

Appendix C

To be handed out at
Session One of the Study Circle

Session One Materials

Contents:

- Handout E: “Sample Ground Rules”
- Handout F: “Readings for Session Two”
- Reading #2: “Supporting the Persistence of Adult Basic Education Students”
- For Further Reading (optional):
“Adult Participation Related to Outcomes in Family Literacy Programs”

Sample Ground Rules

The Study Circles Resource Center

- Everyone gets a fair hearing.
- Seek first to understand, then to be understood.
- Share “air time.”
- If you are offended, say so, and say why.
- You can disagree, but don’t personalize it; stick to the issues. No name-calling or stereotyping.
- Speak for yourself, not for others.
- One person speaks at a time.
- What is said in the group stays here, unless everyone agrees to change that.

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Readings for Session Two

This is the list of readings for Session Two of the study circle.
Please bring all the readings to Session Two.

<u>Session Two of the Study Circle</u>	
Date:	_____
Time:	_____
Location:	_____

Reading #2: “Supporting the Persistence of Adult Basic Education Students”

For Further Reading (optional): “Adult Participation Related to Outcomes in Family Literacy Programs”

Reading #2

Supporting the Persistence of Adult Basic Education Students

John Comings and Sandra Cuban

Comings, J. & Cuban, S. (2003). DRAFT – NOT FOR CITATION.

Abstract

Teachers in adult basic education programs hope that their students will persist in learning until they reach their educational goals. However, most students drop out after less than 100 hours of instruction. Unlike children, who persist in learning because of legal mandates and strong social and cultural forces that identify schooling as the proper work of childhood, adults must make an active decision to participate in each learning session and often must overcome significant barriers in order to attend program services. If adult students are to achieve their goals, adult basic education programs must help them persist much longer in their studies.

This chapter describes persistence and reviews the research and practice literature about ways to support it. The chapter also draws on research that the authors have just completed with a team from (MDRC) and the National Center for the Study of Adult Learning and Literacy (NCSALL). The chapter concludes by suggesting that a quality program must have a persistence support component and describing a set of persistence interventions that have research evidence to support the contention that they would have an impact.

Introduction

A key difference in learning between adults and children is that adults choose to participate in educational programs while children participate because of legal mandates and strong social and cultural forces. Adults must make an active decision to participate in each class or tutoring session and often must overcome significant barriers in order to participate in educational services. Although some adults come to adult basic education¹ programs with very limited goals, most come with goals that require hundreds if not thousands of hours of instruction to achieve. Every adult basic education program, therefore, should help its students persist in their learning so that they can reach their educational goals.

Adult basic education programs usually refer to persistence as retention and measure it by recording participation in formal classes or tutoring sessions. Comings, Parella, and Soricone (1999) proposed the term persistence after they found that adults often persist in learning

¹ The term, adult basic education, includes English for speakers of other language, adult literacy, high school equivalence, and basic skills programs for adults.

through self-study or distance education after they stop attending adult education program services and sometimes return to a program (not necessarily the one they dropped out of) after a lapse in attendance. The term retention defines this phenomenon from a program's point of view; the program wants to retain its students. Comings, et al. (1999) preferred the term persistence because it defines this phenomenon from the point of view of students who persist in learning inside and outside of a program until they have achieved their goals. This chapter will define persistence as:

Adults staying in programs for as long as they can, engaging in self-directed study or distance education when they must stop attending program services, and returning to program services as soon as the demands of their lives allow.

Persistence is a continuous learning process that lasts until an adult student meets his or her educational goals.

Research on Persistence

Much of the literature on adult student persistence draws on research with adults who have sufficient literacy skills, speak English, and have high school diplomas. Though this research is informative, it may not be directly applicable to adult basic education students, who have low literacy and math skills, do not speak English, or do not have a high school diploma. In addition, most adult education persistence research takes place in short-term courses with defined, limited goals, such as vocational classes and certificate programs. In contrast, adult basic education students usually face a long-term commitment that may involve many different goals that change over time. Finally, most studies look at participation, the decision to join a program, rather than persistence, the decision to continue in a program. These two decisions are similar, and so the participation literature is useful to understanding persistence. In addition, most studies help define the problem but do not necessarily provide insights into how to help adult basic education students persist in learning.

This chapter will first summarize the findings of four literature reviews and then describe the lessons learned in two connected studies. These sources serve as evidence that supports a set of program interventions set forward in the conclusion. The implications section suggests ways that policy, practice and research could build on this foundation.

Literature Reviews

Four literature reviews analyze the participation, retention, and persistence literature from different perspectives (Beder, 1991; Wikelund, et al., 1992; Tracy-Mumford, 1994; and Quigley, 1997). All of these reviews have authors who have experience with adult basic education

programs, and this experience helps them adapt research on other populations to adult basic education students.

Beder (1991) first explores motivation as the force that helps adults overcome barriers to participation and then focuses more closely on those barriers. Beder suggests that adult education programs must change their recruitment and instruction practices to be congruent with the motivations and life contexts of adult students. If they did, more adults would enter programs, and they would persist longer.

Beder then builds on two studies that look at the barriers to participation from the point of view of actual and potential participants. He notes that Hayes (1988) identified five factors that discourage participation: Low self-confidence, social disapproval by friends and family, negative attitudes towards adult literacy, and low personal priority. He also notes that Beder (1990) identified four factors: low perception of need, perceived effort, dislike for school, and situational barriers. Together, these studies point to perceptions by some adults that they may not benefit from participation, may not be able to learn, do not like participating in formal learning programs, and are unwilling to overcome the many barriers to participation that exist in their lives. Finally, Beder suggests that adults are weighing the perceived benefits and costs of participation and making decisions based on that analysis. In many cases a decision to drop out may be justified if the costs outweigh the benefits.

