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# Knowledge in Action: The Promise of Project-Based Learning

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**by Heide Spruck Wrigley**

*Imagine a group of adult basic education students sewing a quilt that displays the story of their collective lives, or a GED class doing a research study that involves calling former students to find out if participating in the class has made a difference. Consider a group of learners starting their own cafe: negotiating space, setting budgets, getting supplies, and preparing food. Envision learners investigating the questions they have about U.S. immigration law by conducting interviews, writing about their personal experiences, talking with experts, using the library, and conducting research on the Internet. These are examples of teachers and students findings new ways of working together through a model of teaching called project-based learning.*

In its simplest form, project-based learning involves a group of learners taking on an issue close to their hearts, developing a response, and presenting the results to a wider audience. Projects might last from only a few days to several months. In some cases, projects turn into businesses, such as the student-run cafe at ELISAIR, an English for speakers of other languages (ESOL) program in New York City.

What do we know about project-based learning, and why should it be considered a viable approach to adult literacy? In this article, I situate project work within a historical context that brings inquiry-learning, a Vygotskian perspective, and progressive education into play. Although these movements occurred in a K-12 context, the language, literacy, and learning concepts pertain to adults new to reading and writing, as well. I link project-based learning to other approaches to teaching and learning, such as community action research, participatory education, and functional contexts. Finally, I discuss the benefits to be derived for adult learners, particularly in areas related to second language acquisition and preparation for the world of work.

### Getting Started

The ideas for projects come from many places. Sometimes an event or an issue acts as a catalyst, as when a group of ESOL learners spontaneously decide to organize a fund raiser to help flood victims in Honduras and Nicaragua, or a group of Latina women in a family literacy program decide to start their own Spanish-speaking parent teacher association (PTA) so they can more effectively give voice to the issues that concern them. Other times, a teacher gently introduces the idea for a project, testing to see if a particular idea resonates. No rules determine how a project is realized, although all projects seem to progress through some common phases: identification of a problem or issue; preliminary investigations; planning and assigning tasks; researching the topic; implementing the project, drafting and developing a final product; disseminating; and evaluating what worked.

### History

Project-based learning has deep roots in education. It was first discussed as an educational approach to K-12 education in an article entitled "The Project Method" by Kilpatrick (1918), who believed that using literacy in meaningful contexts provided a means for building background knowledge and for achieving personal growth. Unlike those who later advocated models of collaborative learning, Kilpatrick was less interested in the group aspects of learning than in the cognitive development that resulted from project work. He suggested that projects be interdisciplinary math, science, social studies to provide learners with a rich array of concepts and ideas. He intended that topics come from students' interests, maintaining that group projects, proposed, planned, executed, and evaluated by students, would help learners develop an understanding of their lives while preparing to work within a democracy. Although Kilpatrick imagined that projects should be driven by learner questions, in practice, many teachers assign topics (Schubert 1986), a practice that runs counter to the spirit of student-generated projects that he had in mind. Project methods were used by advocates of a larger progressive movement in education that stressed the need for child-centered education. John Dewey (Dewey, 1899), who thought that schools should reflect society, was a leader of this movement, which flourished from the late 19th to the mid 20th century. Progressivists believed that children learn best through experiences in which they have an interest, and through activities that allow for individual differences. Teachers were advised to observe learners and their interests so they could tie what students wanted to know to what the classroom provided. Practical inquiry- everyday problem solving - and meaning seeking as part of social interaction played a role in child-centered, progressive education, as well.

Project-based learning also reflects a Vygotskian perspective. Vygotsky, a Russian cognitive psychologist, theorizes that learning occurs through social interaction that encourages individuals to deal with the kind cognitive challenges that are just slightly above their current levels of ability (Wertsch, 1985). He posits that concepts develop and understanding happens when individuals enter into discussion and meaningful interaction with more capable peers or teachers. These individuals can model problem solving, assist in finding solutions, monitor progress, and evaluate success (Tharpe and Gallimore, 1988). Although Vygotsky himself did not discuss in detail how his theories on language and thought should translate into teaching, others have suggested that joint problem solving, with opportunities to shape and reshape knowledge through talk, promotes the cognitive development that Vygotsky saw as crucial (Driscoll, 1994).

