young people will respond to the same approaches equally well, effective practitioners personalize supports for different individuals. Supportive learning environments avoid attaching labels to youth or designing learning experiences around a mythical average. When practitioners try to force all young people to follow a single sequence, path, or pace, they miss the opportunity to reach each young person, and they can cause them to adopt counterproductive views about themselves and their learning potential that undermine progress.

Motivation and performance are shaped by the nature of learning tasks and contexts. In contrast to long-standing beliefs that ability and motivation reside in the young person, the learning sciences demonstrate that young people are motivated when tasks are relevant to their lives, pique their curiosity, and are well scaffolded so that success is possible. Tasks are made doable when they are chosen to be within the learner's zone of proximal development (that is, when a task is attainable

with support from an adult), connected to what is already known, and chunked into manageable pieces that are not overwhelming. Children and youth are motivated to learn by questions and curiosities they hold—and by the opportunity to investigate what things mean and why things happen. Humans are inquiring beings, and the mind is stimulated by the effort to make connections and seek answers to things that matter. Learning and performance are shaped by the opportunities to explore actions and ideas, receive feedback from others and the environment, and continue to refine and practice with assistance until mastery is achieved.

Transferable learning requires application of knowledge to authentic tasks, as illustrated in the 4-H example at the opening of this chapter. Much information that is learned in school and community-based settings is forgotten because it is not practiced in ways that would allow it to be applied once the lesson is over. This inert knowledge is often the result of transmission-style teaching (a teaching style where the learner’s task is to passively acquire teacher-specified knowledge and skills) that offers disconnected pieces of information that are covered but not analyzed and as a result, are never actively used for a meaningful purpose. Knowledge that is transferable is learned in ways that engage youth in genuine, meaningful applications of knowledge: writing and illustrating a book or story, rather than completing fill-in-the-blank worksheets; conducting a science investigation, rather than memorizing disconnected facts that might quickly be forgotten. Such learning engages higher-order skills of analysis, synthesis, critical thinking, and problem-solving and allows knowledge to be understood deeply enough to be recalled and used for other purposes in novel situations.

Young people’s beliefs about themselves, their abilities, and their supports shape learning. Young people’s expectations for success influence their willingness to engage in learning. These expectations depend on whether they perceive the task as doable and adequately supported as well as whether they have confidence in their abilities and hold a growth mindset. Those who believe they can succeed on a task work harder, persist longer, and perform better than those who lack that confidence. Those who believe they can improve through effort tend to be willing to try

new things and to work harder when they encounter an obstacle, rather than giving up. These traits are developed in environments in which learners believe they are viewed as competent and trust adults to support them, and in which they do not feel threatened by stereotyping, bullying, or other challenges. A young person’s performance under conditions of high support and low threat will be measurably stronger than it is under conditions of low support and high threat. In such “identity safe” environments in which cultural connections are made and adults are responsive and supportive, young people’s performance and enjoyment climbs.

WHAT COMMUNITY-BASED LEARNING AND DEVELOPMENT OPPORTUNITIES CAN DO TO CREATE RICH LEARNING EXPERIENCES AND KNOWLEDGE DEVELOPMENT

There are three primary ways that community-based learning and development opportunities can co-create rich learning experiences and knowledge development. First, they can use **scaffolding and differentiation techniques** to support each young person’s individual learning style. Doing so also means that practitioners use **inquiry-based approaches to learning** that help young people be active and engaged learners. Adults also can **adopt a culturally responsive approach to learning** so that young people can learn better and are able to nourish their holistic selves.

How to Support Rich Learning Experiences and Knowledge Development

- ▶ Use scaffolding and differentiation techniques to support individual learning styles
- ▶ Use inquiry-based approaches to learning to help youth be active learners
- ▶ Adopt a culturally-responsive approach to learning

Use Scaffolding and Differentiation Techniques

The key to helping youth be successful learners is to keep challenge and frustration at levels that support growth and perseverance and to relate to youth in a way that empowers them. Adults can support learning by scaffolding, breaking down tasks, providing choice, and adjusting the program and activities to fit the interest, strengths, and needs of the young people. Secondly, practitioners can differentiate supports so that they are personalized to every youth. For community-based learning and development settings that engage groups of youth (afterschool programs, sports clubs, museum programming) practitioners need to consider group management and dynamics in order to foster cooperative learning.