The Beder review concludes by making suggestions for dealing with nonparticipation and dropout. He opens by acknowledging that the system, at this time, probably only has enough resources to serve those who are eager to enter classes. This position, he notes, does not pay attention to the social costs of an undereducated population and the socialization process that leads many of these adults to be uninterested in further education. Though education can never be easy, this review suggests that the effort could be more manageable for students if programs had the resources to fit instruction to the needs and learning styles of adults and if programs looked less like school and more like an activity in which adults would want to participate.

Wikelund, et al. (1992) draw from the same sources as Beder, but they critique the reductionist tendencies of research and suggest that a useful theory of participation would incorporate the complexity of this phenomenon. The paper calls for broadening the definition of participation to acknowledge that adults engage in education in many ways that are not limited to participation in formal classes.

The Wikelund, et al. review criticizes the concept of “non-participant” because it implies that every adult who has low literacy skills needs to enter a program, a situation that might not be true. After reviewing several of the studies quoted in Beder (1991), the review ends with a later Beder (1992) article that identifies three categories of non-

participants. The first group is the demand population, who are motivated to participate and who have no significant barriers to that participation. The second group is motivated but constrained and includes people who are motivated but who have external barriers, such as a lack of childcare, keeping them from attendance. The third group is resisters who are not motivated to attend.

The review ends with the conclusion that research and theory, as well as practice, should break out of the framework of schooling. A new definition of participation would acknowledge that learning, even improvements in literacy skills, could take place outside of formal programs. With this new definition, programs could increase persistence by continuing to support learning at times when students cannot attend classes or participate in other formal arrangements.

Tracy-Mumford (1994) calls for programs to develop a commitment to and a plan for increasing persistence, which she suggests would send a strong message to students that the program is there to help them reach their goals. Since student goals can change, the program must be willing to make changes to accommodate new goals as they arise. For the commitment to be meaningful, the program should have a set of criteria for measuring persistence and a set of strategies that reduce dropout, increase student hours of attendance, improve achievement, increase personal goal attainment, and improve completion rates.

Tracy-Mumford defines an effective persistence plan as one that both provides support to students and improves instruction. The review summarizes the findings of a large number of studies and descriptions of practice to provide a list of the elements of a student persistence plan that weaves persistence strategies into all aspects of the program structure. This advice is:

- Recruitment should provide enough information so that potential students can make an informed decision about enrolling.
- Intake and orientation should help students understand the program, set realistic expectations, build a working relationship with program staff, and establish learning goals.
- Initial assessment should provide students and teachers with information on both cognitive and affective needs, should be integrated with instruction, and should form the foundation for measuring progress.
- Programs and teachers should recognize student achievement.
- Counseling should identify students at risk of dropping out early.
- Referral services should coordinate with social service agencies to ensure that all students are connected to the support services they need.

- A system for contact and follow up with students who drop out that helps them return to the program and provides information on ways to improve program services.
- Non-instructional activities should help form a bond between the program and its students and their families.
- Program evaluation should involve students in assessing, and offering advice on, each aspect of the program.
- Childcare and transportation assistance should be provided.
- Instruction and instructional staff should be of sufficient quality to support effective learning.
- A student persistence team should coordinate dropout prevention activities, collect data on student persistence, and involve students and teachers in addressing this issue.

Tracy-Mumford's list is comprehensive, and it is useful to program staff because it translates theory into practical advice. Unfortunately, most adult basic education programs lack the funding required to follow all of this advice, but following some of the advice would probably contribute to increased persistence.

Quigley (1997) views persistence as significantly affected by the negative schooling experiences adult students had when they were younger and suggests the need to change programs to be different from those schools. Quigley sees three major constellations of factors that contribute to dropout, which he refers to as situational (influences of the adult's circumstances), institutional (influences of systems), and dispositional (influences of experience). He suggests that situational influences are largely beyond the control of adult education programs, though they receive most of the attention in the literature on dropouts. Institutional factors are areas that practitioners could affect and should work on continuously. However, he suggests that dispositional factors provide a focus for program reform that might affect persistence.

Quigley focuses his attention on adults who drop out in the first few weeks of a program and to the dispositional factors that he believes cause such early dropout. He suggests that adults have overcome situational barriers before they arrive at a program, and though those arrangements may fall apart, they have little effect in the first few weeks. Institutional barriers, too, have been overcome and, if they still exist, will have an effect later as they cause problems that build up over time.

Concluding that at least one-third of incoming students are at risk of dropping out in the first three weeks of instruction, Quigley reports findings from two studies of incoming students he undertook. In these studies, Quigley tried three interventions: intensive support by a team of teachers and counselors, smaller classes, and one-on-one tutoring. The small class approach produced the highest persistence, followed by the

team approach, and then one-on-one tutoring. All three had higher persistence than the comparison group, which attended the regular large class program. This may indicate that one of these three approaches might be supportive for some students while another approach would be supportive of others.

Quigley suggests that the intake and orientation processes in the first three weeks are critical to improving persistence. He suggests that intake should begin with goal setting and planning for success. Students then need to be matched to classes and teachers that can meet their goals and learning needs. Since students are adults, they can take charge of this process, but they may need help in the form of careful questions and the provision of useful information for making these decisions. Quigley concludes by reiterating his belief that the prior history of negative experiences with school is an important factor that needs to be addressed during this critical first three weeks of instruction.