Project-based learning has a great deal in common with participatory education and a Freirean philosophy of teaching adults. The key tenets of this approach hold that learning occurs when the content of the curriculum is drawn from the social context of the learners, and literacy (the word) is used to make sense of the circumstances of one's life (the world). Freirean educators stress the need to empower disenfranchised learners to fight the status quo and help create a more fair and equitable society through a process of critical reflection and collective action. Freirean-inspired projects differ from other learner-centered approaches inasmuch as they stress the socio-political aspects of the issues being addressed rather than focusing on the personal or cultural dimensions of literacy without reference to the broader social contexts in which literacy occurs (Auerbach, 1993; Wrigley, 1993).

As implemented in adult education, project-based learning also owes a debt to community action research, conducted by adults in literacy programs in the United States and in developing countries. While project-based learning is sometimes called "knowledge in action" (Barnes, 1988), action research has been defined as "ideas in action". It constitutes a process through which adult learners develop their language, literacy, and problem solving skills while researching a problem and then moving to effect change in a community (Curtis, 1990). Throughout the world, many examples exist of neighborhood residents working as a group to discuss and examine the conditions of their lives and then speaking up to document neglect and demand changes. In some communities, adult learners have investigated toxic dumping at a land ll (Merrifield, 1997), or explored what it takes to set up a local day care center or food co-op and have taken steps to establish such programs.

**Varieties**

Although most project-based learning in adult basic education is smaller in scope and narrower in focus than community action research, the two models share the conviction that, if given a chance, adults without much formal education will create responses to community issues that are creative, feasible, and worthwhile. At El Barrio Popular Education Program, in East Harlem, New York, for example, the women in the program started cooking and sharing their own food for lunch in response to the high prices being charged by local restaurants. After some discussion and research, this project grew into a catering business for the wider community as the women ended up providing Cuban and Dominican food at social events. The project achieved such success that it was highlighted in *The New York Times*newspaper.

While a community orientation to literacy education meshes nicely with project-based learning, not all project-based learning has a political focus. For example, teachers working in the humanistic tradition, which emphasizes individual growth and self-actualization rather than collective action, often encourage projects that involve personal or cultural expressions of self and community, such as oral histories. Others integrate projects into a theme-based curriculum, encouraging projects that draw on learners' creative impulses: learners may develop memory books, design original books for their children, write short plays and skits, produce poetry and songs, or put together a collection of sayings, rituals, and events from their childhood that they want to preserve for their children. Projects that stress expression of the human spirit through language and literature reflect a personal relevance orientation to learning, popularized by humanists such as Carl Rogers and Abraham Maslow.

Projects do not have to be designed for an audience beyond one's fellow students. Quite often learners develop questions as a group, divide the work among individuals or pairs who seek answers to selected questions using a variety of sources, such as the Internet or guest speakers (Rosen, 1998). Although the final product may be not much more than a series of questions and answers compiled in a document to be shared with the group, such projects nevertheless meet some of the criteria for project work: learners work in a group to select topics of interest and decide the direction of their learning; they rely on insights from their peers while providing feedback to others; they may use the teacher as a resource, but by and large, they create their own knowledge.

**Functional Context; Workplace Preparation**

Teachers and students concerned about life skills and the more functional components of literacy may choose projects that help learners meet critical economic needs by assisting them in adapting to new environments or function more effectively in familiar ones. These projects often result in guides and strategies meant to make it easier to navigate systems. Examples include a handbook written by students for new students, a list of tips and hints on how to deal with the admission requirements of a college or training institute, or a description of different ways to fight a an eviction notice or challenge a traffic ticket. As learners conduct research into what it takes to negotiate bureaucracies, they acquire the knowledge and skills associated with functional competence in literacy, while developing strategies for decision making.

As the new federal requirements for TANF (temporary assistance to needy families) take effect, replacing the JOBS program, teachers who need to include a workforce development component in their curriculum see project-based work as a creative way to link learner-centered education with investigations into the world of work. Project work allows learners to work in groups to examine local job opportunities, document the history of work in their communities, or to research the training and education needed for different jobs. As they conduct this research and present it to others, they develop the confidence and knowledge necessary in the job search process. In fact, in a society where companies are looking for employees who have people skills, are able to work in teams, and have the competence to make decisions and solve problems as they arise, project-based learning can serve as a powerful tool to prepare students for the world of work.