Key Practices to Support Scaffolding and Differentiation

- ▶ Assess and adjust programming to fit the interests, strengths, and needs of young people
- ▶ Provide asset based personalized supports to encourage all young people to persevere and improve
- ▶ Manage groupwork to support cooperative learning

Assess and adjust programming to fit the interests, strengths, and needs of young people.

Adults should work together with young people to ensure that the learning experience fits their interests and needs. Adults may need to monitor the level of challenge, tailor supports accordingly, and encourage learner agency. It may involve breaking down tasks into smaller steps, asking effective questions, ensuring young people connect with prior learning, modelling problem solving skills, and providing choice and voice to pursue tasks according to their interests, among others.

.....

AHA! (Attitude, Harmony, Achievement), Girl's Relationship Wisdom Group guides teens to set goals and stop bullying and hatred and is delivered in a group mentorship setting. Adults work with young people to identify personal goals that fits their interests and strengths. Some of the questions that they ask throughout the semester include:

- What do you need help with?
- What are the biggest things you are having to overcome from your past?
- Where in your life right now do you feel like you are off course and need support to get back on track?
- If there was one thing in your life you could really transform, what would it be—a habit, something you're doing that you're not proud of?
- What's the thing you have the hardest time talking about?

These questions model how adults can effectively use open-ended questions to receive feedback, know where young people are at, challenge them accordingly, and adjust program content and structures to create a learning environment that is tuned according to the needs of the young people. Asking explicit questions about what was difficult to learn and understand, goals, and interests can help adults provide differentiated instruction, modify activities, and provide choices that are aligned to their needs. This also leads to young people being active partners in co-creating a learning experience that is more meaningful and tailored.

.....

Provide asset-based personalized supports to encourage all young people to persevere and improve. An asset or strengths-based approach is rooted in the principle that all young people have great potential, every young person learns and develops differently, and development is progressive and continuous. All adults should hold high expectations of all young people to attempt higher levels of performance through perseverance. Practitioners that empower young people to identify their strengths and needs can motivate and support them to constantly improve their skills and abilities. This approach to supporting young people recognizes that every young person learns and responds differently and has different strengths, and that systematic oppression may inhibit equitable outcomes for all.

The Philadelphia Wooden Boat Factory is an apprenticeship based maritime educational program. It uses a strength-based process to effectively scaffold young people and support them to stay motivated and persevere through challenging tasks. Program staff often hear youth saying they are not good at math when they need to use math skills to build or sail the boat. The adults adopt a strength-based approach that focuses on subtle but important changes when they interact with young people. They use both formal and informal opportunities to explicitly provide examples of their strengths and hold them to high expectations. This helps young people to know that they have a champion who believes that they can overcome the challenge and it motivates them to improve. The actual gains may sometimes be modest, but they have seen young people's pride soar when they are acknowledged for the work they have accomplished. Young people feel motivated to push even further. The adults in the program know that motivation cannot be provided through a fancy speech nor just good advice. Young people need to feel empowered and if their autonomy is negated, it may undermine how they value their own competence. (Note: as the time of the Playbook's publication, the Philadelphia Wooden Board Factory was no longer operating..)

Manage group work to support cooperative learning. Adults can structure groups in a way where young people are both having fun and are motivated to learn together and from each other in an emotionally and physically safe learning environment. Well managed group work has co-developed expectations and provides multiple opportunities for young people to work together in different group sizes and group formations according to their interests, strengths, and needs. Well managed group work also provides clear roles (e.g., facilitator, record-keeper, timer, spokesperson) and responsibilities that requires interdependence for the group members to be successful in completing the task. These group structures also help in learning as the content is more scaffolded, young people have opportunities to talk to each other and think together regarding the real-world problem they are solving together. These meta-cognitive and meta-strategic skills also help in better retention of knowledge that helps in learning more effectively.

For cooperative learning to be successful, adults also need to model these skills and facilitate a shared understanding of the purpose and goals of the group. These collaborative group structures also help in building empathy, problem-solving, etc., which are highlighted in the chapter on skills, habits, and mindsets.

Wyman's Teen Outreach Program (TOP), based in St. Louis, Missouri, emphasizes the importance of rituals and practices to promote a sense of group identity and cohesion. They emphasize the need to include getting-to know-you icebreakers and games to help all young people feel welcome and begin to form a group. Adults use name games, team-building activities, and other challenges that let young people get acquainted with each other, with the organization, and with all facilitators. These structures facilitate the development of positive relationships among young people and help them to learn from one another as they work as groups and solve real-world problems. This also helps in improving young peoples' intrinsic motivation and attendance, and they ultimately learn better. For example, youth at Wyman cook monthly meals for family members of cancer patients who are undergoing treatment at a local facility. This project involves planning, preparing, serving, and storing food for large groups as well as considering the unique needs of participating families. It provides opportunities to solve real-world problems by talking through problems supporting metacognitive and meta-strategic skills that is known to improve learning and academic outcomes.