Persistence Study

In 1996, the National Center for the Study of Adult Learning and Literacy (NCSALL) began a three-phase study of the factors that support and inhibit persistence. The first phase interviewed and tracked the persistence of 150 adults in Pre-GED classes (Comings, Parella, and Soricone, 1999). The Second phase studied the efforts of five library literacy programs as they attempted to increase student persistence over a three-year period (Comings, et al., 2004). The third phase will undertake an experiment to test whether a model of persistence support developed during the first two phases does, in fact, have an impact on persistence in programs. This section summarizes what has been learned in the first two phases of this research.

First Phase. The first phase of the study employed a force-field analysis, which places an individual in a field of forces that are supporting or inhibiting action along a particular path (Gilbert, Fisk, & Lindzey, 1998; Lewin, 1999), as its theoretical model. This model expands the motivation/barriers and cost/benefit models to include a large number of forces on each side of the persistence equation. Understanding the forces, identifying which are strongest, and deciding which are most amenable to manipulation provides an indication of how to help someone move in a desired direction, such as reaching an educational goal.

In the case of adult students, positive forces, such as the desire for a higher income, help support persistence in an adult education program. Negative forces, such as a lack of free time to study, push adults to drop out. From the time adults enter programs to the time when they either achieve their goals or drop out, both positive and negative forces are acting on them. When adult students are passive, the forces push them in one direction, which might be away from their goal. If adult students were aware of the forces, they could take action to manage them so that these forces helped to propel them toward their goal. Any intervention by an

adult basic education program meant to increase persistence must help adults strengthen the positive forces and lessen the negative forces.

The terms positive and negative do not indicate a value for individual forces; they indicate the direction towards or away from the student's goal. Positive forces are those that are supportive of persistence, while negative forces are those pushing an adult toward dropping out. The individual forces may be viewed differently or even as benign outside of this context. For example, the demands of parenthood may be a negative force working against persistence in a literacy program, but parenthood and its demands are, for most people, positive experiences.

The force-field analysis looks at barriers and supports as existing at many levels of importance, from those that have a weak influence on persistence to those that have a strong influence on persistence. The force-field analysis suggests that strengthening or weakening a force that can be influenced might offset the effects of another force that cannot be influenced. Thus, an adult with a strong need for education to gain better employment might overcome a transportation barrier, while transportation assistance might help a less strongly motivated student to persist in an adult basic education program.

This study found that the many ways in which we can classify adult students (by gender, ethnicity, employment status, number of children, and educational background of parents or guardians) do not have a strong influence on persistence. The study does suggest that immigrants, those over the age of 30, and parents of teenage or grown children are more likely to persist than others in the study. The greater likelihood of persistence by immigrant students in ESOL classes is well documented (Young et al., 1994a), and the findings of this study suggest that this effect continues as immigrants learn English and move on to pre-GED programs. Grown children might encourage their parents to join and persist in a program. On the other hand, adults who are over 30 are more likely to have teenage or grown children than those under 30. These findings might point to older students persisting longer because they benefit from the maturity that comes with age, and they no longer have the responsibilities of caring for small children.

The study found that previous school experience (among U.S.-schooled students) does not appear to be associated with persistence. Of course, those potential students who are significantly affected by negative school experience may never enter a program or may have dropped out before the research team arrived. However, many of the study's subjects did describe negative school experiences, with most of the comments centered on high school. Respondents reported being ridiculed and even struck by teachers, bullied or intimidated by other students, told that they were stupid, and asked to leave school by administrators. Issues of class, race, and sexual orientation contributed to the negative school experience for some. Entering an adult basic education program may signal that a

student has overcome any negative school experience and is ready to restart his or her education.

Prior non-school learning experiences, particularly self-study focused on improving basic skills or studying for the GED may be related to persistence. Prior attempts at self-study may be an indication of strong motivation, or some people may need several attempts at learning before they are ready to persist. Research that explores these attempts might uncover factors that lead to later persistence or to permanent non-participation. Another line of inquiry might look at making self-study outside of class a part of instruction so that adult dropouts are ready to continue their learning when they do leave class. This self-study might make a return to classes more likely and the development of ways to document that self-study could provide a more realistic account of persistence.

Students mentioned four types of positive forces: relationships, goals, teacher and students, and self-determination. Relationships incorporate the support noted by subjects derived from their families, friends or colleagues, God or their church community, support groups, community workers, mentors or bosses, and their children. Goals included helping one's children, getting a better job, bettering one's self, moving ahead in life, attending college or some other academic goal, proving someone wrong, or obtaining citizenship. Teacher and students indicated the support provided by the people involved in their class. Self-determination included comments such as "it's me," "myself," or "my determination."

Students mentioned three types of negative forces: life demands, relationships, and poor self-determination. Life demands comprised conditions at home, special child care needs, work demands, transportation, the student's own or his or her family's health, age, lack of time, fatigue, weather, welfare and other official rules, unfavorable conditions at home, moving, and lack of income. Relationships included family members, friends, colleagues, community or welfare workers, and religious beliefs that were not supportive to persistence, as well as fears about letting other people down by failing in a program. Poor self-determination included comments such as "thinking negative thoughts," "my own laziness," and statements indicating a lack of confidence in their ability to succeed.

