it takes a whole society

opening up the learning landscape in the high school years

A REPORT TO THE NELLIE MAE EDUCATION FOUNDATION

Robert Halpern, Erikson Institute | February 2012

nellie mae EDUCATION FOUNDATION™

nmefoundation.org

Too many young people in this country lack access to the kinds of vital, productive learning experiences that should enrich their lives and provide a foundation for adulthood.

executive summary

In an effort to improve our collective prospects for the future, we need to dramatically increase the number of young people who possess the skills and knowledge needed to succeed in postsecondary education, work and life. Today, too many young people in this country lack access to the kinds of vital, productive learning experiences that should enrich their lives and provide a foundation for adulthood. Part of the problem rests with an over-reliance on one institution – high school – to meet the full range of developmental needs. More to the point, patterns of attrition show that high school may actually choke the learning experience for a sizeable percentage of young people. Nearly one-third of the four million youth who enter high school each year will drop out, while another third will earn a high school diploma and seek work (often lacking solid work force or post-secondary skills).

Clearly, we face an urgent need to open up the learning landscape in America. Specifically, we need to move away from a standardized vision of learning during the high school years and overcome the tendency to view academic and applied learning in "either-or" terms. To do so, we need to create a richer fabric of learning opportunities for a diverse population of youth. The "we" in this reform extends beyond traditional academic resources. A much broader segment of society needs to collaborate to find the domains and means to engage our young people in meaningful learning. Only then can we provide growth experiences that focus our young people's passion and energy.

REDEFINING THE HIGH SCHOOL LEARNING EXPERIENCE

Why is personal development so important during the high school years? This is the time when young people begin to set themselves on a path toward adulthood and forge what Erikson (1963, 1968) described as an "enduring identity." Literally, they test new waters by evaluating the culture at large and taking the first steps toward choosing a place in that culture. Ideally, they should be exposed to learning and growth opportunities that are rooted in active learning – opportunities marked by:

Experimentation: Ways to discern what to accomplish in life by exploring possibilities, interests, strengths and limitations.

Commitment: Understanding what will be required to achieve mastery in a specific endeavor.

Unfortunately, high school causes many of today's young people to experience "school weariness" rather than the opportunity to prepare for the

RETHINKING THE HIGH SCHOOL EXPERIENCE

Today's Experience Results in "School Weariness" for Many Young People

- Assumes college for all
- Delivers learning based on a common curriculum
- Provides learning within the physical setting of a high school

By Contrast, Good Learning Prepares Young People for the Future

- Recognizes the heterogeneity of young people
- Integrates hands-on experiences through applied learning
- Engages society in the broader role of providing meaningful learning

future. In this monograph, I will describe why and how the shift from today's reality to a more vital and productive learning experience should take place (see *Rethinking the High School Experience* on page 3). I will draw on my own and others' research to:

- Enumerate and illustrate the attributes of good learning experiences;
- Discuss how to make these experiences more readily available, both within and outside the constraints of current institutional structures; and
- Examine how other countries conceptualize and arrange for learning during the high school years.

A CLOSER LOOK AT THE UNDERLYING PROBLEM

Quite simply, high school learning is too narrow, fragmented, isolated and abstract to meet an increasingly diverse range of young people's developmental needs. Specifically, high school:

- **Assumes college for all**. Firmly entrenched in its century-old structure, high school learning remains oriented to preparing young people for four-year college. Yet, as Rothstein notes, only about "20 percent of all youth graduate high school fully prepared for academic college. That means 80 percent need other options and pathways."
- **Delivers a common curriculum**. High school curricular structures have not adapted to what we now know about how young people learn best. Moreover, learning is not oriented to the diversity in young people's strengths, interests, and life situations.
- **Isolates young people**. Not only does the physical structure of high school isolate young people from the larger world, so does the academic focus. Young people are not exposed to the wide range of roles, fields and disciplines that make up our occupational and civic culture. And the handful of disciplines that are emphasized are taught in a way that affords young people only a glimpse of what work in those (or any other) disciplines is like.

As a result, there is a kind of randomness in how young people move toward their futures. As they enter the final two years of high school, many youth are unclear about where they might fit in the larger world beyond their neighborhood and peer group. Young people are too often left on their own, without the guidance, solid information, and preparatory experiences to underpin good decisions. The problem can be especially acute for youth from working class families who may have less information – and less accurate information – than more advantaged peers about kinds of post-secondary learning, the range of occupations and the preparation needed for specific occupations.

WHAT GOOD LEARNING MEANS DURING THE HIGH SCHOOL YEARS

Young people learn by immersion and through direct experience, trial and error, practice and repetition. Therefore, good learning experiences should provide a somewhat challenging – albeit safe – transitional space. Also, recognizing that young people are at different places developmentally, good learning experiences should support a range of outcomes including:

Providing a bridge to the adult world. Introduce dimensions of the larger culture including occupations and work, types of communities, parts of the world, and social and political problems.

Reflecting real tasks with real consequences. Engage young people in genuinely useful work so they can experience a complete cycle of activity in a particular field.

Contributing to a community of practice. Enable participation in individual and team activity that leads to a collective goal.

Linking personal experience to something larger. Offer the opportunity to be immersed in social, moral and ethical issues at play in the larger culture.

Extending autonomy and ownership. Experience some degree of personal challenge that results in a developmental "stretch."

Drawing upon new capabilities. Exercise new cognitive and social skills through experiences that may require multiple elements, emerging problems or more than one solution.

INFUSING THE ATTRIBUTES OF GOOD LEARNING INTO HIGH SCHOOL

Fortunately, the process of reconceptualizing schooling has already begun. Scores of individual high schools and some high school reform organizations are addressing how to use the developmental tasks and qualities of good learning to "unfreeze" high school as an institution. Some, for example, are partnering with teachers who have industry experience and expertise. At the same time, in a steadily maturing self-renewal effort, career and technical education has embraced a variety of promising approaches to young people's learning.

Here are some of the ways these changes are unfolding:

Refining the curriculum. Specific high school networks such as Coalition for Essential Schools, well-known models such as High Tech High and Expeditionary Learning, along with lesser known high schools such as Washington, D.C.'s School Without Walls have incorporated selected innovative elements such as project-based learning and individualized learning projects into the standard high school experience.

Blending academic and applied learning. Based on the notion that learning in high school will remain "inert" as long as it stays inside the school walls, efforts are also underway to relocate a significant portion of learning experiences outside of school itself. This requires recruiting a variety of institutions and adult mentors to the educational process. The best known current example is the Big Picture schools where students spend two days per week in apprentice-like learning roles in adult work and service settings.

Engaging vulnerable learners. These efforts are designed to reignite an interest in learning among those who have been pushed out, dropped out or aged out of traditional learning settings. Activities often take place during non-school hours and emphasize applied learning in adult and community settings. Diploma Plus, in place in a number of cities across the country, includes learning and service in the community as a core element.

Injecting career and technical education (CTE). Based, in part, on a three-decade effort to reconceptualize CTE, Bottoms (2008) contends that the applied teaching strategies of CTE can be harnessed for broader high school reform efforts. In CTE, learning and producing are viewed in an integrated way. And increasingly, the concentration requirements

↘ *common denominators of good learning*

Four elements unite the most prevalent reform efforts:

- ↗ Their specificity,
- ↗ Their depth,
- ↗ The diversity of experiences, and
- ↗ The fact that they take place in the actual physical, cultural, intellectual, civic and occupational world.

and curricula has been updated to reflect industry-defined skills for changing occupations and occupational clusters – traditional areas such as electrical, machining, agriculture and criminal justice have given way to new areas such as medical technology, natural resources and computer-aided design. Most compelling, though, is the accumulating evidence that a vocational concentration in high school increases the likelihood of completing a rigorous academic core (Bottoms and Young, 2008).

Renewing youth apprenticeships. In an apprenticeship, the adult and youth are both active. They share responsibility for the tasks at hand, although each has a different role. The adult mentor imparts his or her knowledge and skills while the apprentice needs to display proficiency. The structures vary, ranging from a set number of hours per week to a more concentrated block of time such as full-time summer programs. To date, though, only about two percent of high school students have the opportunity to participate. This is due, in part, to the level of autonomy and control that stakeholders including teachers, local unions, and employers need to relinquish in order for the apprenticeship to be meaningful.

The positive impact of these changes is clear. Through work in these settings, young people begin to master distinct knowledge, skills, practices and habits and – along the way – acquire the social identity associated with that discipline or field. Often the setting itself provides ingredients for learning. With the curriculum embedded in practice and production, teaching and learning tend to reflect problems encountered in that discipline, and often reflect real-world constraints. While often demanding, its demands are graded, tied to young people's deepening engagement and growing skill in a field or discipline. The stakes rise gradually.

These experiences are notable for the ways in which they attend to the developmental tasks and needs of the high school years. They build background knowledge, broaden young people's vocational imagination, and deepen the foundation of experience that young people bring to later adolescence. The requirements of learning and working under complex, real world conditions help actualize new cognitive and social capacities. Young people's efforts lead to tangible products or performances that are often genuinely needed by someone – a business, a community, a particular population. At the same time, young people are afforded some ownership of their learning experience.

Young people's efforts lead to tangible products or performances that are often genuinely needed by someone – a business, a community, a particular population.

FOSTERING GOOD EXPERIENCES: IN AND BEYOND MAJOR INSTITUTIONAL SYSTEMS

Today most learning settings and experiences are decentralized – and thereby are spread throughout the culture, across sectors and settings – making them hard to see and imagine as a coherent enterprise. They also remain largely invisible to public policy. Elevating these learning experiences so they become an explicit option for middle adolescence will require a concerted effort. Specifically, we need to place individual clusters of experience in a broader societal framework and make them cohesive, organized, accessible and integral to our societal life.

Some of the reform needs to address the basic assumptions and structures of high school so that the avenues for infusing the attributes of good learning experiences into high school policies and practices are clear and concrete. Adult institutions need to be equally thoughtful and innovative. Across settings and over time, adult institutions need to be responsible for creating a kind of scaffolding for growth – making room for individually appropriate pathways, assuring a complementary, graduated, but intentionally connected mixture of learning, exploring, producing and assessment experiences.

- These tasks will require collaboration, mutual learning and mutual recognition across a broad spectrum of sectors that rarely work together in American society.

- Deliberate efforts will be needed to build trust, from institution to institution, sector to sector. Also, efforts will be needed to forge working partnerships around particular sets and types of leaning experiences.

- Stakeholders will have to develop mechanisms for formally recognizing and validating non-school learning experiences; they will have to expand and alter existing certification frameworks; and develop at least some overlapping metrics for considering proficiency and growth.

Location	Pathways Offered
Austria, Denmark and Germany	Strong work-based learning supported by industry and technical community colleges
Netherlands	Preparatory CTE beginning at age 12 with the option to apprentice at age 16
Italy	Less defined CTE system driven by civic themes such as runnning municipal recreation program or starting a temporary shelter for children
United Kingdom	Learning arrangements outside of school for part of the school day or school year

In addition to an enriched learning landscape, there are clear financial benefits to this collaboration as well. When non-school stakeholders contribute physical resources that schools cannot fund – such as studios, workshops, and tools that often feature specialized equipment and updated technology – the savings can be significant. As an example, the Rhode Island RiverzEdge Arts provides graphic design, photography, professional equipment and professional teaching artists that the local CTE program in Woonsocket could never afford to offer.

HOW OTHER COUNTRIES STRUCTURE LEARNING

Today, youth policy is more visible in Europe than in the U.S. As the following table shows, schools in a number of European countries emphasize a multi-dimensional set of learning supports, in many cases, non-formal learning practices that encourage individual choice and exploration. In some countries, there's a common schooling experience until the end of 10th grade or age 16 at which point pathways diverge. Data varies but generally about ⅓ take an academic route, ⅓ a defined vocational route and the remainder a more mixed pathway.

MOVING FORWARD: IT TAKES A WHOLE SOCIETY

Truly meeting young people's learning and developmental needs will require far more than a reconceptualized high school experience. It will require the wholehearted participation of a variety of institutions and sectors of society. A variety of institutions (and individuals) will have to learn to welcome and involve young people, and to share responsibility for their growth – businesses and non-profit organizations, cultural, scientific, arts and civic institutions, individual scientists, artists and craftspeople, training and apprenticeship councils, trade-specific groups and workforce development organizations, higher education and many others. And the more settings, the better.

Moving forward, several principles should guide how we recraft schooling for our youth:

- Individualized approaches to fostering knowledge and skill are more effective than one-size-fits-all approaches.
- Learning experiences rooted outside the school walls deliver valuable knowledge, skills and civic values that enable young people to transition to a complex, shifting adult world.
- Our youth is heterogeneous and cultivating diverse talents is critical to an interesting and enriching culture.
- Most importantly, institutions need to open up and adapt to young people, rather than leaving it up to young people to make their way – or not.

We need to foster and legitimize a diverse fabric of learning opportunities and settings for a diverse population of youth...

introduction

The structure of learning during the high school years in the United States urgently needs rethinking. Too many young people in our society lack access to the kinds of vital, productive learning experiences that would enrich their present lives and provide a foundation for adulthood. In this monograph I examine why we need to, what it might mean and what it will take to open up the learning landscape for young people. I argue that American society needs to move away from a standardized vision of learning during the high school years, and especially away from the tendency to view academic and applied learning in either/or terms. We need to foster and legitimize a diverse fabric of learning opportunities and settings for a diverse population of youth, to help young people find the domains in which and means through which they learn best. Drawing on my own and others' research, I will enumerate and illustrate the attributes of good learning experiences. I will discuss how we might make such experiences more readily available, within and beyond the constraints of current institutional structures. I will also examine how some other countries conceptualize and arrange for learning during the high school years.

I set the stage with a review of the developmental tasks of the high school years. Learning experiences are most motivating and useful when they support work on the distinct tasks of an age period, and this is especially the case for high school-age youth. Good learning experiences underpin the long list of consequential tasks that young people have to negotiate; from discovering strengths and limitations; to building background knowledge in important domains; learning about, testing out, and preparing for the adult world; and exploring who and what one might become.

The problem is that the very types of experiences that young people most need are the hardest to come by in American culture. It's a kind of Catch-22. Like every culture, ours needs young people to grow up. But because they are not yet grown up, because we cannot readily "see" their desire to contribute, and perhaps because we are not fully comfortable with who they are, we deny young people access to just what would be most helpful to them – immersion in the fullness and complexity of the adult world, its places and endeavors, occupations and disciplines, problems and dilemmas. As young people themselves report, "something is missing," though they are not sure what it is nor how to find it (Daniel, 2007, p. 77).

In public policy discussions that missing developmental experience is often framed in relation to the American economy; thus young people lack, and primarily need, workforce readiness, 21st century skills or the skills to compete in a global economy. In one respect this labor market focus is understandable. Looking beyond the current severe recession, the American economy faces shortages of skilled or semi-skilled workers in numerous technical and creative fields. Yet it is not just labor market demands which call for young people's exposure to and immersion in the larger world. As they move gradually into adulthood they will be the ones who hold and remake our country's artistic, scientific, civic and political cultures, shaping family, community and institutional life. Moreover, young people not only have much to acquire from the adult world, they have much to contribute to it, not least energy, creativity and idealism.

A core part of the problem that I will address in this monograph is our society's over-reliance on just one institution – school – to meet the full range of young people's developmental needs, and in particular to give them a reason to learn, to engage and, ultimately to believe. High school learning as typically structured is just too fragmented, isolated and abstract to meet young people's developmental

needs. It is too fixed on century-old curriculum and pedagogy, and too oriented, in an unreflective way, toward preparing young people for four-year college. Conversely, high schools have not been responsive enough to what we have learned about how young people learn best; oriented enough to the heterogeneity among young people in strengths, interests, and needed pathways; nor sensitive enough to the wide range of roles, fields and disciplines that make up our occupational and civic culture.

Scores of individual high schools and a number of high school reform organizations are working hard to address these problems. In a steadily maturing self renewal effort, career and technical education has also embraced a variety of promising approaches to young people's learning. Yet the fruit of all this work is hardly seen in national high school reform discourse. Ideas from both these strands of innovative work have to be brought from the periphery to the middle of reform discussion and initiative (Lerman, 2008). But better meeting young people's learning and developmental needs will require far more than a reconceptualized high school experience. It will require the wholehearted participation of a variety of institutions and sectors of society. In that light, we have to place school learning in a larger context and to broaden thinking about support for young people; in effect to bring a range of settings, actors, sectors and institutions into that thinking – businesses and non-profit organizations, cultural, scientific, arts and civic institutions, individual scientists, artists and craftspeople, training and apprenticeship councils, trade-specific groups and workforce development organizations, higher education and many others.

In a steadily maturing self renewal effort, career and technical education has also embraced a variety of promising approaches to young people's learning.

They are learning more about their own strengths, limitations and qualities, beginning to find their own voice, and beginning to forge personal goals.

developmental basis of good learning experiences

In the high school years young people begin to set themselves on a path toward adulthood and to forge what Erikson (1963, 1968) described as an enduring identity. These over-arching tasks in turn are composed of many specific ones. Young people are loosening ties to family, de-idealizing parents, and learning autonomy. At the same time they are seeking out new people, ideas, roles and institutions from whom they might learn and with whom they might identify. They are learning more about their own strengths, limitations and qualities, beginning to find their own voice, and beginning to forge personal goals. They are testing, reflecting on and evaluating the larger culture, and taking the first steps toward choosing their "home" in that culture. In effect, young people are moving beyond assigned dimensions of identity and forging their own "assignments".

During the high school years young people are beginning to choose what to invest in and to learn how to do so effectively. They are experimenting and also learning to commit. Experimentation is critical to self-discovery, to the gradual but central task of becoming "a person in one's own right" (Kleiber, 1999, p. 47). The young person is exploring possibilities and interests, strengths and limitations. He or she is learning about "the diversity of human work and human knowledge", and beginning to explore what he or she might want to accomplish in life (Kahn, 2006, p. 20; Yeager & Bundick, 2009). Commitment is equally critical to shaping the direction and solidity – if not the depth – of growth. Commitment allows for deeper participation in valued cultural activities. It teaches the young person what will be required to achieve mastery in a specific endeavor and reveals its less obvious satisfactions. Even if temporarily, commitment to some endeavor "provides an anchor in a sea of possibilities and allows one to define oneself as something in particular" (Schwartz, 2005, p. 294).

Both experimentation and commitment, but especially the latter, provide young people the chance to practice using, and through that practice to "actualize", the new cognitive and social capacities of middle adolescence. These include, for example, the capacity to formulate and follow through on personal goals, to reason more complexly, to plan, think through, sustain effort, self-monitor and correct, to take others' perspective and join with others in a common effort. They include the capacity to reconcile competing demands and goals, to understand the "dynamics of messy human systems" and to "respond to complex situations in mature ways" (Larson, in press, pp. 6, 8). Not least they include a range of growing emotional capacities, such as coping with frustration and managing one's emotions – using them to accomplish one's goals. Working to "actualize" this range of capacities is critical to both present and future endeavors. It gives young people the tools to shape their own development (Larson, in press). It readies them for further learning and for the evolving civic and work worlds.

During the high school years young people begin to construct the more enduring motivational structures that will carry them into adulthood, including values and ideals, goals and aspirations. Even as the peer group remains central in their lives, young people have to begin to loosen its grip and develop their

own internal referents for engagement and growth. This is both an integrative task, as young people draw on old and new sources of identification, and a creative one, as they forge their own distinct approach to the world around them.

Staying involved with learning becomes a more volitional act, and therefore represents an important task in itself. In particular, young people have to develop a self-narrative in relation to school that supports engagement, persistence, and risk-taking, and that gives school personal meaning. They have to find a way to understand school as a resource, not a passport or a set of obstacles. They have to find the disciplines in which they are most at home. More generally they have to maintain or renew an identity as a learner, both within and outside of school.