Use Inquiry-based Approaches to Learning

Inquiry-based learning requires young people to take an active role instead of a passive role. This means going beyond receiving and memorizing information provided to them. Community-based programs, because of their voluntary nature, provide young people with a wide range of choices and thereby are well-poised to let young people take charge of what questions or problems they are curious about and want to investigate and analyze. Practitioners can support them by asking effective questions that enable them to problem solve, think through various considerations of possibilities and alternatives, and apply that knowledge in various settings.

Facilitate active learning by encouraging young people to deepen and apply their learning.

Active learning involves young people exploring problems and projects that they are interested in and reaching solutions by experimenting with multiple methods of inquiry and problem-solving across various types of community learning and development opportunities. These problems and projects benefit from being about real-world issues where young people are working collaboratively to solve complex problems. It requires them to take a more interdisciplinary approach and think holistically about the problem they are solving. An effective way to guide young people is to ask open-ended and if-then questions to define the problem, analyze, make connections with their previous experiences, make comparisons and inferences, generate solutions, and apply knowledge to solve problems. Asking questions to young people also enables practitioners to understand gaps in knowledge and accordingly adjust supports.

.....
YW Boston Youth Leadership Initiative, a project of YWCA Boston, Massachusetts, engages young people from high schools across the Boston area in the development of community action projects that address inequity in their communities, schools, and neighborhood. For example, a delegation at one school wanted to create social justice workshops for their classmates but were unable to gain support from the school administration. They were concerned they would not be able to build enough youth participation in the workshops. At a biweekly meeting, the adults helped the delegation walk through an inquiry based critical thinking process in which they matched the resources available to them to the needs of their project. Through this process they identified a teacher who they could use as a faculty liaison. They also created a plan for building youth participation (reaching out to affinity youth groups, e.g., Gay/Straight Alliance), using their personal networks, and a social media campaign.
.....

Key Practices to Support an Inquiry-Based Learning Approach

- ▶ Facilitate active learning by encouraging young people to deepen and apply their learning
- ▶ Provide regular and thoughtful feedback to support young people's learning
- ▶ Create opportunities for young people to reflect and revise

Provide regular and thoughtful feedback to support young people's learning. Regular, well-designed feedback on young people's work is a critical support for learning and development.² Without feedback about conceptual errors, the learner is likely to persist in making the same mistakes. In addition, the quality of the feedback is key. Studies find that gains are most likely to occur when feedback focuses on features of the task and emphasizes learning goals whereas neither nonspecific praise nor negative comments supported learning.³

Giving specific and descriptive feedback lets young people know exactly what they did well so they can repeat or build on it. It also recognizes their effort and improvement. Simply asking a young person to describe or explain what they have done, suggesting options, and asking questions that make them consider other alternate solution are all forms of giving thoughtful feedback. However, practitioners should also support young people in receiving the feedback provided to them and ask if there are any barriers that restrict them from applying the feedback.

Having opportunities to revise one's work in light of the feedback they receive is another important support for the learning experience. Revision of work is a critical aspect of the learning process, supporting reflection and metacognition about how to approach a particular kind of content or genre of tasks in future learning. Unless young people have opportunities to incorporate the feedback as they revise their work or performance, they cannot benefit optimally from the feedback that practitioners or their peers often take considerable time and effort to produce.

Create opportunities for young people to reflect

and revise. Providing opportunities to reflect on both the process of completing a task and its outcome supports young people to discuss their learning, stay motivated despite challenges, promotes metacognition, and helps them to continuously revise and improve. This can be accomplished by creating a learning environment where mistakes are treated as opportunities to learn and receive and utilize feedback. Practitioners can challenge young people with tasks that are consistently more complex and manage the complexity of the work based on the feedback they receive from young people. Creating opportunities for young people to present their work also facilitates reflection and revision.