How adults describe the positive and negative forces that affect them did not predict persistence, but this information is still valuable in that it gives practitioners input from adult students on what might be important. Adults in this study had much more to say about positive forces than about negative forces. Adding this information to the finding that negative school experience was not associated with persistence points to a conclusion that building positive supports may be more critical to increasing persistence than is the removal of barriers. If this is so, then

understanding which positive forces are most important is essential to a model that supports persistence.

The study team summarized its findings as advice that suggested four supports to persistence:

- *The first support to persistence is the establishment of a goal by the student.* The process of goal development begins before an adult enters a program. An adult who could be classified as a potential ABE student experiences an event in his or her life that causes him or her to enter an educational program. That event might be something dramatic; for example, a well-paid worker might lose his or her job and find that he or she does not have the basic skills needed to qualify for a new job at a similar pay scale. That event might be less dramatic; for example, a parent may decide he or she needs more education when a first child begins school. That event might be subtle; for example, a school dropout might have always felt the desire to study for the GED but when his or her children are older and need less attention, there is finally some free time available for education. This event provides potential adult students with goals they hope to accomplish by entering an ABE program. The staff of the educational program should help the potential adult student articulate his or her goal and understand the many instructional objectives that must be accomplished on the road to meeting that goal. Teachers should then use those student goals as the context for instruction. This effort must continue as instruction proceeds because goals may change.
- *The second support is self-efficacy.* The self-determination mentioned by students must build on a foundation of self-efficacy, a feeling that they can reach their goals. The term self-confidence is quite often used in adult education literature, but self-efficacy has a different definition. Self-confidence is a global feeling of being able to accomplish most tasks. Self-efficacy is focused on a specific set of tasks and represents the feeling of being able to accomplish that set of tasks.
- *The third support is management of the positive and negative forces that help and hinder persistence.* Programs should help students develop an understanding of the negative and positive forces that affect their persistence. Building on that understanding, each student could make plans to manage these forces so that persistence is more likely. The plans that come out of such an exercise should include strategies for persistence when the forces that affect peoples' lives cause them to drop out. These plans must be revised as adults persist in their studies and these forces change.

- *The fourth support is progress toward reaching a goal.* If the goal is important, then adult students must make progress toward reaching that goal, and they must be able to measure that progress. Programs should provide services of sufficient quality that students make progress, and programs need assessment procedures that allow students to measure their own progress.

Phase 2. The second phase of the project observed ten library literacy programs in California, New York, and North Carolina that were attempting to increase student persistence and interviewed thirty of their students in depth about their history of participation and supports and barriers to persistence. The study found that the persistence of most students was affected by factors that were personal (related to the student) or environmental (related to the student's life situation). Adult basic education programs do not have the resources to address these personal and environmental factors. This study identified five pathways for program participation that are determined by these personal and environmental factors and ways that programs might support students on each pathway. The five pathways are: Long-term, Mandatory, Short-term, Try-out, and Intermittent.

Long-term students participate regularly over a long period. Long-term students usually do not express specific goals, but, rather, talk of education as an end in itself. Long-term students have managed the personal and environmental factors that support and inhibit their persistence. Presumably, they will persist in a program that is helping them meet their needs, is convenient for them, and that provides an enjoyable experience. In fact, this is the story told to the study team by long-term students. Most long-term students viewed their program as a comfortable and supportive community and talked about it as a family, a club, or a home base for learning. They referred to the program staff as friends or family members. Long-term students expressed a strong personal commitment to their programs and to their goal of becoming more educated.

Most of the long-term students identified through interviews were over the age of 30. Adults over the age of 30 may no longer have childcare responsibilities and may have a stable income, housing situation, and set of relationships, while the younger students may not have reached this stage of life. The long-term persistence of older students may appear to be supported by their emotional maturity, but, in fact, it may be supported by stable personal and environmental factors related to children, partners, and employment.

For students who are able to travel the long-term pathway, an intake and orientation process that clearly sets out steps, with measurable objectives, along the path to reaching their, often ambitious, goals might help support their persistence. This study found that improving formal instruction (classes and tutoring) and offering many different types of informal instruction appeared to increase hours of instruction for these

students. The students on the other four pathways may need changes in program design, and even in the definition of persistence, in addition to these programmatic improvements.

Mandatory students must attend a program because they are required to do so by a public assistance or law enforcement agency. Their participation is usually regular and long term, and their goals are often those of the agency that is mandating their attendance. They look like long-term students while they are under the requirement to participate but usually leave abruptly once attendance is no longer mandatory and sometimes even while it still is a requirement.

Mandatory students overcome personal and environmental factors that constrain their persistence because they are required to do so. Since, factors outside the program support their participation, programmatic improvements may not help these students to stay longer. However, if the program changes its services (making them more convenient, more useful, or more enjoyable), mandatory students might choose to participate for more hours. Counseling, during intake and orientation and throughout instruction that focuses on helping mandatory students commit to learning as a way to improve their lives, understand how they learn best, find ways to enjoy learning, and build a support system to sustain their learning might help mandatory students persist after the mandate has ended. Additional hours of participation and persistence after legal mandates for participation have ended are probably good measures of impact for innovations meant to address the needs of mandatory students.

For students who are on the mandatory pathway, program intake and orientation must help students move past the required goals of attendance and begin to see learning as something they choose to do. This building of motivation probably requires goals that are personal and an instructional process that helps students see that they can learn and that learning can be enjoyable. Literacy learning focused on family, work, personal interests, or even the problems that led to their legal or social service status might be a focus of instruction that supports persistence for adults on this pathway. An instructional process that involves discussions among a group of adults might provide a social network that supports persistence for mandatory students, and referral to support services (such as counseling, daycare, and employment) might be necessary for these students to persist, even while they are under a mandate.