**Teacher's Role**

Although the teacher's role is less that of an instructor who transmits information and organizes activities for practice and more that of a guide and a facilitator, it is a critical role, nevertheless. Projects require that teachers get to know their learners' interests. Teachers must listen for what has been called the teachable moment, that point in a discussion when learners become excited about a topic, and start asking questions such as "why is x happening and what can we do about it?"

Facilitating project-based learning requires the kind of leadership skills that allow teachers to help a group of learners to move in the direction that they want to go, pointing out potential pitfalls or making suggestions without getting defensive when students decide they like their own ideas better. It makes a difference if teachers possess a tolerance for ambiguity, some skill in helping learners negotiate conflicts, and enough self-confidence to not give up when a project peters out or refuses to come together.

Not all projects are successful. Some teachers are too inexperienced to guide the process well. They may expect too much ability on the part of the learners to take control of the project without having laid the necessary groundwork or they may fail to let students take the lead when they can. Learners do not necessarily take to project work wholeheartedly, either. Some may feel teachers are abdicating their roles if they do not provide answers, or they may not want to learn with and from their classmates.

Several strategies can facilitate the process. If some learners are resistant, it helps if project participation is voluntary: after a topic has been identified and possibilities discussed, learners should be able to elect to either join the project team or work on their own during the time periods set aside for group work. One or two hours per week seems optimal for project-based learning in non-intensive classes. In cases where both learners and teachers are new to project-based learning, infusing the curriculum with multiple opportunities for group discussion and decision-making can ease the transition. If adult learners decide to take on a project, they need sufficient time to plan, revise, implement and reflect on the project before it is presented to others. Anson Green (personal communication) has suggested that the tasks, time lines, and responsibilities that the group has mapped out be posted prominently on the walls as reminders of the status of a project. Frequent drafts of products help to keep the group focused on the work to be done, while encouraging individuals to shape or edit pieces that need improvement. It helps if funds are allocated so learners can budget for supplies, photocopying, invitations or flyers, and presentation materials. Even if materials are offered in-kind by the program, estimating costs and staying within a budget provides important experience for learners that translates to other contexts.

**Benefits and Skill Gains**

In interviews I have done with teachers involved in successful project-based learning, some themes surface: at the beginning of and the end of projects, learner enthusiasm seems to be increased, revitalizing classes and teachers. Since students have signed on to an issue that interests them, motivation tends to be high. As learners get involved in the inquiry process, they become curious about answers, often digging deeper into a topic and spending more time on task than they do when a teacher assigns group work. A shared work ethic is created. Teachers report that learners frequently encourage each other and lend moral support as they face the frightening prospect of a public presentation. In the end, they come through when a presentation is scheduled, appearing well prepared and on time and communicating their ideas confidently and effectively, despite any nervousness they may feel (Mary Helen Martinez, personal communication).

Others who have also talked with learners report outcomes in various domains, including attitudes, self-efficacy, and "can do"skills (Curtis, 1990; Schwarz, 1997). When asked what project work has meant to them, learners mention a greater awareness of their own abilities to research and report findings; the confidence that comes from being able to map out a project and see it come to fruition; the joy and frustration of working with others; the pride in gaining important knowledge and insights; the enthusiasm generated by mastering new technologies; and, in the case of presentations of a personal nature, the excitement of sharing a story worth telling.

## Limited Research

While numerous research studies have demonstrated the positive effects of similar forms of group learning on academic skills of school-age children and youth (Johnson and Johnson, 1989; Slavin, 1990), no large scale studies have been conducted with learners engaged in project-based learning in adult literacy programs. However, sufficient anecdotal evidence supports the contention that project-based learning fosters the skills named by the Secretary of Labor's Commission on Necessary Skills (SCANS) as those deemed necessary to succeed in high performing workplaces. To fully assess what learners take away from project work, in terms of both group and individual learning, we would need to develop performance-based assessments that capture the knowledge, skills, and strategies that learners attain against some level of standard, developed jointly by teachers, learners, and members of the community. No studies have been done comparing project-based learning in adult education with more conventional models of teaching and learning, so to what extent basic skills as measured by standardized tests or GED completion rates are affected by project-based learning remains an open question.