Use Culturally Responsive Approaches to Learning

Culturally responsive learning environments celebrate the unique identities and backgrounds of all learners, while building on their diverse experiences to support rich and inclusive learning.⁴ This asset-based orientation rejects the idea that practitioners should be colorblind or ignore cultural differences, as these orientations can have harmful effects on learning and development. Instead, culturally responsive practitioners place young people at the center by inviting their multifaceted identities and backgrounds into the learning setting to inform content, instruction, and learning structures.⁵

Culturally responsive practitioners recognize the importance of infusing young people's cultural references in all aspects of learning.⁶ Doing so enables practitioners to be responsive to learners—by validating and reflecting the diverse backgrounds and experiences young people bring and also by building upon their unique knowledge and schema to propel learning and critical thinking. As practitioners implement culturally responsive approaches to teaching and learning, they have to be learners themselves of new cultures, new languages, and new traditions to foster and nurture linguistic, literate, and cultural pluralism and equality.⁷ Responding to and sustaining young people's cultures and backgrounds is necessary given the harsh fact that many marginalized young people in the U.S. have been subject to deficit approaches to teaching and learning, which have often sought to minimize, penalize, or eradicate the languages, literacies, and cultural ways of being that do not adhere to white, middle-class norms. Given this history and reality, culturally responsive approaches that center and celebrate diversity can disrupt these problematic tendencies while furthering belonging and inclusion.⁸

Key Practices to Support Using a Culturally Responsive Approach to Learning:

- ▶ Build bridges between young people's experiences and program content
- ▶ Promote racial-ethnic identity development, voice, and agency
- ▶ Facilitate critical conversations around equity and social justice

What is understood as normative in terms of knowledge, beliefs, or culture has been created by those in positions of power and continues to perpetuate if unchallenged. When adults create spaces for young people from marginalized communities to become active participants in the process of creating knowledge, it helps in dismantling this knowledge-power nexus. It is also not just about creating awareness among young people of injustices but a critical examination of the structural oppressive forces and the knowledge-power-privilege nexus that systematically works against marginalized communities, especially for our brown, black, and indigenous young people. It is about empowering them with critical cognitive skills to decolonize their minds, challenge existing socio-political and historical structures that control them, recognize that nothing is inherently wrong with them, and gearing them towards action. This means recognizing and broadening the definition of learning and skill development to incorporate the skills that young people from marginalized communities develop as they constantly negotiate and problem solve.

Culturally responsive approaches also support young people's development and learning. In its attention to developing a young person's sense of belonging, agency, and purpose, there is evidence that these approaches positively affect educational outcomes, including academic achievement, engagement in learning, and racial identity development.⁹ Furthermore, learners from all backgrounds benefit from inclusive learning environments that honor and celebrate diversity and inclusion.

These settings can not only help all young people learn and embrace the diverse backgrounds and cultures that make up the fabric of U.S. democracy, but also cultivate their awareness and orientations toward issues of injustice.

Cultural responsiveness in learning settings can be cultivated through rich learning experiences that build bridges between young people's experiences and program content; promote racial-ethnic identity development, voice, and agency; and facilitate critical conversations around equity and social justice.

Build bridges between young people's experiences and program content. To be effective learners, young people need to understand how the material covered is meaningful to them¹⁰ and believe that it is worthwhile to expend effort on tasks and activities. Adults can identify and explain the use, value, and importance of each task and do so in a way that young people are able to relate and connect to.¹¹ Practitioners can also create effective cultural hooks to the content being learned by young people as that helps them to reach their zone of proximal development. Adults can be intentional about bringing multiple perspectives, elevating the diverse experiences of young people, and provide opportunities to critique dominant cultural norms that is often considered normative. Using cultural references that represent the diverse racial and cultural backgrounds of young people helps them to connect the new knowledge that they are learning to their existing schemas and makes it more engaging. Practitioners need to go beyond just providing content or subject knowledge to provide useful analogies, illustrations, examples, and demonstrations that help make the content comprehensible to the unique experiences of young people.

Promote racial-ethnic identity development, voice, and agency. Positive development is about supporting young people to be agents of their own development, with support from adults. When young people who belong to historically marginalized communities are provided with opportunities to develop their racial-ethnic identity, it helps them to gain a sense of self and agency to question negative biases and stereotypes about them. Fostering youth voice involves finding ways for young people to actively participate in shaping the decisions that affect their

lives, while supporting young people's agency requires that adults help young people develop and realize their own goals, interests, and values). Projects focused on exploring identity and issues of social justice are often opportunities for this work, as they allow young people to explore their interests, take ownership of the learning process, and develop the critical thinking that enables them to challenge the status quo. To nurture youth voice and agency, young people need to be provided with more opportunities to lead, plan, implement, give feedback to adults, and be provided with specific trainings on youth rights, social justice, fundraising, and interacting with adults in power. In the vignette below, the adults in Neutral Zone share power with young people, supporting them to form a youth led council that makes decisions on how they would spend time in the program, what community-led efforts they will participate in, including fund raising. It leads to young people being more engaged and co-creating the learning environment in a way that is personally meaningful to them and supports their identity development, voice, and agency.