Short-term students enroll in a program and participate intensively for a short period in order to accomplish a specific goal. For some of these students, the short-term participation in a library literacy program meets their needs, but for some this participation leads to enrolment in a more suitable program. Though students on a short-term pathway may leave their programs after only a few weeks of instruction, some may persist in another program that more closely meets their needs. Since personal goals determine their length of participation,

programmatic innovations may have little impact on the persistence of students on a short-term pathway. Transition into another program and accomplishment of a specific, limited goal are probably good measures of the impact of innovations meant to address the needs of short-term students.

For students who are on the short-term pathway, programs should be careful during intake and orientation to identify their specific goal. When transfer to another program is appropriate for reaching that goal, the program might be able to provide some learning opportunities that prepare these students to be successful in a more appropriate program. When new students have a specific goal, programs should try to focus on it, possibly with an individual tutor, or make that goal the focus of their instruction in a more general learning environment.

Try-out students have barriers to persistence that are insurmountable and have goals that are not yet clear enough to sustain their motivation. These students end an episode of program participation quickly with neither goal achievement nor transfer to another program. Students on the try-out pathway are motivated to learn, and their decision to join program services is a positive step. However, they are not ready to be successful.

Program staff members believe that every new student can succeed and are usually opposed to counseling students to defer participation. However, admitting students who are likely to fail, particularly since most of these students have failed in education before, is probably not helpful to the student. Students on the try-out pathway who leave a program with a plan on how to address the personal and environmental barriers constraining their participation so that they can return at sometime in the future is probably a good measure of impact for innovations meant to address the needs of try-out students.

Helping try-out students during intake could improve program persistence rates by both lowering the number of students who drop out after very little participation and by providing more program resources to students who are on a different pathway. To do this, programs would have to design intake processes that identify try-out students, counsel them to delay entry, and help them design a program that would lead to successful participation some time in the future.

Intermittent students move in and out of program services. During the time that they are not attending program services, intermittent students may stay in contact with their programs, and their episodes of participation and nonparticipation may reoccur several times and take place in more than one program. Belzer (1998) found that students identified as dropouts in adult education programs often see themselves as still connected but temporarily unable to attend.

These students may have broad goals (such as improving language or basic skills ability) or specific (such as passing a citizenship

test), but their goals require a long period of engagement to achieve. However, personal and environmental factors are limiting their ability to attend on a regular basis. Programmatic changes probably cannot have an impact on the persistence of these students unless program services change to fit a pattern of episodes of participation over a long period.

These program changes would redefine participation as connection to the program rather than hours of attendance in program services. This connection would have to be meaningful, not just a name in a database. An example of a meaningful connection could be monthly discussions between a program staff member and a student in which they review progress on a self-study plan. Programs would define any form of learning activity that serves the goals of the program and the student as participation. These activities would include classroom instruction or tutoring but might also include guided self-study at home or at the program venue. Length of continuous connection to the program and cumulative hours of engagement in learning might be good measures of impact for innovations meant to address the needs of intermittent students.

The intermittent pathway may be the only one open to most students. Personal and environmental factors are always going to present barriers to long-term persistence, and most students have goals that require a good deal of study to achieve. Programs should accept this reality and look at ways to redesign their services to provide connected episodes of participation that use a multiplicity of learning resources. Program staff also need ways to help students maintain contact with the program and to continue to think of themselves as students.

These five pathways provide a way to think about the kinds of program changes that might be useful to different types of students. However, any one student might begin a program on one pathway and change to another. In addition, these pathways might be arbitrary points on a continuum. These pathways, therefore, are guidelines that can help programs broaden the ways they help students persist rather than student types that could allow programs to identify the specific needs of an individual student. Program staff knows that a single pathway will not work for all students, but they do not have the resources to provide an individual pathway for each student. Programs can provide five pathways and help students identify which is the path to success for them.

Conclusions

The literature reviews defined persistence as supported by motivation and constrained by barriers. The NCSALL persistence study broadened this equation to include a wide range of supports and barriers, but it also identified the limits on how much programs could do to address the barriers that students bring to programs. Programs can make their services more convenient, enjoyable, and useful, but they do not have sufficient resources to directly address the personal and environmental factors that

constrain persistence. Even with this limitation, programs should be able to help students persist in learning.

The reviews and the NCSALL persistence study offer suggestions on how programs could help students address their barriers to persistence, even with limited resources. All of these suggestions depend on some form of counseling, which could be formal or informal and individual or in a group. This counseling should help students identify the supports and barriers to their persistence and seek help from local social service agencies, as well as from friends and family.

The reviews and the research also suggest that the schooling model, in which students and teachers meet in one place at scheduled times to pursue a single curriculum, is not sufficient. Programs must offer a range of learning opportunities and help students manage their learning experiences in a way that builds on what they have learned before and moves them toward achievement of a personal goal. The first step in this process is acknowledging that students follow at least five different pathways through program services.

Once this is acknowledged, funding agencies would have to change their accountability standards to allow five different positive outcomes. Practitioners would then feel supported to develop and implement services that helped adults reach those outcomes. The second phase of the NCSALL study makes suggestions for three chronological phases of program participation: Entrance into Services, Participation in Services, and Reengagement in Learning.

Entrance into Services includes recruitment, intake and orientation. This is the time when programs prepare students to be successful in learning. Rather than trying to identify a student's pathway when he or she enters a program, program staff might just assume that all students are intermittent. That is, that students are prepared to participate in an episode of learning that, if it is short, might lead to additional episodes of learning that continue until they reach their goal.