While living in the present, young people have to consider and begin planning for a path or paths beyond high school, whether more schooling, commitment to a vocation or both. Regardless of that choice, young people have to begin to attend to their vocational selves: to confirm and disconfirm interests, to think about and understand vocation (and vocational knowledge) in deeper, more differentiated ways. They have to learn about vocational possibilities, to learn about (and seek opportunities to practice) the skills and dispositions that employers seek, to understand what it means to be prepared for specific kinds of work, how one prepares and the length of time involved and, more tentatively, to see the relationship between work and social structure. Within that context they have to begin to think about and plan for the adult world more generally: to learn how it works, to discover its values and value conflicts, to discern what their role in it might be and, as noted above, to begin to acquire the knowledge and skills they will need in that world; that is, to embark on the lifelong process of acquiring mastery.

THE TASK FOR SOCIETY: PROVIDING EXPERIENCES THAT SUPPORT GROWTH

Although developmental tasks are usually viewed as belonging to individuals, they have to be understood to encompass not just what young people need to work on but what society needs to provide. As Erikson (1968, p. 22) describes it, forging identity is a joint project, "in the core of the individual and yet also in the core of his communal culture". Society has to be more than accommodating; it has to be active. Social institutions have to provide young people "connection with the world beyond the self" (Yeager & Bundick, 2009, p. 446). They have to provide "the resources that make…identity building possible, the situation of those resources in significant communities", and means of accessing them through the opportunity to play particular roles (Richmond & Kurth, 1999, p. 693).

In a broad sense, experience per se, in specific kinds of settings and across different settings, provides the ingredients for work on the tasks of these critical years, from locating new sources of identification, testing and anchoring ideas, discovering talents, experimenting and making commitments, to learning how to do and to make things, contributing and taking responsibility, converting new capacities into actual skills, habits and judgment. Young people need a variety of learning and contributing experiences, types of settings and relationships, in part because the meaning of a particular experience (or cluster of experiences) is a matter of timing, in part because young people are diverse and will find a good fit, psychologically and substantively, in different places.

Some common qualities of learning experience nonetheless seem helpful in stimulating growth. For instance, experience must be moderately challenging and yet also psychologically safe. It must involve tasks and problems that are both adequately structured and open-ended[1]. It must feel genuinely productive. Young people must believe that what they are working to master and produce has genuine

1. As Larson (in press, p. 14) notes, "to reach goals in the real world there is often no roadmap: problems are unstructured; there are obstacles and hidden rules; heterogeneous systems are involved".

Young people need a variety of learning and contributing experiences, types of settings and relationships...

meaning and value, personal, familial, or cultural; that their own roles are real – that they are counted on – and that their efforts are being evaluated honestly, on a defensible rather than arbitrary basis. As suggested above, young people need both opportunity to try on specific adult identities, to experience what it is like to be an architect or chef or photographer, an actor or director, and opportunity to stay with some endeavor, to acquire a deeper sense of it.

challenges. An anchor provides the source of motivation young people need to move ahead. As Bruner (1966, p. 69) observes, young people are motivated toward learning and mastery when they have opportunity for "deep immersion [sic] in a consequential activity – not a metaphor, not a simulation, not a vicarious experience". The community-of-practice dimension is important because it captures how people learn best – together, applying knowledge,

Young people must believe that what they are working to master and produce has genuine meaning and value, personal, familial, or cultural...

Some important experience has to take place in young people's own self-defined worlds, away from the constraints and pressures that adult institutions embody. Such worlds, both virtual and real, are no utopia and often bring their own stresses. But they are developmentally critical. Among other things, peer-oriented worlds provide opportunity to learn to develop mature peer relationships, to learn about intimacy, to create and own some space within the larger culture. Here adults need to follow along, provide support when asked and often stay out of the way.

Some experience nonetheless must be anchored in the adult world, and in some recognized community of practice. That anchor itself can take many forms: traditional academic accomplishment, exploring a vocation, providing a service, working with others to address a societal problem, commitment to a cause, working to master technical, physical or creative

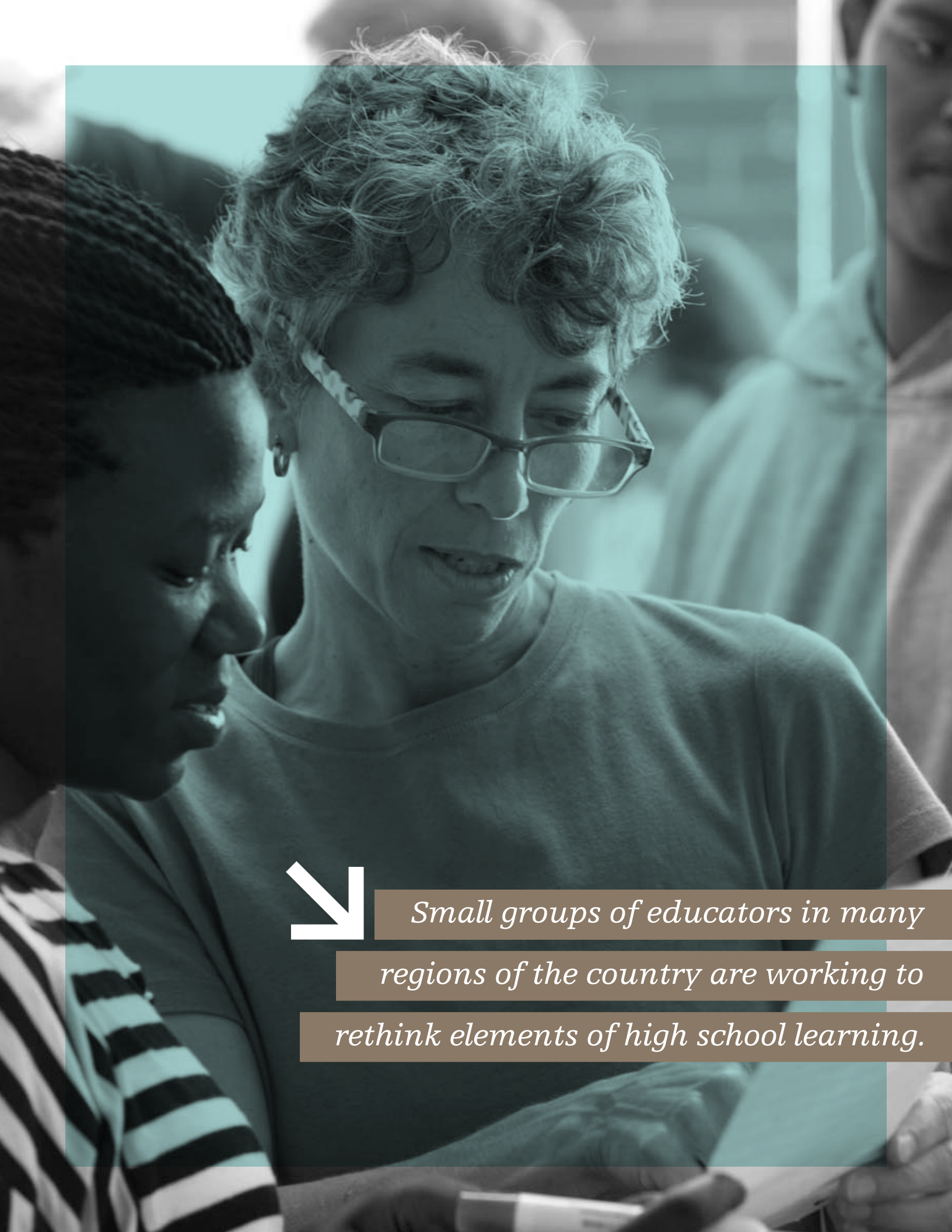
amidst relevant activity, in a fluid teaching-learning situation with more and less experienced members. It is where social recognition is born and grounded.

At times, learning experiences have to be actively mediated by adults. Young people may want and need control over their own decisions and choices, in other words their emergent "biography." But they also need, and as they move through adolescence increasingly themselves want, exposure to a range of adults and a variety of kinds of adult support. Adults provide important background information for decisions. Adults can encourage openness to new experience and provide young people confidence when they are working in ways and in domains that are outside of how they see themselves. Adults can help young people see what is important within or about a particular experience, or indeed that an experience itself holds value. Young people may need adult help to see more clearly what they are and are not prepared for, even to see that not everything is possible.

2. In reflecting on the distinction between peer culture and the adult world the director of an Italian youth center observes that "I've got the feeling that when young people join a [peer] group, it's more like they're buying a ready-made box, thoroughly equipped. They do not discover anything new. We have a group at the center that likes acting punk. And everything should be punk, from music to clothes, ideas, monographs…it's all packaged…" (cited in Cuconato, undated, p. 30).

Through such mediation, adults (and adult institutions in general) play a critical role in helping young people plan and prepare for next steps beyond high school. Young people get hints and clues about further learning choices and possible occupations from a wide range of sources. Some are informal and incidental, part of young people's social world in some way, such as knowledge gained of parents' occupations or a friend's uncle who is passionate about horticulture or automobile engines. Others have to be formal and systematic, provided through key institutions and sectors of society. For instance, deliberate exposure to work roles and to specific occupations during the high school years broaden and sharpen a young person's awareness of the wide range of occupations (and levels within them), their conception of what might be interesting, and their willingness to test out specific occupational domains. Extended contact with individual adults skilled in and passionate about some area of life provide models for possible future selves. As Meier (2006, p. 74) argues, "young people must be surrounded by grown ups whom [they] can imagine becoming and would like to become".

If development is indeed a joint project, the societal side of the equation is problematic in American culture. The experiences, guidance and ideas that young people need to begin to forge a mature self are hard to find. The channels young people need to move back and forth between childhood and adulthood are absent. The "work" that we have assigned young people – do well in school and stay out of trouble – is not compelling to many youth, in part because doing well in school is so narrowly defined, in part because this social role itself is too narrow.



Small groups of educators in many regions of the country are working to rethink elements of high school learning.

the limitations of current supports for young people

For some, and perhaps a majority of young people, high schools are a weak vehicle for identity work: for nurturing emergent capacities, helping young people explore alternatives and make commitments, helping them make meaning of activities and maintain the sense of an open future. Meanwhile the wide range of other potential supports, both individual and institutional, are not visible or accessible enough to young people, are inadequately recognized and supported in their efforts, do not know what their role might be or, in some instances, do not see it as their responsibility to make a place for youth. Most especially, neither schools nor other key institutions appear to believe in (or perhaps understand) the value of young people's full participation in adult endeavors. As Botstein (2008, p. 121) observes, "At 16, young Americans are prepared to be taken seriously and to develop the motivation and interest that will serve them well in adult life, yet adult society is too rarely ready to take young people up on this developmental offer."

Young people from disenfranchised communities are doubly vulnerable to the present societal context for youth development. Such young people are both more likely to experience schooling as problematic and less likely to have access to the complementary learning opportunities that might provide other constructive pathways through middle adolescence. Altogether, disenfranchised youth lack access to the varied kinds of adult mediation and support described earlier, and which Diemer and Blustein (2006) posit as the building blocks of personal, educational and vocational development. In other words such youth have less access to all the means for acquiring self and social knowledge and forging identity.

PROBLEMS WITH HIGH SCHOOL AS A LEARNING AND DEVELOPMENTAL SETTING

High school is not a monolithic institution by any means. There are scores of wonderful high schools scattered around the United States. Small groups of educators in many regions of the country are working to rethink elements of high school learning. But as a type of developmental and learning setting, with certain characteristic attributes, high school does not work well for many young people, if not a majority then close to it. The reasons are subtle as well as obvious. The problem is a relative one, not an absolute one; young people adapt and cope. Yet it comes at a particularly bad time – as young people are beginning to get organized for adulthood, or in some cases are being thrust prematurely into it.

The immediate evidence that high school is not working can be found in patterns of attrition from 9th to 12th grade, particularly among young people of color. Studies that have tracked (or compared) young people over time find a decline through the middle adolescent years in commitment to schooling, interest and motivation to learn, across subjects and for specific subjects; and a related decline in willingness to take on challenging learning tasks (Marks, 2000; Stipek, 2004; Vedder-Weiss & Fortuc, 2011). Quantitative data echo the qualitative findings. Of 4 million youth who enter high school each year, 1.3 will million drop out; 1.3 million will earn a high school diploma and will perhaps begin looking for work, but too often lack either or both a sense of direction and solid work force and/or post-secondary skills; and 1.3. million will enter post-secondary education[3]. Of this last group, about half will not complete a two or four year degree, due to some combination of lack of basic skills, lack of support, lack of purpose or focus, and/or lack of resources.

3. For a summary of numerous data sources see "Silent Crisis: Large Numbers of Youth Are Not Completing High School. www.housedems.ct.gov/jjpic/silent%20crisis-Janice%20Gruendel.doc

In some large cities the attrition process is even more dramatic, with no more than 50 to 60 percent of young people graduating and no more than a third of those proceeding directly to post-secondary education.

What is causing this process of attrition? The answer, in part, is in the sizable discrepancy between how high school-age youth learn best and the characteristic practices of high schools. School days are structured to prevent in depth engagement with learning material, and the forming of close learning-related ties with adults and peers (De Wit, Karioja & Rye, 2010). Learning experiences are fragmented: each day is divided into multiple, short, mutually disconnected units of disciplinary content. A high school teacher observes that the "education system usually throws a bunch of subjects" at young people, "with little connection either to each other or the kids themselves" (Ryken, 2001, p. 82).

Coverage of large amounts of factual material is paramount. Material is presented and then teachers are forced to move on quickly, preventing students' continued use and deepening application of new ideas, information and procedures, the means through which they are internalized, mastered and gain meaning. A high school teacher's typical load of 150 to 180 students makes it difficult if not impossible to organize in depth learning or writing projects. The pressure to cover too much material, combined with the large number of students to be taught, leave teachers too little time to build trust and credibility, and come to know students well (Valenzuela, 1999).

Schooling too rarely exposes young people to the vital questions, problems and tasks of those working outside the walls of the school, whether in a discipline or field, or in social or political realms (Eisner, 1999; Arenas, 2008). Learning remains locked in classrooms, even though, as Richmond and Kurth (1999) argue with respect to science, it is inherently difficult to learn to practice a discipline outside the community in which it is practiced as a vocation[4]. This inherent difficulty is exacerbated by the fragmented, often shallow way the majority of American youth experience the disciplines that are emphasized in high school. Complex fields, both their knowledge and practice, are over-simplified, reduced to "a ragtag collection of facts, concepts, problem sets…", "disconnected sub-routines, items and sub-skills, without a larger understanding of the context in which they fit and which gives them meaning" (Gardner, 1993, p. 169; Berryman, 1995, p. 196).

Instead of applying new ideas and information – as historians or mathematicians do – young people mostly learn "the results" of what professionals do (Ford & Forman, 2006). One youth reports that "when you're in school, the teacher gives you the lab manual and says, `Do what it says. Write [down] the data you collect. Turn it in'…Its something that somebody has already done, so the answer is already there" (Richmond & Kurth, 1999, p. 685). Teachers too rarely model the thought processes and strategies characteristic of practitioners in a discipline. The overall result is that young people leave school "with a very limited notion of what the disciplines they study are actually about" (Ford & Forman, 2006, p. 1).

The motivational structure and psychological climate of many high schools exacerbate the effects of substantive problems. Many young people, and the majority of youth of color, describe school as at once boring and anxiety-producing, impersonal and at times alienating (Stipek, 2004; McDonald & Marsh, 2004; Valenzuela, 1999). Youth have little opportunity to experience a sense of ownership, nor of deepening participation in a goal-oriented community. They have no voice in shaping what or how they will learn, or in what the goals of learning should be. A young person's growing skill and knowledge in a discipline is too rarely the basis for a more responsible role in the school context. Because young people have no voice in the school agenda, and only a passive role, they often believe that they have no stake in it (Haberman, 1997).

4. The authors point out that, in the school science setting, it is difficult for young people to learn the size of a field, where a particular question fits in the larger field, how long it takes to solve problems, how ideas are conveyed, how mistakes are handled, the varieties of technical language, etc.

Young people have to work hard to find motivation and report a lack of clarity or specificity in adult explanations of why they are studying material. Youth of color report that teachers', and sometimes counselors', low expectations, communicated in a host of ways, are crippling (Lewis, 2007). For too many such youth the emphasis is less on hard work than on "the absence of negative behavior". Simple attendance, which should be a basic pre-condition, "is thus transformed into a virtue" (Haberman, 1997, p. 500). Describing his experience in an advanced graphics course a Latino student tells Conchas (2001, p. 486), "my teacher…he goes up to [an] Asian student, looks at his work and says `You could do better'. With me, however, he simply says `It's all right'. But he never says I can do better, right? He is like telling me, for me [as a Mexican], it is all right".

social identities that are, paradoxically, both revolutionary and self-defeating". In effect they are too busy coping to do the work that will help them both get ready and become themselves. One by-product is "school weariness"; young people become fed up with school (Schnabel, Alfeld & Eccles, 2002, p. 182). And they may come to feel personally like failures, making them less likely to risk exploring other avenues of achievement, anticipating failure in those as well.

LACK OF SUPPORTS IN PLANNING AND PREPARING FOR THE FUTURE

Learning experiences during the high school years have to help young people plan and prepare for the future, as fluid and shifting as that future may be. As noted earlier, such preparation encompasses a range of tasks, including learning about and exploring the

Of 4 million youth who enter high school each year, 1.3 million will drop out; 1.3 million will earn a high school diploma...how about the other 1.3 million?

In the context of lack of opportunity for ownership, lack of clarity about relevance and limited opportunity to use what is learned, young people may be unwilling to risk ostracism or even ridicule by peers for working hard and demonstrating excitement about material. The pay off seems too distant, vague and uncertain (Harter, 1996; McDonald & Marsh, 2004). Paradise (1998, p. 272) observes that "instead of getting caught up in learning… students often spend their time, energy and concern handling face-saving interactions, or developing

enormous heterogeneity of domains and disciplines in the labor market; figuring out the kinds of future endeavors in which one might flourish; learning about and practicing the skills and habits that will be important in college and/or the workplace[5]. Yet, although these tasks are crucial for young people, they have received only modest attention from institutions that work with youth. That has left young people too much on their own, without the guidance, information, and preparatory experiences to underpin

5. For instance, in work settings young people will have to be active as learners, able to reason, problem solve, weigh options, use judgment and innovate at a higher level than in the past; almost in a craft-like way. They will have to demonstrate attention to quality and care in working on problems and products, to communicate ideas clearly, be able to demonstrate a skill or procedure to others, give feedback and in other ways teach others what they know and, at basic level, a show good attitude (e.g., willingness to work hard, desire to learn, punctuality, respect).

good decisions. As Resnick (1997, p. 252) observes, "in friendlier economic times we could largely rely on tossing young people into the economy as a way of socializing them and welcoming them into adulthood and responsibility. That option has now ended."

Schools are a central developmental institution and it makes sense that they should play a central role helping young people with vocationally-oriented developmental tasks. As a practical matter some two thirds of young people (100% of non-graduates, 50% of graduates) will enter the labor force upon leaving high school. But, as Grubb (1995) observes, in spite of the fateful vocational consequences of choices made during the high school years, high schools themselves seem strangely removed from both vocational concerns and the vocational world itself. With exceptions, high schools fail to treat vocation, work, discovering and building on interests and planning for the future as important curricular issues in and of themselves. Links to institutions outside the school are often weak; indeed principals, focused on issues internal to school life, tend to believe in keeping the outside world at bay (Muhlenberg, 2011).