Neutral Zone in Ann Arbor, Michigan is a youth-driven center founded by a diverse group of teens to provide a space for social, cultural, educational, and creative opportunities to high-school teens. They established a Teen Advisory Council (TAC) to create an ongoing structure that advocates for meaningful youth voice across all the programs that Neutral Zone offers. In 2003, the TAC recognized that Neutral Zone programs consistently needed money to help achieve their goals and so added fundraising to its focus. In 2004, the TAC hosted a Gala event generating approximately \$3,000. They then created a system for distributing funds to support other programs at the Neutral Zone. Since that time, the TAC continues to raise and grant funds on an annual basis. In 2007, TAC members participated in the annual Neutral Zone program evaluation. Following a successful program evaluation in 2008, TAC became a standing committee of the Board of Directors, replacing the Program Committee, which was mostly comprised of adults. The TAC defines its purpose as: to drive Neutral Zone's program success through program approval, fundraising, grant-making, and evaluation. As part of the Council, young people build community, plan for the year, host meetings and activities that are meaningful to them, reflect on activities through the year, and recruit participants for the following year.

Facilitate critical conversations around equity and social justice.

Culturally responsive environments engage learners in project-based learning that asks them to critically analyze issues of injustice and take action to impact change.¹² These projects, which are grounded in the pursuit of social justice and explore the depths of systemic power and oppression, often launch by posing an essential question or equity-focused problem to young people or by asking them to identify equity issues impacting them and their communities. Young people have an authentic audience and purpose for their work and use their learning to impact change.

Community-based learning projects are one way practitioners can immerse young people in this form of rich and culturally responsive learning. As the term suggests, community-based learning allows young people to learn in and from their own communities by providing them opportunities to acquire, practice, and apply subject knowledge and skills in their neighborhoods and local surroundings. These projects often include problem-solving around a local issue or concern and give young people opportunities to develop productive mindsets wherein they see themselves as agents of change while deepening their knowledge and skills.¹³

Assata's Daughters is a black, women-led, young people directed organization that organizes Black young people in Chicago by providing them with political education, leadership, mentorship, and revolutionary services. They organize training opportunities for young black people to use their practical experience, build and or to work with coalitions throughout the city to tackle city-wide issues. They work with and for neighborhood which is where they locate as the real agents of power and change. They have several programs. For example, responsive organizing, environmental justice, training programs, and youth organizers through which they receive lessons on the tactics and strategies that can be used to address specific social issues like gentrification, police in schools, and capitalism. The young people who participate in these programs also receive training in urban farming and food justice and also learn basics of gardening, land conservation, food justice, and the importance of self-sustainment as a tool of resistance.

SUMMARY

The science is clear that learning and development is not linear. It is a progressive and continuous and it is crucial now more than ever before that all young people have access to rich learning experiences and knowledge development. Young people need to be in learning settings where every adult believes that every young person has great potential and the learning environment needs to be aligned to their strengths, interest, and needs. Young people can attain mastery of complex knowledge and skills when they are provided with opportunities to learn by experiencing, sharing, reflecting, and revising; solving real-world problems; and they take an active role in constructing knowledge and build on their prior experience and knowledge.

It is also crucial to adopt a culturally responsive approach to learning so that the diverse experiences and cultural norms of young people from historically marginalized communities are brought to the center to help them connect previous and new knowledge and to learn more efficiently. Young people also need opportunities to be active learners where instead of just receiving or memorizing information they are questioning, investigating, and analyzing to solve real problems and advocate for social justice and equity. They are working on project that are of interest to them and are personally meaningful to their sense of self and identity. In a rich learning experience, every young person feels motivated to problem solve and persevere despite challenges. They are provided with guidance and feedback that is supportive and strengths based. Young people are supported as they are challenged to try new skills and understand that mistakes are part of the learning process. Adults assess and adjust programming to fit the needs of young people and provided with structures for effective group work and collaborative learning.