The first step in this process might be to help students express a clear goal or a limited set of goals that represent their motivation for participation. The second step would be to develop a learning plan that includes both instruction and the support services a student needs to persist in learning to reach those goals. For try-out students, this process would lead to their postponement of participation, but they would leave the program with a plan on how to prepare to enter services later. The program would identify this student as successful, since the program provided the student with the best possible outcome. For other students, intake and orientation would lead to a plan for participation in the program. That plan should assume that students would engage in episodes of participation that lead to accomplishment of a specific goal, transfer to another program, or departure from the program followed by another

episode of participation. Of course, students on a long-term pathway may only have a single long episode of participation.

Participation in Program Services includes both instruction and support services. General improvements in instruction and expansion of support services probably help support learning and persistence, but most students need more than just good services. They need instruction that fits their patterns of participation and support services that help them address their particular persistence needs.

A multiplicity of instructional modes (such as classes, tutoring, peer learning groups, technology, and print and media materials) provides students with ways to participate that do not always demand adherence to a regular schedule. However, these different modes would be more effective if they fit into a plan that is followed by both the student and the tutor or teacher. Helping students and instructional staff follow a plan that uses several modes of instruction and that builds toward the attainment of specific goals is not easy. This chapter can only point out this problem, not provide a solution.

The individual plan would allow a student, who must stop instruction, to continue learning (either at home or at the library) through self-study. When that student is ready to return to regular attendance, any tutor or teacher should be able to look at how far the student has been able to progress on his or her plan and start instruction there. Program services should include regular counseling that helps students meet their own needs for support services and identify the times when they will not be able to meet the instructional schedule and so begin the self-study part of their plan.

Reengagement in Learning. Most students do not tell their program or tutor that they are stopping participation. Most just stop attending. Interviews with students uncovered that many of them believe that once they stop attending they cannot return (Comings, et al. 2003). Programs should have a procedure for staying in contact with students who are not attending and for reengaging them in services, and this procedure should be explained during orientation. Former or even current students might be the best people to play this role, since they have addressed the same personal and environmental factors as the students who have dropped out. These new procedures require resources that are now being used to support instruction. However, if these procedures were successful, program services would improve as students who have had a single episode of instruction return to continue learning.

Building on this Foundation. The literature reviewed in this chapter sets out a course for programs to support the persistence of their students. Though the course set out here is based on empirical studies, no research has tested whether or not this advice would have an impact on persistence and help more students reach their learning goals. Further study into the nature of persistence and the forces that support and inhibit

it would add valuable knowledge, now may be the time to test program models that incorporate the existing research. If these models prove to be sound, practitioners and policy makers could feel comfortable following this advice and further research could begin to build on this foundation.

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For Further Reading*

Adult Participation Related to Outcomes in Family Literacy Programs, Summary of Findings and Implications for Practice

Cathy Kassab, Eunice Askov, Drucilla Weirauch, Elisabeth L. Grinder, and Barbara Van Horn

Kassab, C., Askov, E., Weirauch, D., Grinder, E.L., Van Horn, B. (2204). Adult participation related to outcomes in family literacy programs, summary of findings and implications for practice. *Family Literacy Forum*, 3(1), 23-29.

Analyses of the statewide evaluation data indicate that adult learners who accumulate between 50 and 99 hours of adult education within a single 12-month period perform better on the TABE reading, while at least 75 hours are needed in order to perform better on the TABE mathematics post-test. A minimum of 50 hours of adult education instruction appears to be needed for ESL participants, particularly for those who are continuing their participation into the next program year.

Continuing ABE participants who finish their program in a shorter period of time perform better on the TABE post-tests, controlling for initial reading and mathematics scores (pre-tests) on the TABE. Furthermore, ABE women who stay in the program for long periods of time without exiting (or moving to adult secondary education programs) do not make the same progress as ABE women who are able to concentrate their participation. However, the effect of duration in the program was different for continuing women who were developing their English literacy skills. Women who were working on their English literacy skills and were in the program for longer periods of time did better on the BEST post-test than women who were not in the program for as long. This finding suggests that English language learners require a longer duration in the instructional program than native speakers. Nevertheless, intensity of participation is also needed for these adults.

Finally, hours of parenting education were not related to TABE post-test scores, and they were negatively related to BEST Literacy Skills post-test scores among continuing ESL participants. If parenting

* Both articles that comprise the Further Reading are excerpted from a document titled "Research from the Goodling Institute for Research in Family Literacy." For more information, contact:

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education classes reinforced what was learned in ESL classes, then one would expect parenting education to be positively related to adult literacy skills as measured by the BEST. Results obtained in this study may have been influenced by intensity of participation in parenting education relative to ESL instruction and by whether parenting education was conducted in English or the student's native language.

This research has practical implications for policymakers, administrators and teachers. While research is needed to confirm these results in programs outside Pennsylvania and in stand-alone adult education programs, one implication is clear. Programs must be designed and funded with consideration for factors that influence intensity of participation, not merely persistence of participation. Priority in funding could be given to programs that offer increased hours of instruction per week. Policy could also expand the definition of teaching to include the structuring, supervising, and debriefing involved with out-of-class instructional and practice time.