High schools provide little vocational information or direction to young people in part because their staff lack the knowledge and connections to do so, in part because educators view direct entry into the labor force after high school as a negative outcome[6]. There is no parallel for workplaces to the well-developed networks that link high schools to college admissions offices (Bailey, 1993). In his interviews with students at a racially and socially diverse California high school Conchas (2006) found that students who did have nascent career interests had both no idea how to act on them and received no help from school staff in learning how to do so. These students felt "invisible" within the school.

Other institutions share responsibility with schools for important planning and preparation tasks. But with exceptions in a handful of states and cities, workforce development agencies too have thought little about and provided few resources to attend to the support needs of youth during the high school years. The Workforce Investment Act's youth provisions never developed into a coherent program for supporting young people's preparation for and transition into post-secondary endeavors. Labor unions have demonstrated little enthusiasm for supporting young people's vocational development. And employers of all kinds, though emphatic about young people's erratic learning and lack of work readiness, have done relatively little to help address this problem. Employers historically have made little effort to partner with career and technical education programs in the high schools, although that has begun to change in some states. And they, along with unions, remain reluctant to invest in

As a practical matter some two-thirds of young people (100% of non-graduates, 50% of graduates) will enter the labor force upon leaving high school.

6. Skilled and semi-skilled (now called middle-skill) technical trades continue to bear a stigma among many high school educators, even though they will constitute the majority of good jobs and at least some (if not many) young people might be happiest in them.

apprenticeship programs for high school-age youth, a particularly promising way of bringing young people into particular fields and beginning to build important work skills.

The result of general institutional neglect is a kind of randomness in how young people move toward their futures. As they enter the final two years of high school, too many youth are unclear about where they might fit in the larger world beyond their neighborhood and peer group. In some instances young people see with some acuity an adult work world that is changing in ways unattractive to them, a world with greater job instability, new productivity pressures, less clarity in career progressions. Many youth may simply not feel ready and able to make good choices (Smith, 2003). Yet choices are made all the time – about studies, time use and future plans – and the reasons for choices are often vague (Ball, Macrae & Maguire, 1999). In an illuminating study of one group of working class youth, Quinn, Lawy & Dimen (2008) found that, among many in the sample, accounts of their lives and thoughts about the future were fragmentary, shifting and ungrounded. Typically, the future was viewed in overly simplistic terms – either college success or a dead-end job.

Young people report receiving erratic adult assistance in learning about and thinking through options and decisions. When asked whom he relies on for such support a high school junior in one study of mostly work-bound youth notes "I'm not that involved with the school or with my teachers…I keep my space from them. I don't use them because they're teachers. I can't talk to them about my problems. I can't even talk with my parents. The only people I talk with are my friends" (Phillips et al, 2002, p. 210). Other young people report that the advice and encouragement they do receive from adults – including at times workplace mentors – does not fit, because adults do not seem to know them or their life situation well enough (Noonan, Hall, & Blustein, 2007).

Studies of working class youth find that they have less information and less accurate information than their more advantaged peers about kinds of post-secondary learning, the range of occupations and the preparation needed for specific occupations (Ludwig, 1997)[7]. Some youth who should be seeking out more competitive options fail to do so. David Feiner, co-founder of the Albany Park Theater Project in Chicago, describes one ensemble member's reaction to a visit to Macalester College, while the company was performing in Minneapolis: "She was angry that no one had ever done this [for her] before. And that she had no idea this [type of institution] was out there. And she was so angry because the woman at Macalester made it clear she was interested in her." Feiner and his wife, Laura Wiley, the co-founder of APTP, also discovered that ensemble members knew surprisingly little about college in general, for example the difference between and two- and four-year college (David Feiner, personal communication, 6/25/08).

Other young people appear to have unrealistic goals. The majority of young people imagine that they will work in one of a handful of highly skilled professions, whether or not it is realistic for them individually and in spite of the fact that those professions make up only a modest proportion of the labor force (Gray, 1997). When asked, the overwhelming majority of high school juniors and seniors say they plan on going directly to college, regardless of grades, class rank, test scores, or occupational aspirations (Rosenbaum, 2003). In his research on this problem, Rosenbaum (2003, p. 205) found that "guidance counselors now encourage all students to attend college, regardless of their past records, and they do not warn students if they have poor chances of success". As he later observed, "with our good intentions, we actually mislead the youth who most need our guidance" (Rosenbaum, Stephen & Rosenbaum, 2010, p. 3).

7. In analyzing data from the National Longitudinal Survey of Youth, Ludwig (1997) reports a strong association between amount and accuracy of labor market information and persistence in high school.

Demonstration is sometimes used to
illustrate techniques and standards
within a discipline.

learning experiences that meet young people's developmental needs

Although the United States appears to lack the will and organization to meet young people's learning needs, it does not lack the ideas and examples for how to do so. Indeed, interesting and engaging learning settings for youth are scattered throughout the very culture that seems unable to provide them in a coherent and systematic way. Sponsored by a wide range of institutions in a wide range of domains, four things seem most important about them: their specificity (or particularity); their depth; their heterogeneity, as a whole; and the fact that they take place out there – out here – in the actual physical, cultural, intellectual, civic, or occupational world.

These are experiences in which a young person has opportunity to learn and work in a sustained and gradually deepening way in a specific discipline, field of work or service, under the tutelage of, and sometimes alongside, an adult skilled in that discipline. Through that process he or she begins to master the distinct knowledge, skills, practices and habits, and perhaps also begins to acquire the social identity, of one who works in that discipline or field. Young people may be viewed as students, service-learners, interns, pre-apprentices, apprentices or workers, they may be paid or unpaid, but they are always engaged in both learning and producing something of real use to some sector of society.

Not surprisingly, learning/producing domains reflect the full richness and diversity of cultural endeavor. In my own research alone, I've studied youth learning through the visual, performing and literary arts, hand-crafts, media and design, the range of basic and applied sciences, community development, environmental stewardship, entrepreneurship, culinary arts, and sustainable agriculture. And there are many more domains, some explicitly vocational, for example health sciences, early childhood care and education, gerontology, biotechnology, information technology, construction, automotive technology and repair, engineering, aerospace, library and museum science, law and justice, to name just some examples. As implied by the breadth of fields, good learning experiences are rooted in an enormous variety of settings – studios, workshops and laboratories, hospitals and clinics, government offices, libraries, museums, theaters, bakeries, restaurants, urban gardens and organic farms, prairies and forests, on waterways, in urban neighborhoods and the streets.

The discipline or field, combined with the tasks at hand and the setting itself, provide ingredients for learning. These include specialized language, norms, practices and tools of the discipline, its customs, traditions, distinct products and performances. Adult mentors' deep knowledge of the field at hand, sense of intentionality and direction provide strong organizers for young people's experience. Adult mentors and, in some settings, more experienced learners, embody that discipline and serve as "exemplars", modeling the practice, general behavior and affective commitment of one with that particular identity. An adult mentor at Chicago's Free Street Theater notes that "there's always a diversity of skill levels in the ensembles…We're always leaning toward the most experienced practitioners and everyone

else is sort of slip streaming with them". He adds that newer participants "gain permission to take creative risks by seeing the more experienced practitioners" (Magnus, personal communication, 7/15/08).

The curriculum as such is embedded in practice and production. Teaching and learning tend to occur in the course of the work. Demonstration is sometimes used to illustrate techniques and standards within a discipline. A film making instructor might stop by a cluster of young people who are editing a video, see that they are not aware of a particular capability of the editing software, brings it up on the screen and demonstrates its use. Young people learn by immersion and through direct experience, through trial and error, practice and repetition. The adult mentor from Chicago's Free Street cited above notes that "they figure it out by doing it. You absolutely have to have the experience of doing it to get it. And we provide space for that" (Magnus, personal communication, 7/15/08).

Process and product are each important in good learning experiences for young people, and the two are closely tied together. Assessment is, typically, episodic, interwoven with learning, practice and experimentation, and emphasizes the processes leading to a solution and the lessons derived from it, as much as whether it is precisely right or wrong. Mistakes are understood to be part of the learning and producing process. The specific field or discipline provides teachers and learners a self-evident, if embedded, set of criteria for evaluation, and often a ready-made means to observe performance. As Albertson and

↘ *an illustration:*

Chicago's Albany Park Theater Project (APTP), founded by David Feiner and the late Laura Wiley, is a youth theater company that focuses on devising original theater based on real life stories. Ensemble members "serve as both ethnographers and artists" (Feiner, personal communication, 6/25/08). The creative process starts with a specific stimulus – a social issue or problem, the life story of a particular individual or family from the Albany Park community or even of an ensemble member. Youth go out to the community to talk to people about their experiences and life stories. Tape-recorded interviews are then transcribed and ensemble members take turns reading the transcript out loud, in part to hear the words of the story in different voices, in part to identify possible staging strategies, movement and music ideas, scenes, episodes, turning points that might serve as scaffolding, etc. Different youth notice different aspects of the stories as they are read back, creating what Feiner calls "a kind of collective intelligence". Youth may also do background research to situate the material "in a cultural, historical and political context".

The emergent clusters of material are "workshopped", both as theater training exercises and to find versions of a scene that work best: "Say there's 16 kids there that day; we might divide them into four groups and say, `You've got a half hour. Go away and come up with a way of staging this scene and then come back'. And we look at four groups' versions of staging of that scene, we videotape them and then we discuss what elements look best. We might complicate that activity by saying, `O.k., today you can't use any text; today is all physical but no words, today is all sound, it's got to be music'" (Feiner, p.c., 6/25/08).

albany park theater project

During these early play development phases a script takes shape, under adult guidance, along with choreography, sets and a score. Then a unique casting process begins. That process, intended to allow ensemble members to find their most effective role, involves a kind of negotiation among individuals' interest in a specific role, other ensemble members' thoughts about who would be best suited and adult staff perspective. Once roles are set rehearsals take place over a two to three month period, with adults in directorial roles, sometimes alongside a youth director. The whole production cycle may take six months, with defining experiences and types of learning evolving with the stages of the process. The actual performance experience is deepened by having ensemble members follow up with the audience, where they take questions about the production process and the play itself.

Feiner cites a number of keys to APTP's work. One is a balance in responsibility, initiative and decision-making between youth and adults. Youth are full owners of the works created and are understood as less experienced collaborators. Adults make the work manageable, "knowing how much of the larger process, how big or small a chunk, to break off every day". The theater-specific process – making interpretations, choices, changes – is viewed in part as a way of encouraging youth to be more active generally in their lives, to take responsibility "for the factors that shape their well-being that they perceive to be out of their control". That might include working through competing demands in their lives or beginning to take more responsibility for important relationships – with family peers, fellow ensemble members, school staff.

Another key is the openness of artistic and creative decisions all along the way: "There isn't someone in the room who knows the right answer from the beginning, including the adults…there are [still] better choices and better answers than others, but there is also ambiguity". There is always a mix of experienced and new ensemble members so there are always models available, whether for exercises that might not seem to make sense or ways of working together when critiquing a scene. David Feiner also describes the importance of conversation and reflection to the direct process of making theater: "we talk about the kind of community we want to be, the kind of people we want to be and also the way we're making art"…Feiner describes APTP as "a world [in miniature] where what you choose matters…where what you choose affects you and affects other people" (Feiner, p.c., 6/25/08). The whole process calls on and nurtures a variety of kinds of qualities: "they [ensemble members] learn to work together to solve complex problems that don't have a right answer…and they learn to do that in a way where they don't see the ultimate fruition of their work for a very long time".

Davidson (2007, p.15) put it, in discussing the fields of photography and ceramics, "There are clear consequences if the technical processes involved…are not properly sequenced or well carried out. Cause and effect are clear and absolute; no concept is good enough to survive poor execution".

GOOD LEARNING EXPERIENCES AND THE DEVELOPMENTAL TASKS OF THE HIGH SCHOOL

Regardless of field or discipline, learning settings like the Albany Park Theater Project share one critical attribute: their learning features fit the new capacities, developmental tasks and preoccupations of middle adolescence. For instance, such settings provide young people opportunity to exercise emerging cognitive and social capacities. They provide opportunity for ownership of learning experience, but in a structured format and in a reasoned way. As described above, such settings provide new places, roles, and purposes for learning, including opportunity to contribute to and shape the culture at large. They introduce young people to the variety and texture of the adult world. Through these experiences young people may get a clearer sense of "what really is at stake in becoming an adult" (Botstein, 2008, p. 120).

Learner-Centered. Because learning as opened up this way is a diverse enterprise, encompassing a wide range of disciplines, fields, situations and settings, it is able to account for diverse interests and strengths among youth. It can also play a different role for youth who are at different places developmentally. While often demanding, its demands are graded, tied to young people's deepening engagement and growing skill in a field or discipline. The stakes rise gradually. While it encompasses the social imperative to prepare young people for further learning, work and civic life, it is structured to do so incrementally or cumulatively. It can accommodate the possibility that, for some young people, a particular learning experience provides a moratorium, a place to be engaged but without the life consequences of high stakes settings.

Work on Real Tasks with Real Consequence. Though learner-centered in some respects, learning/producing tasks reflect problems encountered in actual work in a discipline, and often reflect real-world constraints. Young people may be required to conceptualize, design, construct and apply knowledge or skill within constraints of time, resources, production schedules, and deadlines. At the same time, young people get to experience a complete cycle of activity in a particular field. Youth involved with product design for Sweat Equity Enterprises, a design workshop created by a fashion designer, go through a process that begins with market research and open brainstorming, moves to conceptual plans, hand sketches, computer mock ups, prototypes, group critiques and refinements (Daniel, 2007).

Work on tasks is practical and useful, not make-work. In the Nature Conservancy's summer residencies for urban youth tasks have ranged from restoring native shellfish populations to bays and estuaries to surveying the behavior and population of endangered bird species. Young people's efforts lead to tangible products or performances that are often genuinely needed by someone – a business, a community, a particular population. Youth write and produce documentaries, prepare marketing plans, build wooden boats, grow vegetables from scratch and sell them in a farmer's market, study the causes of public health problems, collect data on social issues, restore prairies, clean up rivers, create sculptures. Young people are given serious responsibility. They become integral parts of the functioning of restaurant kitchens, science labs, medical clinics, and dance companies.

Opportunity to Be Part of a Community of Practice. Good learning experiences for young people provide opportunity to be both part of and responsible for contributing to a specific community of practice. When, for instance, a young person does background research for an environmental remediation effort, or when he or she learns how

to record carefully the procedure just used in a laboratory, that young person is becoming a member of the communities that do these things. In such communities learning and work are both individual and collective

Young people may have to step outside of themselves, accomplish tasks with others, be responsible to others and place their self in the service of a collective goal. David Feiner of APTP notes that his young theater artists learn to work in a way that "makes room for several different peoples' ideas…they learn to look at other peoples' ideas, suggestions, solutions to problems…they learn how to operate in a terrain where we can assess one another's choices and one another's actions". A Marwen Arts Art at Work teaching artist describes it as "chipping in, pitching in, what does the project need to move ahead? If you're cutting tile one hour, you're helping choose colors the next, then helping somebody cut glass in the next hour" (Gaspar, personal communication, 7/2/07).

Opportunity to Link Personal Experience to Something Larger. Good learning experiences provide young people the conceptual and technical tools to enrich, alter and sometimes contest the larger culture. Through the arts, social documentary, print journalism and other media, young people tackle (and learn how to tackle) cultural material that might be controversial, and address injustices that they, their families or communities, or others, experience. Youthful ensemble members in the Albany Park Theater Project learn that theater can be a powerful vehicle for illuminating the roots and consequences of injustice. In gathering background material for molding into a play, ensemble members have interviewed undocumented day laborers and survivors of the Cambodian genocide. Young documentary makers at New York City's Education Video Center (EVC) have focused on such topics as the challenges facing undocumented youth, the corrupting influence of

↘ *an example: acme animation*

A new type of learning community is reflected in ACME Animation, founded by Dave Master, an internet-based program that works both independently and with high schools around the country to bring young people into the animation field. Youth begin at an auditioner level, proceeding to intern and apprentice. They do required exercises, post their own work, and build a portfolio, receiving feedback from peers at their own or more advanced levels and from professional animators who volunteer their time to the program. There are live instructional telecasts beamed into schools and periodic "master classes" by animation professionals. Young people earn the right to receive professional feedback by providing detailed critiques of peers, creating a "chain of mentorship". Work in progress is posted in specific galleries, making it open to feedback. One of the adults who supervises the program notes that "You're not just getting it [feedback] from above but trying to teach it to someone else as well. You have to really think very carefully about what you've learned". The web site is structured so that everyone can see the professional comments received by everyone else, exposing the whole community to the "highest technical standards, the language of the guild, and the art of mentoring. They also get a taste of the hierarchy and work culture of the animation studio (Smith, 2006, p. 3).

credit cards, racial stereotyping in popular culture, police violence and the (lack of) connection between school and work. As EVC founder Steve Goodman observes, when young people working on documentaries learn to ask questions they are also learning to raise questions (personal communication, 1/5/07).

Young people may have opportunity to join debate about ideas and practice in the field in which they are learning and working. At times young people have opportunity and responsibility to wrestle with the social and moral issues that are at the heart of a particular type of endeavor or even of Americans' common life. In their environmental remediation work on the Bronx River, under the auspices of Rocking the Boat, young people learn about how the river came to be polluted and how to turn frustration with that knowledge to productive ends. In Oregon's Apprenticeship in Science and Engineering (ASE) program, apprentices working for Steve Strauss, a plant geneticist, grapple first hand with the issues in biotechnology and genetic engineering.

A Mixed Quality To Support Identity Work. Good learning experiences accommodate the seemingly contradictory qualities of experience needed by young people. They often have a hybrid structure which allows for both experimenting and committing, learning and contributing simultaneously. Roles are real – young people are viewed and treated as budding artists, scientists, chefs and wood-workers – but also have a "what if" quality. Young people can both practice and begin to inhabit an endeavor, pretend to be and really be something. Even when more explicitly vocational, such experiences still have a developmental orientation. They are concerned with forging identity, fostering a sense of vocation, an orientation toward the work- and broader adult world, and a sense of possibilities. Work-like qualities may be combined with opportunity for self- and social exploration.

Learning experiences are marked by some constraints but simultaneously opportunity for shaping the experience – questioning, redesigning, protesting, redefining assumptions and givens; in other words for reality-testing within some limits. Graham (2009, p. 11) describes these as enabling constraints, "a balance of sufficient organization [and] sufficient openness…not what must be done but what might be done". In creative enterprises, for instance, young people's own lived experience is treated as a legitimate basis for interpreting and evaluating the world around them (Greene, 1995). At the same time, their emergent personal history becomes interwoven with, and is thus enriched and altered by, the history of the setting and discipline. In describing young musicians' experience in Venezuela's El Sistema, Booth (2010, p. 11) notes that "craft grows within the enabling constraints of deep traditions and demands of instrument and music".

Good learning experiences teach young people to work with deliberateness and care.

Young people are granted some autonomy, but where and when it makes sense; some ownership, but for those things it makes sense to have ownership of, in other words ownership of a reasoned kind. An adult mentor with Chicago's Free Street Theater notes that "we make our expectations very clear and there's wide area in there to explore … Our experience is that if a lot of people feel safe inside

[of the community created] then they can really blossom and explore" (Magnus, personal communication, 7/15/08). He adds that young people seem to "feel freed by understanding exactly what is expected. It's freedom within boundaries". The teaching artist for the Student Production Workshop at New York's Roundabout Theater notes that adults have to strike a balance between affording youth a sense of ownership of the work and helping nurture a sense of integrity derived from joining a tradition and internalizing its standards. He notes that "we try to make the line between the adult being more active and less active as organic as possible" (Keith, personal communication, 4/19/07).