When the discussion moves to literacy gains, teachers and learners are often concerned that limited time that could be spent on the practice of basic skills is instead taken up with discussions and explorations of issues. Evidence suggests, however, that learners involved in project-based learning often spend significant amounts of time writing down ideas, reading and commenting on what others have written, and shaping the work the group is producing. Teachers report that motivation to edit is significantly higher when learners face a "real audience" made up of folks outside of the adult ed community whose standards are often more rigorous than those of adult literacy teachers. It seems clear, however, that learners who participate in project work do not obtain lower scores on tests than do their classmates who are part of a more conventional approach.

As for math, when learners are engaged in projects that require budgets, they frequently end up spending a great deal of time on calculations and time lines, gaining experience in the kind of practical math used in business and household management. If time-on-task counts, and many basic skills proponents believe it does (Croll and Moses, 1988), we can expect project work to lead to a deeper understanding of what it takes to apply math to real life problems.

Skill gains in second language acquisition, particularly on the intermediate and advance levels, are perhaps the easiest to see (see ESOL box on page ). Every aspect of project-based learning feeds into what Krashen (1985) has called the language acquisition device, the ability of the brain to acquire a second language through meaningful input and expression. We can expect proficiency to increase as the target language is used to investigate and discuss, to gain content knowledge by reading and talking with others, and to share ideas through writing. Engagement and involvement of this sort with another language is likely to result in greater "pragmatic competence," (Krashen) the ability to understand that language varies across contexts and to use language and literacy in socially appropriate ways.

Despite its many benefits, project-based learning in adult literacy should not be an end in itself, given the multiple goals and multiple learning needs of adults. It is perhaps best integrated into a comprehensive curriculum that allows for individual skill development as part of these group initiatives.

## Conclusion

In the end, those of us who subscribe to a constructivist perspective and believe that we create our own knowledge through interaction with others and with texts may see the immediate benefits of project-based learning, while those of us who believe in more structured and direct models of teaching will remain skeptical. We all await research that can capture the many dimensions of learning that project-based learning addresses: gaining meaning from reading authentic materials; writing for an audience; communicating with others outside of the classroom; working as part of a team, and giving voice to one's opinions and ideas, using literacy to affect change. In the meantime, we may have to take the project-based learning on faith and see it as a promising approach that reflects much of what we know about the way adults learn.

## Endnotes

1. For an example of what worked and what did not during different phases of a project, read the evaluation component of the 1997-98 Learning Project Summary by Anson Green. It can be found at http://members.aol.com/CuleraMom/mujer.html

2. For a discussion of the relationship between educational philosophies and instructional practice in adult literacy programs, see Wrigley, H.S. & Guth, G. (1992). *One Size Does Not Fit All.* San Diego: Dominie Press.

3. For an example of such a project, see Shor, I. (1987b).*Monday Morning Fever: Critical Literacy and the Generative Theme of "Work" in Freire for the Classroom*. 104-121. Portsmouth, NH: Heinemann Educational Books, Inc.

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Project-based learning (PBL) is a student-centered pedagogy that involves a dynamic classroom approach in which it is believed that students acquire a deeper knowledge through active exploration of real-world challenges and problems. Students learn about a subject by working for an extended period of time to investigate and respond to a complex question, challenge, or problem. It is a style of active learning and inquiry-based learning. PBL contrasts with paper-based, rote memorization, or teacher-led

PBL makes learning relevant, engaging, and authentic. PBL demands and develops 21st century skills like creativity, collaboration, communication, and critical thinking. Whether you are a first-time PBL teacher, or a seasoned practitioner, it is a great exercise to reflect upon the essential components of a meaningful project. The Buck Institute, a pioneer and thought leader, offers eight essential elements for project based learning. As c0-founder and Chief Learning Officer of CrowdSchool, I constantly use these eight essential elements to pair pedagogy with the development of our web applicat