Administrators and teachers may want to think about participation of adults in adult and family literacy programs in a way that considers the factors that affect the intensity of participation in the local family literacy program. Intensity might be increased by augmenting classroom time with learning outside class. These opportunities outside of class time could include teacher-prepared guided study using print materials, computer materials, or Internet-based distance education. By using email available in libraries, students can correspond with the teacher and other class members in a project such as planning a family fun night. Additionally, students can engage in various self-study projects that use literacy skills, such as finding new recipes and learning how to cook nutritious meals. They also can keep a daily journal, which may or may not be submitted to the teacher, to record their thoughts and experiences. As a structured out-of-class activity, parents can participate in book reading and other literacy activities with their children on a daily basis at home. These practical suggestions employ literacy skills and can expand the intensity participation.

Duration of the participation, in addition to intensity, is important to non-native speakers of English as they need time to practice their emerging English skills. They, too, can benefit from engaging in learning opportunities outside the adult education class. For example, they can practice speaking English in a variety of settings including shopping, trips to the doctor, and meetings with their children's teachers or caregivers. If these opportunities are planned in the classroom so that students intentionally practice the literacy and language skills being taught, then student participation is enhanced. Moreover, debriefing after an independent self-study activity is an important opportunity for the teacher to supply corrective feedback and encourage further development.

The goal of achievement as a result of participation is one shared by all constituencies – policymakers, administrators, teachers, and

program participants. Greater awareness of the importance of intensity of participation and provision for it can contribute to attainment of this goal.

Data from Pennsylvania's statewide evaluation of family literacy programs were used to assess the effect of participant and family characteristics on duration and intensity of participation in family literacy programs. Duration was defined from two different perspectives – hours of participation in the different components of family literacy programs (adult education, parenting education, and interactive literacy) and time in the program. Intensity of participation was limited to the adult education component. The concept was approached from two perspectives as well – whether adults participated in at least 50 hours of adult education during the most recent program year and overall intensity of participation since entry (average hours per week). Analyses were limited to women in single-parent or dual-parent households who had participated in at least the 2001-2002 program year and had exited the program. Major findings are discussed below.

Results indicated that being employed hinders participation.

Employed participants had fewer hours of instruction and participated with less intensity in the adult education component than unemployed participants. Employment status was not related to time in the program. Being a single-head of a household also appears to hinder participation. At the same time, women with a greater number of actively participating children participated for a shorter period of time and with less intensity. These results indicate that greater efforts are needed to increase the duration and intensity of participation for groups with competing demands, such as those who are employed or single parents. The importance of the adult education component for a mother's ability to improve the quality of life for her children may need to be highlighted for women with a greater number of children.

Women in ESL programs participated to a greater extent in family literacy programs than non-ESL students. Duration, particularly in the adult education component, and intensity of participation in adult education was greater for ESL participants. Women who lived in larger communities participated to a greater extent in the adult education component, both in terms of number of hours and intensity. Also, as age increased, participants were more likely to participate intensely during the most recent program year, and to a greater extent in the family literacy program, particularly in the interactive literacy component.

Caucasian women were more likely to participate in parenting education and interactive literacy while African-American women were less likely to participate in these two components. These results could be due to programs with large percentages of non-Caucasian participants offering fewer hours of parenting education and interactive literacy. Conversely, it could also indicate that these two components are overly oriented towards Anglo models of parenting.

Women in Pennsylvania's Family Literacy Programs: Effect of Participant Characteristics on Extent of Participation, Summary of Findings and Implications for Practice

Eunice Askov, Cathy Kassab, Drucilla Weirauch, Barbara Van Horn

Askov, E., Kassab, C., Weirauch, D., & Van Horn, B. (2004, April). *Women in Pennsylvania's family literacy programs: Effect of participant characteristics on extent of participation, summary of findings and implications for practice*. Presentation at the American Educational Research Association, San Diego, CA.

The relationship between achievement and participation in adult education and family literacy programs is an area of growing concern due to the increased emphasis by policymakers on outcomes associated with participation. In particular, there is an increasing emphasis at the federal level especially on documenting quantifiable outcomes (especially from standardized tests) associated with participation in these programs. In Pennsylvania (PA), for instance, adult education and family literacy programs are expected to demonstrate an average of a 34 point gain on the Tests of Adult Basic Education (TABE) reading, a 41 point gain on the TABE total mathematics, and a 10 point gain on the Basic English Skills Test (BEST) Literacy Skills section across their enrolled adults. On average, adults enrolled in family literacy programs are expected to participate in at least 50 hours of adult education instruction (Pennsylvania Department of Education 2003). Programs are, in fact, now being increasingly held to this standard and may face funding cuts if they consistently fail to meet the established standards.

However, it is not clear from prior research how participation in adult education instruction and achievement are related. The purpose of this research is to examine the relationship between participation in adult education instruction and outcomes on standardized assessment instruments, specifically the TABE and BEST. However, participation can be measured in several ways. The following section discusses participation in adult education programs to determine which participation variable is most closely associated with the impact on adult achievement scores.

In a recent study of adult learners, Comings, Parrella, and Soricone (1999) researched the positive and negative forces that contribute to persistence, defining persistence as:

Adults staying in programs for as long as they can, engaging in self-directed study when they must drop out of their programs, and returning to programs as soon as the demands of their lives allow. (p. 3)

This important report provided a comprehensive view of past research on persistence and retention and provided information about prior studies that investigated the relationship between persistence and achievement.