Multi-Dimensional Experience. Good learning experiences, though specific, are multi-dimensional. Very specific experiences sometimes call on (and build) knowledge in a variety of domains. Working on a team that is building a small bridge across a creek calls on knowledge of "geometry, strength of materials, planning and sequencing, cooperativeness, structural design, spatial relationships, aesthetics, mechanics…" (Renzulli, 2009, p. 9). Experiences tend to draw on and engage many parts of the self – the intellectual and the practical, the affective, the moral and often the physical. They have both an instrumental and an expressive quality and are marked by "a characteristic intensity, emotional involvement and direct motivation based on the immediate self-evident value of what is being learned" (Paradise, 1998, p. 27x). Young people's description of what they are doing when they are in the middle of building a boat or working on an experiment in a laboratory is often engaged, urgent, passionate.

The complex and mixed qualities of these experiences make it more likely that the content and skills developed will be integrated into "the enduring structure of the learner's repertoire" (Renzulli, 2009, p. 5). New feelings are recognized and gradually integrated into the self. In a group of young (16 and 17 year old) child care apprentices in England initial growth focused on three issues: "recognizing the developmental role of the nursery nurse, keeping their own feelings under control in the face of crisis and provocation, and developing a suitable disposition for child care work". The young women told researchers that "the patience and self control they had learned in the nursery was now part of their persona at college and at home" (Colley et al, 2003, pp. 480,482).

Opportunity to Exercise New Capacities. Tasks demands in good learning allow for exercising –and actualizing – new cognitive and social capacities. The work at hand might embody multiple elements, emergent problems and more than one solution. It may require different kinds of reasoning or modes of representation. Youthful cabinet-makers and industrial designers, for instance, learn to use hand-sketching to express initial ideas and plans. Tasks demand, and therefore creates opportunity to develop, different kinds of resourcefulness – patience and endurance, capacity to examining one's own beliefs and ideas, knowing how to find information and when to seek assistance, learning the particular skill needed to complete a task or project. David Feiner of APTP notes that his young theater artists "work on tasks that may not come to fruition for weeks or months".

Good learning experiences teach young people to work with deliberateness and care. Young people's work, though in development, is judged by the established standards of a discipline. A scientist-mentor with Oregon's Apprenticeship in Science and Engineering (ASE) program, notes emphasizing to youth that, "If you screw up the experiment, well then you've got to do it again…there's a lot of personal responsibility as a scientist; you're in this because, for now at least, this is your identity, you want to know the answer" (Strauss, personal communication, 5/24/07).

Gradually Increasing Demands. It is accepted that young people will take varied amounts of time to master and be able to demonstrate a set of

knowledge and skills. That means that assessment of proficiency occur at different time points for individual youth working in a particular discipline. Adult mentors do not expect young people to demonstrate professional standards until they are judged ready. In St. Paul's Urban Boat-Builders youth start out by making tools or items relevant to the eventual boat-building process, such as wooden mallets, bevel gauges or canoe paddles. Each has to meet both a functional and aesthetic standard before a young person can move on (Wenger, personal communication, 6/27/07). In preparing for work on a commissioned sculpture, new apprentices in St. Louis ArtWorks spend some weeks learning and practicing 3-D design and making models. These design exercises serve as grist for later full-scale production.

Personal Challenge. Over time good learning experiences demand gradually more of the self, and provide young people opportunity to use gradually more of themselves. The founder of CTVN observes that "it's creative and exciting when you come up with an idea but then it's like `the real world'; to fashion it into something is hard work" (Zaccardi, p.c., 7/8/08). David Feiner of ATPT describes young theater artists "using their voices, their bodies in ways they're not used to doing elsewhere… expressing themselves in ways they're not used to elsewhere, beginning to become emotionally vulnerable" (Feiner, personal communication, 6/25/08).

Young people gradually acquire greater responsibility for thinking about and reflecting on their learning experiences, just as they have to learn to use the setting and its tasks as learning resources. They are afforded opportunity and conceptual structure to describe and reflect on what they doing and how they are growing, to reflect on themselves as learners, makers, and team members. Young people have to account for their experience – in effect making their learning and producing explicit (Taylor, 2006). For instance, painting and drawing apprentices in Chicago's After School Matters will present almost finished work to peers, describing what they were attempting to achieve, what they struggled with, how they addressed problems, and how successful they judge the final product to be. In providing feedback, an ASM instructor and peers will help an apprentice "name" and describe his or her experience, and place his or progress in the larger framework of the field.

THE PREPARATORY AND VOCATIONAL ROLES OF GOOD LEARNING EXPERIENCES

Good learning experiences provide background knowledge for planning and decision-making and expanded, more accurate and grounded reference points for aspirations; a more finite and at the same time more generous and concrete sense of possible occupational choices. Collectively, these experiences provide enough variety of disciplines, social and vocational roles for most young people to discover talents and confirm or disconfirm nascent interests.

Conversations with mentors can help young people better understand the pathway to post-secondary study or work in a particular field or discipline. Mentors can help young people align ambitions and better think through the mix of formal and non-formal learning and work experiences they will need to prepare for specific occupations (Ryken, 2006). As young people come to understand the work that one needs to do to join a discipline or accomplish a particular goal, they can compare that to what they have been doing and plan to do in their educational lives. Mentors serve as sources of new social connections, and may know the college programs in their field.

Good learning experiences help a young person see that vocations (and vocational cultures) are different from each other. Adults might share their own professional experiences, giving young people a more specific sense of what it is like to work in a particular field. An architect who mentors youth through Marwen Arts' Art at Work program, notes

that he involves his young apprentices in some of his own daily activities in part because he wants them to observe how he thinks and works on tasks (Yu, personal communication, 6/8/07). An apprentice to a plant geneticist learns over the course of a summer that a good part of doing science "is in all the hundreds of gory details, from how you pipette properly to how you make up the chemistry of a control for a particular experiment" (Strauss, personal communication, 5/24/07). This gives the young man a much deeper sense of the day in, day out work of science.

A young person might be able to observe the range of roles in a particular kind of work setting. A young science apprentice observes that "Since I've been working in the soil bio-physics lab, I've noticed that everyone is working on a different project" (Richmond & Kurth, 1999, p. 684). An oceanographer who mentored a young woman in her lab for Oregon's Apprenticeship in Science and Engineering (ASE) program, notes that "I tried to stay aware of my lab as a context for her [learning], to make sure she was exposed to a variety of projects and parts of the work, to invite her to seminars…to see that there is a large field out there" (Chase, personal communication, 6/28/07).

Particular experiences may introduce young people to newer (or, occasionally older and revived) ideas, occupational fields, social problems, ways of using disciplinary knowledge and skill that have not yet found their way into career and technical education curricula. In New York City, for instance, Rocking the Boat, a traditional boat-building program, has an on water program that places young people with a variety of environmental stewardship projects on the Bronx River. Graduates of this program have gone on to study and work in a variety of disciplines associated with such work, for example field biology and sustainability studies.

Creative and cultural work in such fields as performance arts, design, broadcasting and film, music, game development, and web site development, are becoming a viable part of the economy. Young people have been drawn to these fields and often created new ways of working in them. (Guile, 2006, observes that there are many "architects" of creative and cultural work, and young people themselves are often in the role of creative and technical leaders.) At the same time, young people who find a home in this sector typically need help understanding how one might make a career in it, especially since many adult practitioners cobble together a living from many sources.

In a generic vein, good learning experiences can deepen understanding of what work is and what it means, its rhythms, distinct pleasures and difficulties. Young people might learn that there are different kinds of days at work – good and bad, faster and slower, rougher and smoother. Adult mentors recognize the young person as a learner, and are more likely to explain the logic of the setting, why tasks are done the way they are, why people relate to others as they do, why certain tasks are or are not important. They are more likely to teach the small things critical to socialization into particular work settings, for instance "the cultural significance of tools and tool maintenance…the rudiments of asking questions, seeking assistance, projecting a professional image" (Nelson, 1997, p. 85). Young people sometimes have opportunity to reflect on the nature of work itself with mentors, for example discussing the idea that different kinds of productive activity have different social consequences (Arenas, 2008).

This task will require work within dominant institutional structures, especially schools, and a concerted effort to create new structures.

fostering good learning experiences, in and beyond major institutional systems

Making good applied learning experiences a more central part of adolescence in the United States will require both moral commitment and social imagination. While it is a strength of the learning settings described in the previous pages that they are decentralized, spread throughout the culture, across many sectors, these same qualities make them hard to envision as a coherent enterprise. No one experience or setting provides a comprehensive education or socialization in the way school has been asked to, nor is it intended to. Discrete experiences in some favored domain act more as spurs and anchors and initial paths toward adulthood.

In the remaining sections of the monograph I therefore focus on the larger context for these experiences and for growing up. I begin what needs to become a sustained societal discussion of how we might reconstitute learning for millions of young people. This task will require work within dominant institutional structures, especially schools, and *a concerted effort to create new structures.* We need to place individual clusters of experience in a broader societal framework for youth; make such settings and experiences normative, recognize them, organize them, make them more accessible to young people and integral to our societal life. In accomplishing these goals:

- We have to question – fundamentally question – the "givens" of schooling: basic assumptions, goals, location, pedagogy, assessment approaches, accountability mechanisms and other structures of high school as it is currently organized.

- We have to create a variety of avenues for infusing the attributes of good learning experiences into high school policies and practices, up and down the line.

- We have to locate, wake up, make visible, nurture, financially support and legitimize the thousands of non-school learning settings that provide their own important base for good learning during the high school years.

- We have to connect the school-focused and more broadly focused efforts together. We have to create scaffolding for a coherent set of learning experiences, across time and place.

- And, most difficult of all, we have to foster a culture of shared responsibility for young people, and one that sanctions a broader view of learning during the high school years.

QUESTIONING THE "GIVENS" OF SCHOOLING

This would seem an opportune moment to bring new ideas to high school as an institution. As the current wave of commission reports attest, there is growing recognition among stakeholders that high school is not working well for a sizable proportion of young people. Yet the central thrust of national reform efforts, in particular the emphasis on increasing "rigor" through higher standards, tougher courses and data- and test-driven accountability, does not address what is most deeply problematic

in the learning structures of school. And approaches most consonant with the attributes of good learning remain at the margins of dominant reform discourse.

Prevailing reform emphases do little to address the problem that what young people are being asked to learn is essentially "the conventional academic curriculum of the late nineteenth century" (Grubb and Oakes, 2007, pp. 1-2). Standardized tests do not address – and therefore teachers in their every day instruction have little incentive to nurture – young people's nascent ability to formulate new questions in a discipline, deeply analyze ideas or data, use symbols creatively and imaginatively. In a more practical vein, core standards and their associated tests do little to signal young people's nascent readiness to "design, prepare, fix, and maintain the vast technological infrastructure of the nation" (Bottoms, 2008, p. 2). As Heckman and Montera (2009, p. 1329) put it, not only are schools as learning institutions in a state of entropy, but "current educational reform efforts intensify this state of entropy".

What, then, has kept the defining attributes of schooling – what Tyack and Tobin (1994) call the grammar of schooling – in place for so long? And why do dominant reform ideas always seem to accept, if not reinforce, those attributes? How do we reconcile the persistence of a century-old framework with Berryman's (1995, p. 193) observation that the design of school learning "routinely and profoundly violates what much of our experience and a century of formal thought and research tell us about effective learning"; with Heckman and Montera's (2009, p. 1329) observation that "the organization and operation of schooling is at odds with current knowledge of learning, cognition, society, human development and organizational change"?

The persistence of practices that seem an anachronism, are developmentally ill-suited and, at a cultural level, are unhelpful to renewing society, has been attributed variously to (a) the view that high school actually works fairly well; (b) the view that it serves the interests of immediate stakeholders (i.e. teachers, administrators, teachers' unions, school boards); (c) a belief that the forms of socialization and control found in school match those, and therefore prepare young people for, those found in work (Bowles and Gintis's "correspondence theory"); (d) the view that reform efforts have failed to acknowledge the deep structure of schooling.

If we grant that various stakeholders – including the corporate sector – really do want reform, then the last reason seem most compelling. That is, reform efforts have failed to acknowledge both how deeply rooted current practices are and how thoroughly such practices would have to change to better meet many young people's learning and developmental needs. To do so high schools would have to rethink almost every policy and practice, including: the goals of and reasons for learning; the nature of core learning resources and tasks; where, when and under what conditions learning takes place; the meaning of making mistakes; what the products of learning consist of; how growth is conceptualized and how learning is assessed; the nature of motivational structures; who teaches and how teaching is done; how time is organized (every day and over the years); and what institutions are involved.

Three ideas should guide any efforts to fundamentally rethink schooling for high school-age youth. First, providing a good education for young people requires wrestling with the idea that knowledge and skill are heterogeneous, and that cultivating diverse talents is critical to an interesting and enriching culture. Second, very particular learning experiences, rooted outside the walls of school, can provide one (though not the only) foundation for a broad education; in other words can contribute significantly to the knowledge, skills and civic values that allow young people to grapple with a complex, shifting adult world. Third, individualized approaches to fostering knowledge and skill – especially when focused on those domains of greatest value to individuals – are both more effective and more just than one-size-fits-all approaches (Deke & Haimson, 2006).

These ideas do not fit the century-old structure of schooling, which seems held in place in the current era by a particular policy goal, college for all (with career readiness recently added as an after-thought), tied to an enduring ideal, the common curriculum, with both rooted in the physical setting of the high school itself. These three elements have been like cement, holding everything together. If they were opened up, it is likely that other dimensions of learning would open up as well.

It is argued that the common "core" curriculum and single goal of high school express our societal ideal of equal educational opportunity. One can just as plausibly argue that they undermine the ideal. Asch (2010, p. 35) describes the goal of college for all, pushed to the exclusion of other options, as the "inadvertent bigotry of inappropriate expectations". In a similar vein Rothstein (2010, pp.5-6) argues that holding on to the goal of college (or college readiness) undermines the credibility and legitimacy of high school as an institution. He reads the evidence to conclude that "today, perhaps 20 percent of all youth graduate high school fully prepared for academic college". That means that 80 percent of young people need other options and pathways. Some among this 80 percent may be ready for four-year college later on, but that is not an excuse for neglecting young people's needs during the high school years [8].

Our ideals, then, have led high school educators and other stakeholders in youth to ignore the hard work needed to nurture and sanction indirect paths to post-secondary learning, through an active, mixed, diverse and partly applied set of learning and working experiences. Young people themselves – some 90 percent in one survey – accept the idea that going straight to college "is not for everyone", and a large majority believe that getting "some hands on experience" is a useful early step toward adulthood (Johnson & Duffett, 2005, p. 17). Yet elected officials, educators and parents have been far more reluctant to let go of what has been called a one-size-fits-all approach to high school [9]

The continued dominance of the common curriculum forces educators to ignore the heterogeneity of young people in strengths and limitations, passions and dispositions, and to ignore our culture's need for – and need to value – knowledge and skill in a variety of domains, including those historically rooted in the trades. As Kohn (2010, p. WK9) argues, "To say that all students should receive a high quality education is very different than saying that all students should get the same kind of education. A one-size-fits-all approach to schooling doesn't produce excellence, and it certainly doesn't further the cause of equity".

80 percent of young people need other options and pathways.

Embracing heterogeneity means accepting the notion that young people can complete secondary education with different sets of knowledge and skills, even somewhat different kinds of literacy and numeracy. [10] That knowledge and skill has to include the kinds rooted in physical activity and hand work, whether technical, artistic or other. This clearly places a greater burden on high school educators to identify the substantive domains and pedagogical

8. For some perspective, an educational profile of American adults finds that 2 percent have a professional degree, 7 percent a masters degree, 17.5 percent a bachelors degree, and 7.5 percent an associates degree (Chronicle of Higher Education, Almanac, 8/27/10).

9. Kincheloe (1995, p. 33), perhaps expressing this problem more accurately, notes that it is "extremely difficult for most Americans to understand…the school's need to appear to elevate egalitarianism while at the same time producing the differentiated or tracked labor force demanded by employers".

10. For instance, it is at least worth debating whether the ability to read and make sense of complex technical manuals might be just as important to some youth as the ability to read and analyze fiction.

approaches that might engage particular clusters of youth. It also implies a very different approach to assessment, since young people would be assessed for proficiency in different chosen areas of concentration, with criteria and methods specific to a field or discipline, and at different points in time. [11]

Emphasis on the common core in particularl continues to constrain openness to applied and more vocationally-oriented learning experiences. High school curricula and learning standards reify a narrow band of knowledge, even as it becomes increasingly clear that knowledge is heterogeneous. For instance, some two thirds of middle-skilled blue collar workers have to be able to read and create visuals – maps, diagrams, floor plans, graphs, blueprints, and so on. Yet these are virtually absent from the high school curriculum, even where they might fit (Lerman, 2008).

In spite of its emergent strengths (discussed in detail shortly), career and technical education especially continues to be viewed as a kind of curricular backwater by parents and some educators. A long-term decline in vocational course enrollment has slowed but continues, and one third of all vocational courses taken are computer-related. Comprehensive high schools offer a limited range of vocational options, especially in relation to a job market that "is strikingly heterogeneous, with hundreds of broad occupations and within each of these occupations different levels of work" (Lerman, 2008, p. 22).

We may want young people to be able "to find and act on who they are, what their talents gifts and passions may be, what they care about, and how they want to make a contribution to each other and the world" (Darling-Hammond, 1996, p. 5). But in the process we do not want to limit their options – and possible destinies – prematurely. In that light there remains a sense that vocational education is too directive and specific in character; a sense that specificity itself is "the great enemy of a liberal education" (Lewis, 1998, p. 298).

Applied versions of knowledge in the core subjects needed for graduation are often viewed as too technical, "not broad enough" and therefore not creditable (Taylor & Watt-Malcolm, 2007, p.33). In an ongoing debate in Louisiana over a proposed vocational pathway to graduation critics argue that, by definition, an applied pathway would lower standards and rigor (Robelen, 2009). A report on a pre-apprenticeship program in Washington state notes that, as teachers, counselors and other school staff "scramble to find learning pathways for kids they continually run into competing academic priorities tied to the Washington Assessment of Student learning and high school graduation requirements" (Washington State Apprenticeship and Training Council, 2007, p. 5). Yet some new courses that emphasize application of math and science in specific occupational arenas (e.g. engineering and biomedical sciences) have proven more rigorous

…some two thirds of middle-skilled blue collar workers have to be able to read and create visuals – maps, diagrams, floor plans, graphs, blueprints, and so on.

11. This is far from a new point or point of view. Some two decades ago the widely cited SCANS Commission report "urged the development of assessments that would engage teachers and students in `authentic practice of valued competences'" (Wraga, 1998, p. 187).

and interesting to young people than similar basic courses designed primarily to allow youth to meet graduation requirements.

When considered at all, applied learning tends to be seen as a way to motivate students to recommit to the standard curriculum, not as one basis for better grasping ideas and information. There is little acknowledgement that, as Albertson and Davidson (2007, pp. 1-2) put it, what is good for vulnerable learners is good for others too. (The authors call disengaged learners "the mining canaries of the educational system", adding that "if they are dropping away, others are not far behind"). Moreover, "applied learning competencies are not [simply] job skills for students who are judged incapable of or indifferent to…academic learning. They are the kinds of abilities all Americans will need, both in the workplace and in their roles as citizens" (Resnick, 1997, p. 259).