TOOLS AND RESOURCES TO CREATE RICH LEARNING ENVIRONMENTS

- **Students at the Center Learning Hub** provides a **framework** and **resources** for personalized learning, developing student agency and voice, competency-based education, and learning that supports the real-world experiences of young people and enables them to see connections.
- **The Weikart Center**'s guidebook for **Cooperative Learning** and **Active Learning** lists several activities along with additional resources to support and inquiry based approach to learning as well as scaffolding and differentiation strategies. The Weikart Center also provides **assessment tools** to assess quality of learning environments and identify training needs.
- **The National Center for Quality Afterschool** has **resources and tools** for creating rich learning experiences around literacy, math, science, homework help, technology, and the arts.
- **Sanford Education Programs** at National University provides **lesson plans and activities** for pre-K-grade through grade 6 to create connected and inclusive learning settings.
- **Education Reimagined** provides resources for creating a learner-centered environment.
- **Abolitionist Teaching Network** provides various **anti-racist teaching tools** including podcast, ted talks, and tools to support creation of an anti-racist learning experience and knowledge development.
- **Culturally Responsive Education Hub** provides **resources and videos** on practicing culturally responsive educations.
- **AfterSchool KidzLit** provides **resources** for how to use literature and activities to build reading skills, deepen thinking, and abilities to work in teams by honoring diversity and viewpoints of others. It also provides **video tutorials** on practices related to engaging youth voice, engagement, and learning.

FOUNDATIONAL SCIENCE OF LEARNING AND DEVELOPMENT RESEARCH

Three papers synthesizing the knowledge base on the science of learning and development form the basis of the design principles for community-based settings presented here. For those seeking access to the research underlying this work, these papers are publicly available:

- Cantor, P., Osher, D., Berg, J., Steyer, L., & Rose, T. (2018). Malleability, plasticity, and individuality: How children learn and develop in context. *Applied Developmental Science*, 23(4), 307–337. <https://doi.org/10.1080/10888691.2017.1398649>.
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B. J., & Osher, D. (2019). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 24(2), 97–140. <https://doi.org/10.1080/10888691.2018.1537791>.
- Osher, D., Cantor, P., Berg, J., Steyer, L., & Rose, T. (2018). Drivers of human development: How relationships and context shape learning and development. *Applied Developmental Science*, 24(1), 6–36. <https://doi.org/10.1080/10888691.2017.1398650>.

END NOTES

¹Bransford, J. D., Brown, A. L., Cocking, R. R., Donovan, M. S., & Pellegrino, J. W. (2004). *How people learn: Brain, mind, experience, and school*. National Academies Press.

²Thorndike, E. L. (1931/1968). *Human learning*. The Century Co.

³Kluger, A. N., & DeNisi, A. (1996). Effects of feedback intervention on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, 119(2), 254–284.

⁴Stronge, J. H. (2018). *Qualities of Effective Teachers*. ASCD.

⁵Pledger, M. S. (2018). *Cultivating culturally responsive reform: The intersectionality of backgrounds and beliefs on culturally responsive teaching behavior*. UC San Diego.

⁶Ladson-Billings, G. (2009). *The Dreamkeepers: Successful teachers of African American children*. John Wiley & Sons.

⁷Paris, D. (2012). Culturally sustaining pedagogy: A needed change in stance, terminology, and practice. *Educational Researcher*, 41(3), 93-97.

⁸Powell, J. A., & Menendian, S. (2016). The problem of othering: Towards inclusiveness and belonging. *Othering & Belonging*, 1, 14-39.

⁹Brown, M. R. (2007). Educating all students: Creating culturally responsive teachers, classrooms, and schools. *Intervention in School and Clinic*, 43(1), 57-62.

¹⁰Roeser, R. W., Eccles, J. S., & Sameroff, A. J. (1998). Academic and emotional functioning in early adolescence: Longitudinal relations, patterns, and prediction by experience in middle school. *Development and Psychopathology*, 10, 321–352.

<http://dx.doi.org/10.1017/S0954579498001631>.

¹¹Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. *Journal of Educational Psychology*, 98(1), 209–218. <https://doi.org/10.1037/0022-0663.98.1.209>

¹²Duncan-Andrade, J. M. R., & Morrell, E. (2008). *The art of critical pedagogy: Possibilities for moving from theory to practice in urban schools* (Vol. 285). Peter Lang.

¹³Melaville, Atelia; Berg, Amy C.; and Blank, Martin J. (2006). *Community-based learning: Engaging students for success and citizenship*. Coalition for Community Schools.