INFUSING THE ATTRIBUTES OF GOOD LEARNING INTO HIGH SCHOOL

Some stakeholders have begun to feel a need to unfreeze high school as an institution and open up the reform landscape, indeed the learning landscape itself. The bulk of the alternative thinking about high school focuses on its unsupportive institutional qualities, and the difficulty it has in engaging and motivating young people. Some, but much less, of that thinking focuses on the urgent need to restructure high school learning around the specific, applied, diverse, learning experiences described earlier. [12] A handful of innovative models or high schools are relocating the bulk of young people's learning experiences outside of school itself. And a handful of proposals either argue explicitly for or imply ending the common high school experience at age 16, providing different learning pathways beyond that point.

Most commonly noted in current high school reform literature are attributes thought to create the pre-conditions for engaging and motivating young people: small school size, personalized learning, long-term relationships between adults and youth, project-oriented (or "anchor") assignments, authentic learning experiences, performance- or competency-based assessment, self-managed learning, opportunity to take college classes and formal certification (and levels) of mastery, among other features.

Some of those involved in the debate about secondary reform address directly and centrally the need for a fundamental rethinking of curriculum. One group of leading learning scientists argue that "educational or curricular work…must enlist rich contexts and what is too often treated as non-academic content" (Barab and Colleagues, 2007, p. 290). A leading career and technical education scholar argues for more disciplinary offering, "multiple programs of study, beginning in the ninth grade" (Bottoms, 2008, p. 17). Some argue also for a different understanding of "rigor" in learning, one that emphasizes depth as much as or more than breadth, and the ability to apply learning to new tasks, especially in selected disciplines (Grubb & Oakes, 2007, p. 1). One writer argues that "schools should be constellations of small communities of practice" (Brandt, 1998, p. 9). The longstanding idea of using the immediate or larger community as a learning site and resource (e.g. "city as school") is also receiving renewed attention.

Efforts to fundamentally rethink learning structure and/or curriculum can be linked to a modest movement to end the common high school experience earlier, typically at the end of the sophomore year, and create differentiated pathways for young people beyond that point. The well regarded career academy model within career and technical education, often encompasses the junior and senior years (although a growing number, constituted as smaller learning communities, start young people off upon entry to high school), as does the early college high school model. A new initiative of the National Center for Education and the Economy would have young

12. Even the Obama administration, focused on top-down, data driven accountability and turning around "failing" schools, has included a request for modest funds for re-diversifying the curriculum in its ESEA re-authorization.

people in selected high schools in eight states take a "Board Examination" at the end of the sophomore year, that would certify mastery of a core of knowledge and serve as a kind of alternative high school diploma. Presumably, high schools involved would create different pathways for young people beyond that point, including college or community college coursework; a career and technical education concentration (perhaps leading to a technical certificate); or some kind of broader disciplinary concentration.[13]

Newer ideas about high school are being implemented – in various combinations – in specific high school networks, such as that of the Coalition for Essential Schools, and in well-known models such as High Tech High and Expeditionary Learning. High Tech High, for example, especially emphasizes project-based learning. Co-founder David Stephen (2010) describes one recent project in which students, working alongside local scientists, examined the question of how humans have influenced the ecology of San Diego bay.

Scores of less well known high schools around the country incorporate selected innovative elements into a standard high school experience, for example individualized learning projects for seniors or electronic learning portfolios. For instance, Washington, D.C.'s School Without Walls designs special interest courses taught by guest teachers from different disciplines such as law. Some among hundreds of themed high schools throughout the country also incorporate innovative elements described above. In a small number of both comprehensive and themed high schools, young people have an opportunity to choose an area of concentration, much like in vocationally oriented career academies. For example, in the Oakland (California) School for the Arts, students major in either dance, literary arts, instrumental music, vocal music, theater, visual arts, or arts management. They also participate in a senior year internship with a local professional arts organization in students' area of concentration.

Shifting the Locus of Learning Outside of School. While arguing for "authentic" learning, most innovative approaches to high school accept, even if implicitly, that it should be possible to create the conditions for good learning inside the walls of school itself, with forays outside of school for specific purposes or projects. There has been some effort, as in the High Tech High model, to reorganize the school environment to make it less school-like (or, put differently, more non-school-like). Indeed one author argues that schools should "be configured so that we have a model of learning that is studio-based or atelier-based, where we have experts present but we also have a rich ecology, where individuals can connect with each other… under the guidance of someone who is the `master'" (Siemens, 2007, p. xx).

A small group of stakeholders has nonetheless begun to argue that learning in high school will remain "inert" as long as it remains located inside the walls of school. They argue that educators must look outside the school building for learning resources, and involve a range of adults and institutions in the educational process; "teachers cannot and should not bear this responsibility alone" (Littky, 2004, p. 123). American society needs a "proliferation [sic] of learning environments" for high school age youth (Jobs for the Future, 2009, p. 2). It needs the involvement of a wider range of institutions and settings, "collaborative efforts across settings", and support for "wider variations in…in the structure, pedagogy and the institutional characteristics of learning environments" (Oakes & Saunders, 2008, p.10).

A handful of high school models in fact create a fundamental role for learning outside of school walls. The best known current example is the Big Picture schools, in which students spend two days per week throughout high school in apprenticeship-like learning roles in adult work and service settings.[14] Co-founder Dennis Littky notes that "For 20 years

13. NCEE's new initiative supplants a longstanding effort ("Certificates of Initial Mastery") which included the idea of juniors and seniors selecting a specific disciplinary cluster, for example, arts and communications, human resources, industrial/engineering systems, natural resources, taking course work at the high school and/or community college, leading to a Certificate of Advanced Mastery.

14. "Learning Through Interests" provides the conceptual framework for young people's education, although they are not expected to simply know their interests when they arrive at high school. The model provides mechanisms for young people to both reflect on themselves and their experiences and learn about new corners of the world that their advisors think might interest them.

I was the principal of schools with caring advisors and interesting projects, but it wasn't enough. When students do all their projects inside the school building, their inspiration eventually drops off. But when they work in real world settings with a great mentor they shoot up to the next level. They get so proud and their learning takes on such meaning for them" (cited in Levine, 2002, p. 41).

The founders of Big Picture argue also that academic and applied learning are complementary parts of a whole: each is animated by the other. In his study of Big Picture, Levine (2002, p 44) describes a young man, inarticulate and seemingly uninterested in academics, whose out-of-school placement was with a yacht restoration school and workshop, and through that experience found a voice and "an ability to write about woodworking in ways that previously had eluded him". He cites co-founder Elliot Washor's observation that "Many times you have to let go of the academic to get to the academic".

CTE programs and staff create connections to to potential non-school learning sites and believe in the value of getting young people off campus.

CAREER AND TECHNICAL EDUCATION AS A BASE FOR GOOD LEARNING EXPERIENCES

In a potentially fruitful vein, a three decade-long project to reconceptualize career and technical education (CTE) has begun to transform the field. This multifaceted project has led to refined and updated curricula, with some effort to integrate theoretical and practical material; broadened the ways in which CTE introduces young people to vocations, and outlined pathways through secondary and from secondary to post-secondary education; brought in more teachers with industry experience and expertise and forged links with employers for provision of apprenticeship-like experiences. The solidity of this project is such that CTE proponents have begun to argue that the "applied teaching strategies" of CTE should be harnessed for broader high school reform efforts (Bottoms, 2008).

At its best, career and technical education reflects many of the attributes of good learning, and offers an obvious – and as yet hardly tapped – means for bringing these attributes deeply into schooling. For instance, career and technical education offers both depth and heterogeneity. It is a good mediator between the diversity of young people's strengths, propensities and profiles and the lack of diversity in high school offerings. CTE intuitively and in some instances explicitly recognizes that learning is about exploring and solidifying identity.

Participating in a CTE concentration gives young people a clear purpose for engaging in learning. Learning and practice are viewed in an integrated way. Curriculum derives from the nature of tasks in the disciplines and fields involved. Young people work on real projects and problems in defined fields important to the broader culture. CTE has been found to use a variety of powerful instructional approaches, including modeling and demonstration,

just-in-time teaching and feedback, assessment tied to every-day practice, problem-based learning, and team learning (Stasz, Ramsey & Eden, 1995; Gentry, Rizza, Peters & Hu, 2005).

CTE programs and staff create connections to potential non-school learning sites and believe in the value of getting young people off campus. The criminal justice instructor at one career and technical education center notes that his students are "in state police cars, sheriff's department cars, [with] city police, they work at 911 dispatch [and] district court" (Gentry, Rizza, Peters & Hu, 2005, p. 64). A still small but increasing number of career and technical education teachers are practicing professionals. The criminal justice instructor just cited had been a police officer for 25 years. Instructors often have a detailed sense of the steps a young person must take to prepare for and move toward a particular occupational arena, and can help young people decide if they are suited for a particular pathway.

CTE embodies the idea that rigor in learning is multi-dimensional: there are different kinds of thinking hard, applying knowledge, being creative in approaching tasks and problems. As well, vocational learning is characterized by textual diversity: "conventional textbooks, instruction manuals, reference books of many kinds, invoices, spreadsheets, lab, police and media reports, rate guides, software documentation, blueprints, wiring diagrams and maps" (Grubb, 2001, p. 9).

In contrast to academic knowledge, which tends to be disembodied, vocational knowing "involves much more situated judgments and tacit understanding" (Grubb, 2009, p. 21). Especially as found in the work place, vocational knowledge is often contingent, action-oriented, and heuristic. At the same time, when part of a coherent curricular framework CTE provides a vehicle for helping learners move back and forth between abstract principle (or formula) and specific problems in specific contexts. Concepts and factual information are often applied immediately, whether in the classroom or in a lab, workshop, kitchen or other application setting. (One review finds, not surprisingly, that vocational classes are three times more likely , 64 percent versus 21 percent, to ask students "to apply academic skills to tasks that might be found in a job or career"; Silverberg et al, 2004, p. 85). The pattern of moving from the classroom to the lab or workshop, sometimes on the same day, makes students more attentive to classroom learning itself.

Vocational concentration requirements and curricula increasingly reflect industry-defined skills for changing occupations and occupational clusters. Curriculum in traditional areas such as electrical, machining, agriculture and criminal justice have been updated and new areas introduced, such as engineering, medical technology, natural resources, computer programming, and web site design. The introduction of the career cluster concept has helped define the appropriate balance between conveying the specificity of occupations and the fluidity of broad occupational fields (e.g., health science/medical technology, building/environmental design, engineering, arts, media/entertainment, public service, law/justice, etc.). The clusters, now linked to the newer concept of programs of study, have created bounded terrain for the development of coherent sequences of coursework (academic and applied), leading through high school into post-secondary study, and in turn to industry-recognized credentials. As a map of a broad occupational field, a career cluster demonstrates to young people where specific occupations fit vertically and horizontally, in career progressions and neighboring fields. They help young people see that occupational roles are dynamic, that there is often a progression from entry-level to semi-skilled and skilled technical work.

Vocational concentrations can structure opportunity for young people in helpful ways. Youth of color, for instance, may still worry about discrimination, but as they get involved in a field and are accepted by adult professionals this tempers and overcomes inhibitions

Especially as found in the work place, vocational knowledge is often contingent, action-oriented, and heuristic.

related to such worry. A young Latino enrolled in a medical academy program notes that "I'm sure I'll find racism and financial difficulty, but race is no excuse…" (Conchas, 2001, p. 499).

Taking a vocational concentration appears to "prime" young people for related academic courses (Stone & Aliaga, 2005; Edmunds & Freeman, 2009). For some youth taking a vocational concentration actually increases the likelihood of "completing [sic] a rigorous academic core" (Bottoms & Young, 2008, p. 3). As one study reported, "once students are given the opportunity to extend their technical interests they became more engaged in schooling beyond the [technical] areas" (Edmunds & Freeman, 2009). For those who are struggling academically or behaviorally it reduces the likelihood of dropping out (Stern & Stearns, 2008).

Participation in CTE, especially in the junior and senior years, is beneficial to young people almost regardless of what they do next (Bishop & Mane, 2004). It appears to focus and organize young people. It provides some young people a kind of home base for learning and growth. It helps young people see and feel that post-secondary choices have to fit who they are, conversely that they do not have to conform to expectations that do not feel right. It leads to more grounded, and specific, planning. Whatever future-oriented guidance and advice that young people get in the midst of applied learning experiences seems to stick better than that provided out of context.

Vocational learning involves new emotions and sometimes engenders disappointment – one discovers one's own limitations, practice may be frustrating, fields themselves may seem limited (Colley et al, 2003). Yet some youth begin to acquire the particular identity that accompanies a trade or profession. Studies also cite evidence of such personal effects of participation as shift toward an internal locus of control and a stronger sense of self efficacy (Chaplain & Gray, 2000). For some youth a career and technical education concentration alters their sense of who they are. A young woman taking the first steps toward nursing notes "You tend to establish a whole new identity at the careers center…" (Gentry, Rizza, Peters & Hu, 2005, p. 70).

A Base for Renewing Youth Apprenticeship. Career and technical education has been an important base for the renewal of youth apprenticeship, a powerful embodiment of good learning attributes (see Halpern, 2009). In youth apprenticeship the young person joins in the work of the host enterprise and adults in that enterprise simultaneously join the young person in his or her own personal "work". Both adult and youth are active. They share responsibility for the tasks to be accomplished and the products to be created, although each has a different role. The adult mentor is responsible for sharing his or her disciplinary knowledge and skills with youth. Youth are responsible for working hard to begin to become proficient at something specific, and for contributing to the community which they have joined.

Apprenticeships are a particularly good vehicle for providing young people a visceral sense of how professional work feels. In career and technical education, the large majority of learning still takes place inside of school. And, while some schools "do a fair job of replicating the physical environment found in work settings – classrooms may look like shop floors, laboratories and examination rooms"– these settings simply do not replicate the conditions, people, dynamics of the work setting (Nelson, 1997, p. 84). No school-based kitchen, for instance, can replicate the speed, pressures, tension, and barely controlled chaos of a restaurant kitchen.

Apprenticeship requires schools and other stakeholders, notably employers, community colleges and local union trades councils, to both give up some autonomy and control, and to put young people themselves at the center of discussion. For instance, in identifying young people for apprenticeships high school staff have to be willing to consider – give up

some control over and credit for – their strongest students as well as those who are not thriving in their academic coursework (Taylor, 2006). Local unions may have to be willing to open up new pathways into formal, registered apprenticeship. Employers may have to work with state labor regulators to secure waivers from specific sections of child labor laws.

Rhetorical interest in apprenticeship has been growing faster than practice; probably no more than one or two percent of high school youth have an apprenticeship experience. But scores of local career and technical education programs around the country are beginning to include apprenticeship options for at least some students. One or two years of apprenticeship-like experience for juniors and seniors is (or at least has been in recent years) a formal option in a number of states, including Connecticut, Florida, Georgia, Kentucky, Maine, Oregon, Washington state and Wisconsin, whose program is the longest running. A handful of youth apprenticeship initiatives are also industry-driven, with ties to high school vocational programs throughout a city or region.

Apprenticeship program structures vary from locale to locale. Students might work 15 hours per week during the school year and full-time in the summer, or have a block-like schedule. In some programs young people are paid, in others not. Programs may include some type of certification of competencies acquired. They usually include complementary coursework, with both work hours and course work credited toward high school graduation and post-secondary concentration in the same field at a community college. There might also be some crediting toward the hours required by local trades councils for their own apprenticeship programs.

15. There is a detailed case study of the Wisconsin Youth Apprenticeship Program in my book on youth apprenticeship (Halpern, 2009).

…both across settings and over time, adult institutions are responsible for creating a kind of scaffolding for growth…

orchestrating and validating a diverse world of learning settings

If learning for young people is to be conceptualized more broadly, a variety of institutions will have to learn to welcome and involve young people, and to share responsibility for their growth. Institutions will have to open up and adapt to young people, rather than leaving it up to young people to make their way, or not be able to.

Assuring constructive learning during the high school years will require careful attention from adult institutions – to the immediate needs of each learning experience and to the coherence of experiences across time and place. Young people gain important experience and begin to grow up within particular settings, while the larger developmental processes underway in their lives can be said to occur across settings. As one study puts it, "The process of learning and identity construction appears to be located in between academic institutions, work life experiences, individual life strategies and socio-political contexts" (pjb Associates, 2004, p. 2).

Across experiences, both across settings and over time, adult institutions are responsible for creating *a kind of scaffolding for growth* – making room for individually appropriate pathways, assuring a complementary, graduated, but intentionally connected mixture of learning, exploring, producing and assessment experiences. These tasks will require collaboration, mutual learning and mutual recognition across a broad spectrum of sectors that rarely work together in American society – schools, community-based organizations, juvenile justice, cultural institutions, single-cause organizations, the business community, higher education, state workforce development agencies, trade unions and their training arms, among others. For instance, making youth apprenticeship work often requires the joint attention and cooperation of two, three or more stakeholders – school staff, employers, and often community college or vocational training center staff.

One critical contribution of non-school stakeholders will be physical resources and infrastructure – studios, laboratories, workshops, clinics, equipment, tools, and basic materials. Because they are focused in one discipline or domain, learning settings outside of school are more likely to have the specialized equipment and updated technology that are difficult for schools in all but the most affluent communities to afford. In Woonsocket, Rhode Island RiverzEdge Arts provides graphic design, photography and silk-screen studios, professional equipment, professional teaching artists and a learning-through-work model that the hard-pressed high school inn that community would not be able to offer through its on CTE program.[16] One recent commentator, for instance, responding to Camille Paglia's call for "revalorizing the trades" describes what it would cost a local CTE system to equip a separate workshop for introducing young people to the machining trades, from bench supplies, vises, drill presses, lathes, milling machines, and grinders of all sorts, to CNC (computed numerically controlled) machines, and so forth. The commentator

16. Not just physical resources, as alluded to above: for instance, one proposal for expanding slots in Washington state's pre-apprenticeship program is to include "Apprentice Utilization Requirements" in a variety of public works contracts with the state and in local school district capital projects. That model could be used in a variety of publicly funded arenas in the sciences, arts, and community development.

estimates that one such workshop alone would cost some $12 million (Paglia and responses, 2010).

From a systems perspective, the historic chasms between institutions, for example between grass roots organizations and big public systems, and between schools and the business world, would have to be addressed (Erbstein & Heckman, 2007). Deliberate efforts will be needed to build trust, from institution to institution, sector to sector. To start with, institutions have to get to know each other, gain a clearer sense of what others have to offer (for their own work and for young people), and come to understand others' priorities and preoccupations. Individual institutions will have to recognize others' perspectives and sacrifice specific interests for a common interest in young people's well-being and growth. Institutions have to acknowledge different roles, while not defining their own role too narrowly.

Different institutional systems will have to work hard to reconcile different orientations toward and views of youth, different learning goals and in some situations different time frames for young people's growth toward mastery and timetables for their own work with youth. For instance, in a study of an apprenticeship initiative in Toronto it was observed that community-based organizations, training centers, schools, employers, and trade unions each valued somewhat different aspects of the experience for youth – social inclusion, preparation for a particular trade or craft, providing an alternative pathway to graduation, addressing local labor market needs, among other goals (Taylor, 2006). Employers wanted young people to prove themselves and their commitment to the trade by doing whatever was asked.[17] Schools wanted young people to be trained for understanding – so they would know why they were being asked to work as they were. The training centers wanted young people to have some breadth of experience, to acquire a broader understanding of the occupation or trade at hand.

NEW ROLES AND STRUCTURES TO INCREASE THE COHERENCE OF LEARNING EXPERIENCES

In an effort to realize a more coherent sense of responsibility for young people, the key institutions noted above will have to convene to forge new intermediary structures. City- and county-level coordinating bodies, something like a reinvigorated version of the Workforce Investment Act's Youth Councils, would have to be created to spur stakeholders to commit to what is admittedly a very broad task.

Partnerships create a sum greater than its parts, in effect creating a richer, more varied learning landscape for young people.

Young people will need something like *a learning home.* This would be the place, setting or organization that a young person viewed as the base for the full range of his or her learning activities. Because young people's developmental histories, interests, learning histories and learning styles are diverse, they would find learning homes in different places. Adults in these settings would have overall responsibility for the logic of young people's learning experiences during the high school years. They would have some responsibility for sharing information about

17. One apprenticeship supervisor noted that "if you give the kid the dirtiest or the roughest or the heaviest job and he does it well…he's showing me that yeah, he wants to be here. And he's going to listen and he's going to learn and he's going to be a good mechanic one of these days (Taylor, 2006, p. 330).

learning resources in the community at large and linking young people to those resources.

It would also be helpful to think of the learning landscape as containing many *learning bases*, the settings in which young people link up with expert adults to nurture specific talents. As described earlier, these already exist in implicit form in numerous fields but receive too little attention as a deliberate means for growing the diverse population of youth. Learning bases can look and be organized very differently, as a studio or workshop, an ensemble, an apprenticeship or residency, and so forth. Schrag (2010), for instance, describes a development called math circles (which he notes originated in Bulgaria and the Soviet Union), organized so that young people with a serious interest in math can meet weekly with professional mathematicians.

A critical set of structures needing to be created might best be described as *youth learning partnerships.* Partnerships create a sum greater than its parts, in effect creating a richer, more varied learning landscape for young people. They introduce institutions to each other. They allow for the strengths of each sector – schools, community-based organizations, industry, training organizations – to be extended by the complementary strengths of others.

Partnerships are often able to leverage resources, having a multiplier effect. For instance, as just described, non-school organizations can extend the reach of school-sponsored career and technical education programs. Partnerships allow for structured dialogue – those from different sectors share information and get to know each other. Youth serving organizations often know little about local labor markets and employers often know little about youth and youth development. As noted earlier, employers "typically do not have the time or resources to seek out youth on their own", but might be willing to carve out a place for youth if they could trust referrals, and help shape a planning and preparatory experience (NCWD, 2005, p. xx). For instance, the Careers Through Culinary Arts Program (CCAP), a non-school learning provider based in New York City, places youth as apprentices in restaurants and food service operations. It screens and selects the youth and prepares them with knowledge of food safety, knife skills and other basics. Employers have come to trust CCAP's referrals and know that CCAP staff are available to help with any problems.

Partnerships have to evolve "organically" (Campbell et al, 2006, p. 24). Different institutions and types of organizations are relevant in each city or county – charter schools, career and technical education centers, issue-focused intermediaries, arts organizations.

an example: mechtech usa

MECHTECH USA is an intermediary that has forged partnerships among school systems, community colleges, unions and a consortium of manufacturers in Connecticut, Massachusetts and Rhode Island to place high school students an apprenticeships in the machining and tooling professions. It has coordinated among educational institutions to create a defined course sequence beginning in high school and continuing into community college (physics, math, technical writing, CNC, CAD, CAM, etc.) and oversees young people's careful rotation (in 6 to 8 month cycles) through the many small shops that make up this field. The apprenticeship is designed to lead to a journey worker certificate and an associate degree in mechanical engineering.

Locally-rooted partnerships are able to be sensitive to local economies, local institutional strengths and weaknesses, and the distinct needs of local youth. As Kincheloe (1995, p. 292) observes, "The resources of the local community…hold the key to success for a critical integrated program".

TOWARD A COMMON UNDERSTANDING OF LEARNING EXPERIENCES

Among the many critical tasks in creating a more coherent inter-institutional framework for young people's learning, one is distinctly conceptual. Institutions will have to work together to forge common understanding of both the criteria for good learning experiences and the metrics that define young people's growth. The challenges will require stakeholders to acknowledge and wrestle with the embedded nature of much important knowledge and skill. Performance is often tied to its context and evoked by the demands of the setting. The meaning of broadly important skills will still be specific to the discipline or field. For the budding scientist, working with care may focus on careful measurement and recording, while for the apprentice electrician it may mean attention to local building codes, bundling wires behind a wall so others can get to them in the future or even attending to personal safety.

Describing learning and growth will have to balance the conceptual and practical, the general and the specific. Some growth toward competence is about achieving levels of proficiency in relation to the standards of a discipline. That requires asking what aspects of a discipline's practices should be considered fundamental (Ford & Forman, 2006). Some is about growth in important domains for which there is no metric for deciding when a young person is proficient. For instance, such kinds of growth as getting better at predicting or approximating, becoming more consistent in behavior and motivation, or developing capacity to cope with difficulties are not easily converted into standards.

Making A Variety of Learning Experiences Count. If a greater variety of learning and working experiences during the high school years are to be recognized and made to count, stakeholders in young people's learning will have to want to do the work of expanding and altering their existing certification frameworks and developing at least some overlapping metrics. The problem of expanding what counts in the eyes of multiple stakeholders is complicated by the internally oriented focus of institutions that serve young people. These orientations have to be turned outward and linked to broader developmental issues and contexts. It is complicated also by the unique assumptions underlying certification in specific institutions. For instance, vocational qualification schemes tend to be linear and hierarchical, learning and growth of expertise in less strongly vocational domains much less so (Guile, 2006; Guile & Okumoto, 2007). Schooling is unique in basing certification of learning partly on time served rather than mastery of a specific set of knowledge and skills.[18]

As a start in untangling this complexity, it makes sense to think of categories of certification in developmental terms. For instance, one can imagine certification in personal, educational and vocational skills and dispositions. Alternatively, skills and dispositions acquired through a particular learning experience might best be viewed as "door openers" to formal qualifications (Björnavåld, J, 2000). Some might serve as first-level competencies within a specific occupation. It would also be helpful to young people if institutions found means of crediting learning experiences that took place outside of their walls. For example young people who participate in ACME Animation (see ACME Animation example on p.31) through their high school fine or applied arts departments can receive credits to be applied to graduation, upon demonstration of proficiency within ACME's own assessment scheme.

18. New Hampshire may be the first state to have acted on the growing perception of the Carnegie Unit as an obstacle to high school reform, replacing it with competencies defined by local school districts.

In the context of broad efforts to make learning experiences more coherent, a specific effort is needed to make non-school learning better understood, recognized and validated in the eyes of potential and actual partners, including schools, higher education, workforce development, professions and industries, in the minds of young people themselves and their parents. Changing this self perception will require greater societal valuing of different kinds of learning experiences and markers of growth and achievement. For instance many of the learning experiences described here begin to build just those skills and dispositions – part generic, part discipline/occupation-specific – valuable to and valued by employers. If that process and its results can be made explicit, it might serve the signaling function for employers that high school transcripts apparently do not, encouraging employers to find places for young people. Employers already recognize that certain applied learning experiences, such as pre-apprenticeship, foster the kinds of maturity they value, mitigating the common aversion to hiring young people (Lerman, 1996).

Such learning is most useful to young people developmentally when it is normative.

addressing the cultural problem

Reflecting on the European context, du Bois-Reymond (2005) argues that a century-long epoch of mass schooling is drawing to a close; European nations are entering a new learning epoch whose outlines are not yet clear but which will surely include greater heterogeneity in learning arrangements. This observation is probably true of the United States as well. We are certainly in what du Bois-Reymond describes as a time of upheaval with respect to learning. One can argue that the world outside of school is full of potentially rich learning opportunities for young people. But it is much less certain that American culture is as equipped as are those of other nations to support a broad understanding of learning and of youth participation.

As discussed earlier, the new approaches consonant with a broader understanding of learning, including the many alternative high school education models and the newer career and technical education, are working mostly to expand the outer boundaries of schooling. Until we rethink the historic model of high school education, many youth will continue to be pushed toward the periphery of it. The United States urgently needs to move away from a standardized vision of learning during the high school years, and especially away from the tendency to view academic and applied learning in either-or terms. Both need to be understood to support and feed each other. The idea that applied learning (including career and technical education) is mostly useful for those young people who cannot compete academically is both destructive and represents a distorted understanding of human ability. Such learning is most useful to young people developmentally when it is normative.

Certainly an important contribution of the broader learning experiences described in these pages is to help us to rethink how we account for young people, and in particular how we understand their social role and potential contribution. The Australians have a concept called cultural democracy. It implies in part that young people are entitled to broad access to culture-making resources as well as to culture-critiquing and consumption. The worry is that the press of the larger culture in the United States will undermine any effort to nurture new kinds of learning. Many adults in a young person's life and in the broader community have to believe in young people's fuller participation in the adult world. Without a clear cultural sanction non-school learning is less likely to be recognized, supported and valued.

Good learning experiences as such cannot solve the larger cultural problem but they do offer a vehicle for participation in the larger world. They address what Larson (in press, p. 12) describes as a central societal challenge with respect to young people: "how to get this system of intrinsic motivation turned on and sustained". They provide young people a chance to both learn their skills in the community and share their skills with the community. They serve as means for young people to transcend societally imposed constraints, those encountered to due one's social class or race or community of origin. As preparation, good learning experiences help make a larger world that often seems distant and monolithic more differentiated and human (Daniel, 2007). They provide youth some first steps into the adult world, and they do so in a considered way. The education director of Chicago's Marwen Arts notes of the youth placed in arts, design and cultural organizations through Art at Work, "we send them out into the world to act as public agents, while they have the security of knowing there is support back here" (Lundius, personal communication, 7/25/07).

Finally, some types of good learning experiences demonstrate that work and work-like experience can be developmentally rich, if supported as such. Workplaces provide ready-made and diverse communities of practice. But any effort to use work as a vehicle for learning and growth, and especially to nurture vocation in the deeper ways I have tried to outline, will also require attending to the steady disappearance of "good work". If this macro-economic problem does not seem directly relevant to a monograph on youth development, it is actually central to it. If young people are to succeed with the critical developmental task of finding a pathway to occupation that is a good individual match, they need a labor market that supports this possibility (Heinz, 2009).

More fundamentally, when we abandon the idea of economies as local, as tied to place, we inadvertently turn our attention away from those immediately around us, especially the rising generation. Among other effects, current patterns of production erode the notion of "a civic space in which different classes and groups of people share responsibility with and to each other" (Gee, Hull & Lankshear, 1996, p. 41).

It is not far-fetched, then, to argue that, while the idea of good learning experiences for young people may not be a counter to globalization, it helps modestly with the critical task of de-globalizing our understanding of what young people need to thrive. It revitalizes and renews disciplines and fields of endeavor. In this it acts as a source of cultural renewal, making a distinct contribution not only to the lives of young people but to society as a whole.

Good learning experiences help make a larger world that often seems distant and monolithic more differentiated and human.

The power to certify learning and define accomplishment is also less completely centered in schooling.

coda: how other countries structure learning, in school and out

European countries struggle as much as the United States with finding a place for youth; a German youth worker asks, for instance, "Where in society do our kids have the opportunity to reflect upon the demands they have to face when they have left school?" (Cuconato et al, undated, p. 24). There is a tension in the European literature between a discourse emphasizing competition and one emphasizing social inclusion. There is a sense as well in the European literature that youth now have too much responsibility "to decide and to act in a self-directed way" (Heinz, 2009, p. 398); and that youth transitions have become more precarious, due to globalized, post-industrial economies and more fluid labor markets (Walther, 2005). As in the United States, the unemployment rate among 16 to 19 year olds who are in the job market is much higher than for older workers. Relatedly there is less certainty about which competencies and qualifications will be most relevant in the coming years (thus, in part, the promotion of lifelong learning and more flexible learning arrangements).

At the same time European debate about what youth need is much more deliberate and in some sense normative than the equivalent American debate. It is also more central in civic discourse. Young people are recognized as having distinct rights of citizenship, even when the discussion is about problems of social inclusion or labor market integration. (In some respects in the European context work is viewed as an important expression of citizenship.) Youth policy – and the youth work sector – is more visible in Europe than in the United States and itself tends to be oriented toward the goal of social inclusion or social citizenship, that is, helping young people become integrated into, come to feel that they have a role in the larger social and economic life of their societies (Parsons, 2005; Walther, 2005).

Learning-related thinking and writing in Europe is less school-centric than in the United States. Schools are, typically, placed in a larger context that emphasizes a need for a multi-dimensional set of learning supports. Morch & du Bos-Reymond (2006, p. 24) write that "The more varied the education system becomes, the more accessible it is to all young people and adaptable to changing job demands". Schools are seen as responsible for accommodating non-formal learning practices that support individual choice and exploration. The power to certify learning and define accomplishment is also less completely centered in schooling (du Bois-Reymond, 2005). In general, other countries wrestle more actively than the U.S. with how to balance academic and applied dimensions in young people's learning experiences, and how to maintain or raise the status of vocational learning (Van de Stege, 2003).

European countries offer a range of models of how non-school learning might be recognized and supported in public policy, and especially how it might be integrated into coherent inter-institutional frameworks that include school systems, unions, business, higher education and government agencies (e.g. qualifications authorities, skills councils, career and technical education and training institutions, etc.). These are sometimes more bureaucratic than

Americans would be comfortable with, but they also introduce ideas that would enrich our discussion of young people's needs. One, for instance, is that of expanded or expansive learning. Complementing that is the concept of the local learning region – all the local resources, linkages, settings, from community-based organizations to vocational training bases, to apprenticeship opportunities. One report describes European efforts to rethink learning structures as being about institutional democratization (Cuconato et al, undated). In general European discourse tries to encompass both personal development concerns – equipping young people and empowering them to make choices – and labor market concerns. This tension – some call it a contradiction – has led to a broad view of what is considered productive activity during the 16 to 19 age period.

Age 16 as a Demarcation Point. Many countries now provide a common schooling experience until the end of 10th grade or age 16, after which point pathways for young people diverge. The European literature describes the varied approaches to structuring learning, training and work experience from age 16 to 19 or 20 as transition regimes or post-compulsory learning. Most countries create at least a few defined pathways, with apprenticeship or other work-like experiences being prominent elements. Young people typically have some choice; they might prepare for college or university, concentrate in a vocational area, or take coursework in the equivalent to a community college. Although data are not easily comparable and percentages vary by country, it seems that about a third of each youth cohort typically takes an academic route and about a third a defined vocational route, with the remainder in more mixed pathways. Career and technical education usually leads to first or second level qualifications, tied into each country's national qualifications framework for various occupations and industries.

Some countries have a more explicitly vocational focus for youth during this time and age period, others combine that focus with a civic or broadly social one. The relative distribution of time spent in school, vocational and community-based settings varies. The so called "dual system" countries – Germany, Austria, and Denmark being the clearest examples—have strong work-based learning arrangements, supported by industry, unions and technical community colleges (Grubb, 2009). The Netherlands has a layered career and technical education system, that begins at age 12 with participation in "preparatory" career and technical education, initial planning by teachers and discussions with parents. Youth who choose a vocational route at age 16 may apprentice at either a business firm or a "regional practice center" (Onstek & Blokhuis, 2007). By way of contrast, Italy has a less well-defined career and technical education system and youth work typically embodies civic themes and collective sentiments. In an arts program based in Palermo, called Arciragazzi, program graduates banded together to help run a municipal recreation program and also started a temporary shelter for young children (Cuconato et al, undated).

Australia has recently embraced a strong career and technical education system for the post-compulsory years (grades 11 and 12), for the first time requiring youth to make career choices in the middle of high school (Taylor, 2005). Career and technical education and training experiences for high school age youth have been linked into the national vocational qualification system. Industry has asked for and received a significant role in shaping the whole system, including vocational curricula. As Taylor (2005, p. 212) notes, the whole reform process has been driven by a perceived need for economic restructuring and "underpinned with a supporting discourse of equity".

The United Kingdom is notorious for introducing and abandoning initiatives for this age group but has generally been experimenting for over three decades with learning arrangements that take young people outside of school for either part of the school day or part of the school year. Recent governments have struggled to overcome a history

of organizing learning for "competition and selection", rather than for inclusion and reasoned choice. While proposals for strengthening learning for youth emphasize work-related learning, the concept has remained not well worked through. Moreover, "the work-based route, with inadequate and fragmented employer engagement and a shortage of apprenticeship places, still plays a relatively marginal role" (Hodgson & Spours, 2006, p. 326).

The U.K. has also focused recently on the potential for applied learning and working roles in what it calls the creative and cultural sector.[19] Agencies responsible for workforce development have joined with those representing the cultural sector (e.g. libraries and archives, museums, music and theater bodies) to develop a "blueprint" for better defining and broadening the array of entry-level work in the creative and cultural sector and bringing young people into that sector. One notable example has been the "Conservation Technician", an entry level role for which a consortium of 20 institutions has worked to define three overlapping skills sets and job descriptions. Funds have been raised for Creative Apprenticeships in community arts management, cultural and heritage venue operations, live events and promotion, music business, and technical theater.

A Prominent Role for Youth Apprenticeship. Apprenticeship appears to be a valued social role and identity in many countries. Most European secondary education systems now include a

19. This sector, overseen by a national "skills council", includes advertising, crafts, cultural heritage, design, music, performing, literary and visual arts.

↘ *increased flexibility for 14 to 16 year olds*

One example of efforts in the U.K. to break up historic educational patterns is an initiative called "Increased Flexibility for 14 to 16 Year Olds" (IFP, part of a larger initiative called "14-19 Pathfinders"). This initiative introduces youth to specific vocational fields, and the vocational qualifications system, through vocational coursework at a community college (called further education colleges), complemented by workplace experiences. IFP is implemented by local partnerships, with the further education colleges usually acting as lead partner. The components are intended to provide a basis for better informed decisions about post-16 education and training. Fields include engineering, information technology, health and social care, applied art and design, applied business, construction and manufacturing, and horticulture, among others (Golden, et al, 2004).

Participating youth report liking the practical focus, being able to concentrate on one field for a time, being responsible for their own learning, being able to pace themselves on tasks, the physical freedom to move around and, especially being treated like adults. Youth appreciate that mentors and tutors do not use authority in an arbitrary manner and that they hold their own craft or trade, as well as other ones, in esteem (Lumbie, 2007). In an interview, the mother of one young woman observed that "tasks were worded properly, that is her daughter could understand what she was expected to do". Other parents also noted in different ways that the learning in this program seemed "more accessible" (Lumbie, 2007, p. 12). Youth report appreciating physical demonstration as a teaching and corrective approach, the opportunity to meet and work with new people, and the general experience of "learning in a different environment at this stage in their school career" (Golden et al, 2004, p. 81).

government funded or subsidized apprenticeship pathway beginning at age 16 (some beginning as young as age 14), with workplace experiences for at least two or three days a week, depending on a young person's concentration. Even young people on college pathways may be required to spend a day a week in an apprenticeship-like experience, as is the case in the Netherlands (Van de Stege, 2003), or have it as one option, as in the United Kingdom (Guile & Okumoto, 2007).

In addition to more traditional apprenticeship in manufacturing trades there are many newer options, for instance in the caring, human service and health professions, in emergent fields like biotechnology, telecommunications and, as described above, in what is called the creative and cultural sector. Skills qualification authorities have worked to design qualification structures which acknowledge the distinct nature of work and the more fluid definition of roles and expertise in newer sectors. The authorities have also recognized that it is important to highlight professional roles that young people from disenfranchised circumstances might not think of for themselves, for example the above-mentioned work in technical care of museum collections.

Germany's widely studied youth apprenticeship system is usually viewed as a model for a full-fledged commitment to youth apprenticeship, in spite of growing difficulties in finding enough placements for youth. About half of all youth in Germany combine work and schooling through a three year apprenticeship leading to a qualification in one of 350 occupations (Schwartz, 2010, p. 1; 15 percent take a CTE concentration in some newer field, e.g. health professions, 25 percent pursue university studies). Youth apprentices in Germany are considered employees, are paid for attending part-time vocational schools and are protected by labor agreements. Vocational schools in Germany (run by each state) are closely tied to industry and unions, and youth apprentices are in vocational school two days a week for the first year or two and a day and a half after that. Vocational staff play an active role in overseeing workplace experiences.

Among the other strengths of the German apprenticeship system, in addition to the breadth of fields involved, are the high status of vocational educators; a strong career counseling network throughout the country; a foundation in law spelling out roles and responsibilities of all stakeholders, including employers and trade unions; and a nation-wide network of advisory bodies that bring the "social partners" together on a regular basis (Schwartz, 2010).

Many observers have commented on the importance of cultural sanction to the historic success of Germany's youth apprenticeship system. Employers believe strongly in the importance of investing in young people (Schwartz, 2010). The German culture values, with both "recognition and status, a wide array of occupations not requiring university training" (Glover, 1996, p. 84). All the stakeholders – employers, trade unions, education authorities, and government as a whole – are fully committed to youth apprenticeship. The cost – unacceptable to most Americans – is that young people are pushed "in educational and career directions very early in their lives" (Lehmann, 2005, p. 108).

Youth apprenticeship is emerging as an important institution in countries outside the Euro- Zone as well, with Australia and Canada being two examples. In Australia apprenticeships for 16 through 18 years olds have been conceptualized as "an additional site for learning…a site for social interaction, the growth of personal maturity and self-efficacvy, and a source of information for planning post-secondary pathways" (Smith, 2009, p. 429). A number of Canadian provinces, including Alberta, British Columbia and Ontario, provide young people the option of doing an apprenticeship beginning at age 16, with varying elements. Programs typically include school-based coursework designed to complement work-site activities, occupation-specific classroom time at a regional training center and

paid work placement, all of which provide credits toward graduation (Taylor, 2006). Students might take an applied math, science or English course designed to complement vocational activities, generic vocational coursework (e.g. healthy and safety, work practices and procedures, worker education agreements) and coursework specific to the trade involved (e.g. for automotive repair coursework in power trains, steering, brakes, electrical, etc.). Some apprenticeships also include "integration days", time away from the field to reflect on and integrate workplace experiences.

There is, finally, some inter-sectoral emphasis in European countries on helping young people through transition periods, whether with counseling or simply physical bases for youth. The Netherlands, for instance, uses a "social partnership" approach in which government works closely with the private sector to create a variety of work and work-like experiences, and to define qualifications in different sectors (Van de Stege, 2003). In Wales, local partnerships called Community Consortia for Education and Training have been able to organize cohorts of learners by specific interests; and to help local school leaders learn about new or growing occupational niches, for example in applied arts, design and tourism (Morgan, Sanders & Turner, 2004).

alberta's registered apprenticeship program

In Alberta's Registered Apprenticeship Program (RAP) young people can get high school course credits for apprenticeship time; for each 125 hours in apprenticeship at a work site students receive credit for one elective, up to eight courses worth (Lehmann, 2005). RAP is structured to have some attributes of a true apprenticeship, in that young people are viewed by stakeholders – schools, employers, trade unions – as both high school students and "fully registered and indentured apprentices" (under the purview of the provincial Apprenticeship and Industry Training Board; Lehmann, 2005, p. 110). In "9-to-5" trades young people tend to work in blocks, for example, six months at school and then six at work. Young people can continue in the particular apprenticeship after graduating from high school.

In reflecting on RAP, Lehmann (2005, p. 109) observes that youth apprenticeship in the Canadian context is more closely tied to the world of work than other vocationally oriented school approaches, but is nonetheless constrained by the lack of larger cultural sanction for the choice of work over academics during the high school years. Young people reportedly bear a good deal of responsibility for making the experience work, for instance, finding employers willing to take an apprentice, arranging their schedules. Youth report that their apprenticeship experiences remain unconnected to a larger plan or progression. Because RAP is viewed as an individual choice, it is not embedded in a larger picture that helps young people see what various pathways are from high school to further options and choices. Young people themselves bear responsibility for integrating applied and academic learning, and usually chose to keep the two separate. As one young woman notes, "Going to work and going to school are two different things" (Lehmann, 2005, p. 120) Apprentices also report feeling caught between two worlds, feeling neither like students nor like workers.

appendix

PERSONAL COMMUNICATIONS (INTERVIEWS) CITED

Gina Anselmo, Marwen Arts, Chicago, 12/19/06

Ron Bieganski, Free Street Theater, Chicago, 7/15/08

Paulina Camacho, Marwen Arts/Art at Work, Chicago, 1/8/07

Zanna Chase, Apprenticeship in Science and Engineering, Portland, 6/28/07

David Feiner, Albany Park Theater Project, Chicago, 6/25/08

Maria Gaspar, Marwen Arts, Chicago, 7/2/07

Steve Goodman, Educational Video Center, New York City, 1/5/07

Alvin Keith, Roundabout Theater, New York City, 4/19/07

Scott Lundius, Marwen Arts, Chicago, 7/25/07 (?)

Bryn, Magnus, Free Street Theater, Chicago, 7/15/08

Liz Millmn, Joffrey Ballet, Chicago, 8/19/08

Cathleen Mitchell, Careers Through Culinary Arts, 10/23/06

Alfredo Nambo, Big Picture School, Chicago, 11/26/07

Steve Strauss, Apprenticeship in Science and Engineering, Portland, 5/24/07

Claudia Vicin, Artists for Humanity, Boston, 1/11/07

Phil Wenger, Urban Boat Builders, St. Paul, 6/27/07

Simon Yu, Marwen Arts, Chicago, 6/8/07

Denise Zaccardi, Chicago T.V. Network , Chicago, 7/8/08

references

Adams, C. (2010). Remediation demands stretching resources of community colleges. *Education Week,* 30, 3, September 15, p. 8.

Albertson, C., & Davidson, M. (2007). 'Drawing with light and clay: Teaching and learning in the art studio as pathways to engagement', *International Journal of Education & the Arts,* 8/9, Accessed 12/12/09 from http://www.ijea.prg/v8np/.

Almeida, C. and Steinberg, A. (2001) 'Introduction', in C. Almeida and A. Steinber (eds.), *Connected Learning Communities: A Toolkit for Reinventing High School* Boston, MA: Jobs for the Future.

Arenas, A. (2008). 'Connecting hand, mind, and community: Vocational education for social and environmental renewal', *Teachers College Record,* 110/2: 377 – 404.

Arenson, K. (2000). The learning gap. The New York Times, April 9, p. A21.

Aron, L. & Zweig, J. (2003). 'Educational alternatives for vulnerable youth: Student needs, program types, and research directions', Urban Institute.

Aronson, P. (2008). 'Breaking barriers or locked out? Class-based perceptions and experiences of postsecondary education', *New Directions for Child and Adolescent Development,* 119: 41 – 54.

Asch, C. (2010). The inadvertent bigotry of inappropriate expectations. Education Week, June 16th, p. 35

Atwell, G. (2010). 'Social software, personal learning environments and the future of teaching and learning', Accessed 1/15/10 from http://www.scribd.com/doc/5495503/Social-Software-Personal-Learning-Environments-and-the-Future-of-Teaching-and-Learning.

Baker, D. and Mori, I. (2009). 'The educational transformation of work: Towards a new synthesis', *Journal of Education and Work*, 22/3: 163-193.

Bailey, T. (1993). Can youth apprenticeship thrive in the United Sates? *Educational Reseacher,* 22,3, 4-10, 1993.

Ball, S. Macrae, S. & Maguire, M. (1999). 'Young lives, diverse choices and imagined futures in an education and training market', *International Journal of Inclusive Education*, 3/3; 195 – 224.

Barab S. et al. (2007). Our designs and the social agendas they carry. *Journal of the Learning Sciences,* 16, 2, 263-305.

Barker, K. (2002). *Innovations in workforce management: The electronic learning record, prior learning assessment, and human capital accounting*. Prepared for Workshop on Public Sector Innovation, University of Ottawa.

Belton, T. & Priyadharshini, E. (2007). 'Boredom and schooling: a cross-disciplinary exploration', *Cambridge Journal of Education*, 37/4: 579-595.

Berryman, S. (1995) 'Apprenticeship as a paradigm of learning', in N. Grubb (ed.), *Education through Occupations in American High Schools. Volume I: Approaches to Integrating Academic and Vocational Education,* New York: Teachers College Press.

Bishop, J. & Ferran, M. (2004). 'The impacts of career-technical education on high school labor market success', *Economics of Education Review,* 23/4: 381-402.

Bolton, T & Priyadharshina, E. (2007). Boredoom and schooling: A cross-disciplinary exploration. *Cambridge Journal of Education,* 37, 4579-595.

Booth, E. (2010). El Sistema's open secrets. Unpublished manuscript, April.

Botstein, L. (2008) Let teenagers try adulthood. *Yearbook of the National Society for the Study of Education*, 107(2), 117-121. doi: 10.111/j.1744-7984.2008.00179_1.x

Bottoms, G. (2008). 'Promote more powerful learning', *Techniques,* November-December: 16-21.

Bottoms, G. & Young, M. (2008). *Crafting a new vision for high school: How states can join academic and technical studies to promote more powerful learning*. Retrieved from Southern Regional Education Board website: http://publications.sreb.org/2008/08V07_Crafting_new_vision.pdf.

Bottoms, G. & Young, M. (2008). *Lost in transition: Building a better path from school to college and careers.* Retrieved from Southern Regional Education Board website: http://publications.sreb.org/2008/08V01_LostIn-Transition.pdf.

Brady, M. (2008). Education reform: An ignored problem and a proposal. Unpublished manuscript.

Brinson, D., Hassel, B., and Rosch, J. (2008). 'Connecting youth through multiple pathways', Public Impact–The Annie E. Casey Foundation.

Campbell, D., Lemp, C., & Treiber, J. (2006) *WIA implementation in California: Findings and recommendations.* Retrieved from University of California Agriculture and Natural Resources website: http://ucce.ucdavis.edu/files/filelibrary/5089/33964.pdf

Cantor, J. A. (1997). 'Registered pre-apprenticeship: Successful practices linking school to work', *Journal of Industrial Teacher Education*, 34/3: 35-58.

Bruner, J. (1966) *Toward a Theory of Instruction*, Cambridge, MA: Harvard University Press.

Carr, et. al. (2003). 'The work based learning route in the Netherlands and England: Comparing ideas and meanings', *Compare*, 33/4: 483-495.

Björnavåld, J. (2000). *Making Learning Visible: Identification, Assessment and Recognition of Non-Formal learning in Europe*. Retrieved from European Center for the Development of Vocational Training http://www.cedefop.europa.eu/etv/Upload/Information_resources/Bookshop/117/22_en_bjornavold.pdf.

Chaplain, R. & Gray, J. (2000). 'Young people's perceptions of themselves and their futures: Do education business partnerships make a difference?' *Journal of Vocational Education & Training*, 52/3; 349 – 371.

Cherry, R. (2009). 'The folly of academic college for all'. TCRecord Online. Accessed 8/24/09 from http://www.tcrecord.org/Content.asp?ContentID=15755.

Chisholm. L. (2008). 'Re-contextualising learning in second modernity', Research in Post Compulsory Education, 13/2;139-147.

Cohen, P. (1999) 'Apprenticeship a la mode?', in Ainley, P. and & Rainbird, H. (eds.), *Apprenticeship: Towards a New Paradigm of Learning*, London: Kogan Page.

Colardwyn, D. & Bjornavold, J. (2007). 'Validation of formal, non-formal and informal learning: policy and practices in EU Member States', *European Journal of Education,* 39/1: 69-89.

Colley, H., James, D., Tedder, M. & Diment, K. (2003). 'Learning as becoming in vocational education and training: class, gender and the role of vocational habitus', *Journal of Vocational Education and Training,* 55/4: 471-496.

Conchas, G. (2001). Structuring failure and success: Understanding the variability in Latino school engagement. *Harvard Educational Review*, 71, 3, 475-504.

Roderick, M., Nagaoka, J., Coca, V., & Moeller, E. (2008). *From high school to the future: potholes on the way to college*. Retrieved from the Consortium on Chicago School Research website: http://ccsr.uchicago.edu/downloads/9641ccsr_potholes_casestudies.pdf.

Cuconato, M. and Colleagues. (2003). Participation and informal learning in young people's transitions to work. YOYO Working Paper #3, vol. III. Tubingen, IRIS.

Daniel, N. (2007). *Sweat Equity Enterprises: The Convergence of Design education, Youth Development and Situated Learning.* Dissertation submitted to the Program in Teaching and Learning, New York University.

Darling-Hammond, L. (1996). The right to learn and the advancement of teaching: research, policy and practice for democratic education. *Educational Researcher,* 25, 6, 5-17.

De Wit, d., Karioja, K., & B. Rye. (2010). Student perceptions of diminished teacher and classmate support following the transition to high school: Are they related to declining g attendance? *School Effectiveness and School Improvement,* 21, 4, 451-472.

Deke, J. & Haimson, J. (2006). Valuing student competencies: Which ones predict postsecondary education and earnings and for whom? Princeton, New Jersey: Mathematica Policy Research.

Diemer, M., & Blustein, D. (2006). 'Critical consciousness and career development among urban youth', *Journal of Vocational Behavior*, 68: 220-232.

Down, B. (2009). 'Schooling, productivity and the enterprising self: beyond market values', Critical Studies in Education, 50/1:51-64.

Downey, D., Von Hippel, P., & Broh (2004). Are schools the great equalizer? Sources of inequality in cognitive skills. American Sociological Review, 69, 5, 613-635.

du Bois-Reymond, M. (2005). What does learning mean in the learning society? In C. Chisholm, B. Hoskins & C. Glahn, eds. Trading Up: Potential and Performance in Non-Formal Learning. Council of Europe.

Edmunds, R. & Freeman, S. (2009). New demands and dimensions for apprenticeship in the new economy school work partnerships. Retrieved from University of Manitoba http://www.umanitoba.ca/unevoc/2002conference/text/papers/freeman.pdf

Eisner, E. (1999) 'The misunderstood role of the arts in human development' in B. Pressisen (ed.), *Teaching for Intelligence*, Arlington Heights, IL: Skylight.

Erbstein, N. & Heckman, P. (2007). Locating Support for Disconnected Youth in the San Joaquin Valley. U.C. Davis School of Education.

Erikson, E. (1963). *Childhood and Society*. New York: W.W. Norton.

Erikson, E. (1968). *Identity: Youth and Crisis*. New York: W.W. Norton.

Erikson, E.H. and Erikson, K.T. (1987). 'The confirmation of the delinquent', in S. Schlein (ed.), *A Way of Looking at Things: Selected papers from 1930 to 1980*, New York: Norton.

Farrar, N. & Trorey, G. (2006). 'Maxims, tacit knowledge and learning: developing expertise in dry stone walling', Journal of Vocational Education & Training, 60/1: pages 35-48.

Field, K. (2009). 'A Year of college for all: What the president's plan would mean for the country', *Chronicle of Higher Education*, 5/22/09: 16-17.

Ford, M. & Forman, E. 2006). Redefining disciplinary learning in classroom contexts. In J. Green & A. Luke (eds.), Re-Thinking Learning: What counts as learning and what learning counts. Review of Research in Education, American Educational Research Association, vol. 30.

Gardner, H. (1991) *The Unschooled Mind*, New York: Basic Books.

Gardner, H. (1993). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Gee, J., Hull, G. & Lankshear, C. (1996). *The New Work Order,* Boulder, CO: Westview Press.

Gentry, M., Rizza, M., Peters, S. and Hu, S. (2005) 'Professionalism, sense of community and reason to learn: Lessons from an exemplary career and technical education center', *Career and Technical Education Research*, 30/1: 47-85.

Gerzer-Sass, A. (2005). Family skills as a potential source of innovative human resources. In C. Chisholm, B. Hoskins & C. Glahn, eds. Trading Up: Potential and Performance in Non-Formal Learning. Council of Europe.

Gewertz, C. (2011, June 9). College for all reconsidered. *Education Week*, 30(34). Retrieved from http://www.edweek.org/ew/articles/2011/06/09/34overview.h30.html?intc=EW-DC11-TOC.

Glover, R. (1996). 'The German apprenticeship system: Lessons for Austin, Texas', *The Annals of the American Academy of Political and Social Science,* 544/1: 83-94.

Graham, M. (2009). 'How the Teaching Artist Can Change the Dynamics of Teaching and Learning', Teaching Art Journal, 7/2: 85-94.

Gray, K. (1997). 'The gatekeepers', *Techniques: Making Education and Career Connections*, 71/9: 24-27.

Greene, M. (1995). Releasing the Imagination, San Francisco, CA: Jossey Bass.

Griffiths, M., et. al. (2006). 'Learning to be in public spaces: In from the margins with dancers, sculptors, painters and musicians', British Journal of Educational Studies, 54/3: 352-371.

Grubb, N. (ed.). (1995). *Education Through Occupations in American High Schools: Approaches to Integrating Academic and Vocational Education*. New York: Teachers College Press.

Grubb, N. (2006). Vocational Education and Training: Issues for a thematic review. OECD Learning for Jobs Project.

Grubb, N. (2007). Executive Summary – Restoring value to the high school diploma: The rhetoric and practice of higher standards. East Lansing: Great Lakes Center for Educational Research and Practice. October.

Grubb, N. & Oakes, J. (2007). Restoring value to the high school diploma: The rhetoric and practice of higher standards. East Lansing: Great Lakes Center for Education Research and Practice.

Guile, D. & Okumoto, K. (2007). ''We are trying to reproduce a crafts apprenticeship': from Government Blueprint to workplace generated apprenticeship in the knowledge economy', *Journal of Vocational Education and Training* 59/4: 551-575.

Guile, D. (2006) 'Access, learning and development in the creative and cultural sector: from 'creative apprenticeship' to 'being apprenticed'', *Journal of Education and Work* 19/5: 433-454.

Guile, D. & Okumoto, K. (2007). `We are trying to reproduce a craft apprenticeship': from government blueprint to workplace generated apprenticeship in the knowledge economy. *Journal of Vocational Education and Training*, 59, 4, 551-574.

Guile, D. &Young, M. (1998), 'Apprenticeship as a conceptual basis for a social theory of learning', *Journal of Vocational Education and Training*, 50/2: 173-192.

Haberman, M. (1997. The ideology of nonwork learned in urban schools. Phi Delta Kappan, 78, 7, 499-504.

Halpern, R. (2009). *The means to grow up: Reinventing apprenticeship as a developmental support in adolescence*. New York/London: Routledge.

Hanushek, E. (2006). 'Alternative school policies and the benefits of general cognitive skills', *Economics of Education Review*, 25: 447-462.

Harreveld, R. & Singh, M. (2009). 'Contextualising learning at the education-training-work interface', Education + Training, 51/2: 92-107.

Harter, S. (1996) 'Teacher and classmate influences on scholastic motivation, self-esteem, and the level of voice in adolescents', in J. Juvonen and K. Wentzel (eds.), *Social Motivation: Understanding School Adjustment*, New York: Cambridge University Press.

Harter, S. (1999). The construction of the self. New York: Guilford.

Hartung, P. (2002). 'Development through Work and Play', *Journal of Vocational Behavior*, 61/3: 424-38.

Heck, R., Price, C. &Thomas, S. (2004). 'Tracks as emergent structures: A network analysis of student differentiation in a high school', American Journal of Education, 110/4: 321-352.

Heckman, P. & Montera, V. (2009). School reform: The flat worm in a flat world: From entropy to renewal through indigenous invention. Teachers College Record, 111(5), 1328-1351.

Heinz, W. (2009). 'Structure and agency in transition research', *Journal of Education and Work*, 22/5: 391 – 404.

Heinz, W. & Taylor, A. (2005) 'Learning and work transition policies in a comparative perspective: Canada and Germany', in Bascia, N. et. al. (eds.), *International Handbook of Educational Policy*, New York: Springer Verlag.

Higgins, J., Nairn, K., & Sligo, J. (2010). Vocational imaginationand labor market literacy: Young New Zealanders making education-employment linkages. Journal of Vocational Education and Training, 62, 1, 13-25.

Hodgson, A. & Spours, K. (2006). The organization of 14-19 education and training in England: Beyond weakly collaborative arrangements. Journal of Education and Work, 19, 4, 325-342.

Huddleston, P. & Oh, S. (2004). 'The magic roundabout: work-related learning within the 14-19 curriculum', *Oxford Review of Education*, 30/1: 83-103.

Jekielek, S., et al. (2002). 'Employment programs and youth development: A synthesis,' Edna McConnell Clark Foundation.

Jobs for the Future. (2009). Meeting the Invention Challenge: A Background Paper for Participants in a National Convening. May 11, 2009, Washington, DC.

Johnson, A. (2003). 'Curriculum integration in context: An exploration of how structures and circumstances affect design and implementation', NDCCTE, Ohio State University.

Johnson, J. & Duffett, A. (2005). 'Life after high school: Young people talk about their hopes and prospects', Public Agenda.

Kahn, D. (2006) 'The key lessons of the third adolescent colloquium', *NAMTA Journal*, 31/1: 1-25.

Kinchloe, J. (1995). Toil and trouble. New York: Peter Lang.

Kleiber, D. (1999) *Leisure Experience and Human Development: A Dialectical Interpretation*, New York: Basic Books.

Kohn, A. (2010). Letter to the editor. New York Times, March 21st, p. WK9.

Kunnen, E., et. al. (2008). 'The shapes of commitment development in emerging adulthood', *Journal of Adult Development*, 15: 113-131.

LandanA A. et al. (2003). Educational Alternatives for Vulnerable Youth. Washington, D.C.: Urban Institute.

LaPlante, A. and R. Stearns (2008). *Multiple pathways program assessment rubric: A rubric for self-assessing program quality, developing action plans for improvement, and measuring progress.* Retrieved from Maine Department of Education: http://www.maine.gov/education/speced/tools/b1graduation/tools/pathways_rubric.pdf

Larson, R. (2004) *'Adolescents' experience in social institutions: Unlocking youth's (tremendous) potentials for growth'*, article prepared for the conference Positive Development: Linking Individuals, Communities, and Social Policies, Weimar, Germany, October.

Larson, R. (in press). Positive development in a disorderly world. Journal of Research on Adolescence. Presidential Address, Society for Research on Adolescence.

Larson, R. and Hansen, D. (2005) 'The development of strategic thinking: Learning to impact human systems

in a youth activism program', *Human Development*, 272: 1-23.

Lehmann, W. (2005). "I'm still scrubbing the floors': Experiencing youth apprenticeships in Canada and Germany', *Work, Employment & Society,* 19/1: 107-129.

Lerman R. (2008). 'Are skills the problem? Reforming the education and training system in the United States', Upjohn Institute for Employment Research.

Lerman, R. (2008). 'Widening the scope of standards through work-based learning', Presentation at the Thirtieth Annual APPAM Research Conference November 6, 2008 Los Angeles, California.

Lerman, R. (2003). `Is the school-to-work movement on the right track?' In W. Stull & N. Sanders, eds., *The School-To-Work Movement*. Connecticut: Praeger

Lerman, R. (1996). 'Helping disconnected youth by improving linkages between high schools and careers,' Urban Institute.

Lerman, R. & Packer, A. (2010). Will we ever learn? *Education Week*, April 21st, pp. 30-31.

Levine, E. (2002). *One kid at a time.* New York: teachers College Press.

Lewis, T. (1998). Vocational education as general education. *Curiculum Inquiry*, 28, 3, 283-309.

Lewis, T. (2007). 'Social inequality in education: A constraint on an American High Skills Future,' *Curriculum Inquiry,* 37/4: 329-349.

Liang, B., et. al. (2008). 'Mentoring relationships from early adolescence through emerging adulthood: A qualitative analysis', *Journal of Vocational Behavior*, 72/2: 168-182.

Littky, D. (2004). The big picture: Education is everyone's business. Alexandria, VA: Association for Supervision and Curriculum Development

Ludwig, J. (1999). 'Information and inner city educational attainment'. *Economics of Education Review*, 18/1: 17-30.

Lumby, J. (2007). '14-16 year olds in further education colleges: lessons for learning and leadership', *Journal of Vocational Education & Training,* 59/1: 1-18.

Marks. H. (2000). Student engagement in instructional activity: Patterns in the elementary, middle and high school years. *American Educational Research Journal,* 37, 153-184.

McDonald, R. and Marsh, J. (2004) 'Missing school: Educational engagement, youth transitions, and social exclusion', *Youth and Society*, 36/2: 143-162.

Meer. J. (2007). 'Evidence on the returns to secondary vocational education', Economics of Education Review, 26/5: 559-573.

Meier, D. (2006) 'Undermining democracy', *Dissent*. 53/4: 71-75.

Mørch, S. & du Bois-Reymond, M. (2006). 'Learning in times of modernization', New Directions for Child and Adolescent Development, 113: 23-35.

Morgan, A., Sanders & Turner. (2004). Community consortia and post-compulsory education: a local approach to local problems', Journal of Vocational Education & Training, 56//2: 227 – 244.

Morrison, A. (2008). "I can't do any more education": Class, individualisation and educational decision-making, *Journal of Vocational Education & Training*, 60(4), 349-362.

Mortimer, J., Zimmer-Gembeck & Holmes (2002). The process of occupational decision making: Patterns during the transition to adulthood', *Journal of Vocational Behavior*, 61/3: 439-65.

Muhlenberg, E. (2011). Who benefits? A comparison of school-firm partnerships in Chicago and Berlin. Ph.D. Dissertation, Department of Political Science, University of Illinois, Chicago.

Murphy, K. (2004). 'Imagination as Joint Activity: The Case of Architectural Interaction', *Mind, Culture, &*

Activity, 11/4: 270-281

National Center on Education and the Ecomony (2006). *Tough Choices for Tough Times: The Report of the New Commission on the Skills of the American Workforce.* New York: Jossey-Bass.

National Collaborative on Workforce and Disability. (2005). 'Strategies for Youth Workforce Programs to become employer-friendly intermediaries', NCWD Information Brief #12.

National Collaborative on Workforce and Disability. (2006). 'Blending and braiding funds and resources: The intermediary as facilitator', NCWD Information Brief #8.

National Youth Employment Coalition. (2009). Expanding education options for struggling students and disconnected youth. Retrieved from Jobs First NYC http://www.jobsfirstnyc.org/docs/Lessons_Learned_from_the_NYEC_Learning_Exchanges-webpub.pdf

Nelson, Bonalyn. (1997). 'Should Social Skills Be in the Vocational Curriculum? Evidence from the Automotive Repair Field', In Alan Lesgold, Michael Feuer, and Allison Black, eds. *Transitions in Work and Learning: Implications for Assessment.* Washington, DC: National Academy Press.

New Ways to Work and the California Workforce Association. (2005). Impact Report. Youth Council Institute.

Nga, T. & Feldman, D. (2007). 'The school-to-work transition: A role identity perspective', Journal of Vocational Behavior, 71/1: 114-134.

Ng, T. & Feldman, D. (2007). School to work transition: A role identity perspective. Journal of Vocational behavior, 71, 114-134.

Noddings, N. (2007). *When School Reform Goes Wrong*, New York: Teachers College Press.

Noonan, A., Hall, G. & Blustein, D. (2007). 'Urban adolescents' experience of social class in relationships at work', Journal of Vocational Behavior, 70/3: 542-560.

Oakes, J. & Saunders, M. (2008). *Beyond Tracking: Multiple Pathways to College, Career, and Civic Participation*. Cambridge, Massachusetts: Harvard Education Press.

Onstenk. J. & Blokhuis, F. (2007). 'Apprenticeship in the Netherlands: connecting school- and work-based learning', *Education + Training*, 49/6: 489 – 499.

Paglia, C. (2010, August 29). Revalorizing the trades. *The Chronicle Review*. Retrieved from http://chronicle.com/article/Revalorizing-the-Trades/124130/

Paradise, R. (1998). 'What's Different about Learning in Schools as Compared to Family and Community Settings?' *Human Development* 41: 270-278.

Parsons, C. (2005). 'School exclusion: The will to punish', *British Journal of Educational Studies*, 53/2: 187-211.

Partee, et. al. (2006). 'Helping Youth Succeed through Out-of-School Time Programs,' American Youth Policy Forum Inc.

Partee, G. & Halperin, S. (2006). 'Preparing youth for careers, lifelong learning, and civic participation: Principles and characteristics of six leading United States youth development programs', American Youth Policy Forum.

Pearlman, B. (2002). 'Designing, and Making, the New American High School', Technos Quarterly, 11/1. Accessed 3/16/06 from http://www.ait.net/technos/tq_11/1pearlman.php.

Perry, J., Przybysz, J., & Al-Sheikh, M. (2009). 'Reconsidering the "aspiration-expectation gap" and assumed gender differences among urban youth', *International Journal for Educational and Vocational Guidance*, 9/2: 111-123.

Phillips, S. D., Blustein, D. L., Jobin-Davis, K., & Finkelberg White, S. L. (2002). 'Preparation for the school-to-work transition: The views of high school students', *Journal of Vocational Behavior*, 61:1-15.

Pines, M. & Callahan, J. (2000). 'Recipes for success: Youth council guide to creating a youth development

system under WIA', Center for Workforce Development at Rutgers University.

pjb Associates. (2004). Students as journeymen between communities of higher education and work. Retrieved from European Commission website: http://cordis.europa.eu/documents/documentlibrary/82608291EN6.pdf

Quinn, J., et. al. (2008). 'Dead end kids in dead end jobs? Reshaping debates on young people in jobs without training', *Research in Post-Compulsory Education*, 13/2: 185-194.

Quinn, J. Lawy, R. & Diment, K. (2008). Dead end kids in dead end jobs: Reshaping debates on young people in jobs without training. Research in Post Compulsory Education, 13, 2, 185-194.

Ranson, S. (2004). 'Configuring school and community for learning: the role of governance', *London Review of Education*, 2/1: 3 – 15.

Raty, H. (2006). 'What comes after compulsory education? A follow-up study on parental expectations of their child's future education', *Educational Studies*, 32/1:1-16.

Renzulli, J. 'The definition of high-end learning', Accessed 7/22/09 from http://www.gifted.uconn.edu/sem/semart10.html.

Resnick, L. B. (1997). 'Getting to work: Thoughts on the function and form of the school-to-work transition', In A. Lesgold, M. J. Feuer, & A. M. Black (Eds.), *Transitions in Work and Learning: Implications for Assessment.* Washington, DC: National Academy Press.

Richmond, G. & Kurth, A. (1999). Moving from outside to inside: High school students' use of apprenticeships as vehicles for entering the culture and practice of science. Journal of Research in Science Teaching, 36, 6, 677-697.

Riordan, M. (2006). Discovering the Core of Experiential Education: How Big Picture Students Learn Through Internships. Dissertation submitted to the Department of Teaching and Learning, New York University.

Robelen, E. (2009). 'Louisiana's career diploma stirs concern on standards', *Education Week*, 29/13: 1, 17.

Roberts, K. (2009). Opportunity structures then and now. *Journal of Education and Work*, 22, 5, 355-368.

Roderick, M. (2006). *Closing the Aspiration-Attainment Gap*. Retrieved from MDRC website: http://www.mdrc.org/publications/427/full.pdf.

Roderick, M., et. al. (2008). 'From high school to the future: Potholes on the road to college,' Consortium on Chicago School Research.

Rogers, B. (1997). Informing the shape of the curriculum: New views of knowledge and its representation in schooling. *Journal of Curriculum Studies*, 29, 6, 683-710.

Rose, M. (2008), `Blending hand work and brain work'. In Oakes, J. & Saunders, M. (2008). *Beyond Tracking: Multiple Pathways to College, Career, and Civic Participation.* Cambridge, Massachusetts: Harvard Education Press.

Rosenbaum, J. (2003). High schools' role in college and workforce preparation: So college for all policies make high school irrelevant? In W. Stiull & M. Sanders, eds., *The School to Work Movement: Origins and Destinations.* Connecticut: Praeger.

Rosenbaum, J., Stephen, J., & Rosenbaum, J. (2010, Fall). Beyond one-size-fits-all college dreams. American Educator, 34(3), 2-8.

Rothstein, R. (2010). A blueprint that needs more work. Washington, D.C.: Economic Policy Institute, March 23rd.

Rycik, J. (2007). Re-thinking the reform agenda for American secondary schools. American Secondary Education, 35, 2, 49-52.

Ryken, A. E. (2006). "Goin' somewhere": How career technical education programs support and constrain urban youths' career decision-making', *Career and Technical Education Research*, 31/1: 49-71.

Schnabel, K., Alfeld & Eccles. (2002). 'Parental Influence on Students' Educational Choices in the United States and Germany: Different Ramifications-Same Effect?' *Journal of Vocational Behavior*, 60/2: 178-198.

Schrag, F. (2010). Nurturing talent: How the U.S. succeeds. *Education Week*, 3/17/10, pp. 22-23.

Shulman, S., & Ben Artzi, E. (2003). Age-related differences in the transition from adolescence to adulthood and links with family relationships. *Journal of Adult Development*, 10/4: 217-226.

Schwartz, B. (2010). The German dual system: Impressions of a U.S. observer. Unpublished paper, March.

Schwartz, S. (2005). A new identity for identity research. Journal of Adolescent Research, 20, 3, 293-308.

Siemens, G. (2007). 'Practical connectivism', A presentation at the University of Fairbanks Alaska. Accessed 1/10/10 from http://www.slideshare.net/gsiemens/practical-connectivism.

Silverberg, M. et al. (2004). National assessment of vocationaleducation: Final report to Congress. U.S. Department of Education.

Sisario, B. (2007). In the Bronx a film school with a ghetto name. New York Times, Septmber 13th, p.B8A.

Smith, C. (1996). 'Employer involvement in Georgia youth apprenticeship programs', *Research Brief*, 2/2: Fall 1996.

Smith, E. (2009). New models of working and learning: How young people are shaping their futures differently. Research in Post-Compulsory Education, 14,4, 429, 440.

Smith, F. (2006). 'Learning from the pros', Edutopia. July 2006. Accessed 6/24/09 from http://www.edutopia.org/learning-from-the-pros.

Smith, J. (2003). 'The making of young lives with/against the school credential', *Journal of Education and Work*, 16/2: 127-146.

Spera, V. (1997). 'School-to-careers and workforce development in Austin, TX: An American Youth Policy Forum field trip — March 19-21, 1997', American Youth Policy Forum. Accessed 12/12/09 from http://www.ayph.org/tripreports/1997/tr031997.htm.

Stasz, C., Ramsey, K., & Eden, R. (1995). Teaching generic skills. In W.N. Grubb (Series Ed.), Education through occupations in American high schools: Vol. 1. *Approaches to integrating academic and vocational education* (pp. 169-191). New York: Teachers College Press, Columbia University.

Stern, D. & Stearns, R. (2008). Evidence and challenges. In Oakes, J. & Saunders, M. (2008). *Beyond Tracking: Multiple Pathways to College, Career, and Civic Participation.* Cambridge, Massachusetts: Harvard Education Press.

Stevenson, J. (2001). 'Vocational Knowledge and Its Specification', *Journal of Vocational Education & Training*, 53/4: 647-62.

Stipek, D. (2004). *Engaging Schools: Fostering High School Students' Motivation to Learn.* Washington, D.C.: National Research Council, National Academy Press.

Stone, J., & Aliaga, O. (2005). 'Career and technical education and school-towork at the end of the 20th century: Participation and outcomes', *Career and Technical Education Research*, 30/2: 125-144.

Stone, K., Kaninski & Gluckner. (2009). 'Closing the gap: Education requirements of the 21st. century production workforce', *Journal of Industrial Teacher Education*, 45/3: 5-32.

'Stopping the dropout exodus', *Time,* 5/3/07….

Szymanski, E. (1994). 'Transition: life-span and life-space considerations for empowerment', *Exceptional Children*, 60/5: 402-410.

Tanggaard, L. & Elmholdt, C. (2008). Assessment in practice: An inspiration from apprenticeship. *Scandanavian Journal of Educational Studies*, 52(1), 97–116. doi:10.1080/00313830701786719

TASC. (2008). 'Strategies for success: A plan to align out-of-school time initiatives with high school reform', Accessed 1/4/10 from http://www.tascorp.org/content/document/detail/2231/.

Taylor A (2005), 'What employers look for: the skills debate and the fit with youth perception', *Journal of Education and Work,* 18/2: 201-218.

Taylor, A. (2006). 'The challenges of partnership in school-to-work transition', *Journal of Vocational Education & Training, 58*/3: 319 – 336.

Taylor, A. & Watt-Malcom, B. (2007). Expansive learning through high school apprenticeship: Opportunities and limits. *Journal of Education and Work*, 20, 1, 27-44.

The Intermediary Network. (2009). 'Community connections for youth,' Accessed 5/7/09 from http://www.intermediarynetwork.org/documents/iNet_Community_connections_for_Youth_9_22_2008.pdf.

Thomas, E. (2007) 'Student engagement and learning in a community-based arts classroom', *Teachers College Record*, 109/3: 770-796.

Tucker, M., et. al. (1990). *America's Choice: High Skills or Low Wages*. Washington, DC: National Center on Education & Economy.

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.

Valenzuela, A. (1999). Subtractive schooling. New York: SUNY Press.

Van de Stage, C. (2003). The work-based learning route in the Netherlands and in England: Comparing ideas and meanings. Compare, 33, 4, 483-495.

Vedder-Weiss & Fortuc, D. 2011. Adolescents' declining motivation to learn science: Inevitable or not? Journal of Research in Science Teaching, 48, 2, 199-216.

Waite, S., et. al. (2006). 'Work-related learning for students with significant learning difficulties: relevance and reality', *Cambridge Journal of Education*, 36/4: 579-595.

Wallis, C. (2007, May 3). Stopping the dropout exodus. *Time*, Retrieved from http://www.time.com/time/magazine/article/0,9171,1617527,00.html?iid=sphere-inline-bottom

Walther, A. (2005). Risks and responsibilities: The individualization of youth transitions. Social Work and Society, 3, 1, 116- xx. www.socialwork.net/2005/1/socialreports/470/walther2005.pdf.

Walther, A., et al. (2004) Youth Policy and Participation. Potentials of Participation and Informal Learning in Young People's Transitions to the Labour Market. Final Report to the European Commission, IRIS.

Washington State Apprenticeship and Training Council & Office of Superintendent of Public Instruction. (2008). 'Running Start for the Trades—2008 Update', A Report to the Governor and the Legislature Pre-Apprenticeship Programs for Secondary Schools.

Wonacott, M. (2007). The WIA Youth System. Focused Futures, Ohio State University.

Wraga, W. G. (1998). 'The school-to-work movement in the United States: Policies, problems, and possibilities', *The Curriculum Journal,* 9/2: 177-195.

Wyn, J. and White, R. (2000). 'Negotiating social change: The paradox of youth', *Youth and Society*, 32/2: 165-183.

Yeager, D. & Bundick, M. (2009). The role of purposeful work goals in promoting meaning in life and in school work during adolescence. Journal of Adolescent Research, 24, 4, 423-452.

nellie mae
EDUCATION
FOUNDATION

1250 Hancock Street, Suite 205N | Quincy, MA 02169 | Phone: (781) 348-4200

nmefoundation.org