Two studies in the 1980s determined that for a student to increase one grade level equivalent on a standardized test, approximately 100 hours of instruction are required (Darkenwald, 1986; Sticht, 1982). And, while it seems logical that there is a relationship between length of time in a program and achievement, more recent studies have shown that this is not so. The National Evaluation of Adult Education Programs (NEAEP) by Young, Fleischman, Fitzgerald, & Morgan (1994), found no direct relationship between persistence and scores on the TABE for adult basic education (ABE) students. However, the study did find a relationship between persistence and results on the *California Adult Screening Assessment System (CASAS)* for English as a Second Language (ESL) students. Comings (1995) found a relationship between persistence and achievement in literacy programs in Third World countries, but these results cannot necessarily be extrapolated to the United States. Perin and Greenberg (1993) found a positive relationship between weeks of instruction and scores on mathematics and writing tests, but not on reading tests. The subjects, however, were not ABE students; instead they had achieved either a high school diploma or GED certificate.

The persistence study among ABE Students in pre-GED Classes (Comings, et. al., 1999) was developed based on previous research related to retention and persistence, including studies by Quigley (1997), Tracy-Mumford (1994), Wiklund, Reder, & Hart-Landsberg (1992), and Beder (1991) whose comprehensive review of literature on participation resulted in seven models of motivation. The methodology used by Comings, et al. (1999) consisted of interviews with 150 adult learners in 19 pre-GED classes located in 15 ABE programs in five New England states. The interviews revealed four supports that relate to persistence:

- Management of the positive and negative forces that help and hinder persistence
- Self-efficacy
- Establishing a goal
- Progress toward that goal

Similar to the work described above, a series of focus groups was conducted as part of the 1999–2000 Pennsylvania (PA) Statewide Evaluation of Family Literacy programs in order to identify aspects of instructional settings and programs that parents deemed beneficial to their growth. The focus groups were drawn from a range of program types (urban/rural, native speakers/ESL, teen parents/adults) in various parts of the state (Weirauch, 2001). Parents in all groups indicated that the principal reasons they stayed in the programs were the support they received from teachers, the program, and the other parents. A sense of community seemed to be a contributing factor to retention. In 2002-2003, as part of a continuous program improvement initiative, one site, using parent interviews and the force-field analysis model (Lewin, 1999), identified the forces that keep the families participating, naming these

same factors as central to their retention. Clearly, these positive forces, which have been called “The Fifth Component” (Alamprese, 2001), should be better understood and exploited to maximize participation in family literacy programs.

The Comings, et al. (1999) study focused on the concept of persistence of participation, as defined above. The study reported here, although similar, considers not only how long adults stay in a program or engage in self-directed study, but also the *intensity* of their participation. It also considers the number of hours adults engage in the program, similar to studies in adult education by Darkenwald (1986) and Sticht (1982). However, this study considers adult education in the family literacy context rather than solely as an adult educational program.

To further assess the impact of participation on outcomes in adult education, the following study was undertaken by the Goodling Institute using the database developed by the Pennsylvania Statewide Evaluation of Family Literacy.

Statewide Evaluation of PA Family Literacy Programs

Penn State’s Institute for the Study of Adult Literacy, with which the Goodling Institute for Research in Family Literacy at Penn State is affiliated, has conducted statewide evaluations of family literacy programs since 1998. Pennsylvania’s family literacy program is extensive with both federal and state funded programs in all 67 counties. During the 2001-02 program year, PA’s 74 family literacy programs registered over 3,200 families. PA’s family literacy programs did recruit those “most in need”; families participated fully in the family literacy programs and gained access to needed support services. Although previous national evaluations of family literacy programs have yielded mixed results (e.g. St. Pierre, et al. 2003), PA’s statewide evaluations of family literacy programs have revealed positive results (Van Horn, Kassab, & Grinder, 2000, 2002).

A possible contributing factor to the positive results found in PA is the state’s comprehensive, integrated accountability system for family literacy. The Institute, working closely with the PA Department of Education, has led in the effort to establish performance standards and indicators of program quality for PA family literacy programs as well as to assist in developing a local program improvement process that encourages programs to identify and address areas of concern within the four components (Van Horn, 2000; Weirauch, Grinder, Orndorf, & Van Horn 2002).

The establishment of the statewide database has provided the opportunity for additional analyses supported by the Goodling Institute. This article reports on a study of participation of women students and its effect on adult achievement outcomes in family literacy programs. (Male students in family literacy programs were excluded from this study since they represent only about seven percent of the database.) Analyses are

limited to outcomes on standardized tests, that being the TABE reading, TABE mathematics, and BEST Literacy Skills. Qualitative outcomes are also important, but are beyond the scope of this study.

Research Questions

This research addressed the following four research questions. First, does the number of hours of instruction in adult education influence adult literacy skills assessment scores, as measured by the TABE reading, TABE mathematics, and BEST Literacy Skills instruments? This first research question addresses persistence in participation. To examine this question, the number of hours of adult education instruction each woman participated in since the 1998-1999 program year was calculated.

Our second research question asks whether the length of time participating in the family literacy program influences adult literacy skills assessment scores? Duration of participation is thus our second measure of persistence.

Third, does the intensity of participation influence scores? To measure intensity of instruction, a series of variables was constructed that indicated whether women participated in a minimum number of hours during the most recent program year in the database (2001-2002). Specifically, one dummy variable indicated whether women participated in a minimum of 50 hours of adult education instruction, but no more than 74 hours during the 2001-2002 program year. (A dummy variable indicates whether or not a person participated for the specified number of hours). Another dummy variable indicated that women participated in 75 to 99 hours of adult education during the 2001-2002 program year, and a third dummy variable indicated whether women participated in a minimum of 100 hours during the 2001-2002 program year. A fourth dummy variable indicated whether women participated in 50 or more hours of adult education instruction during the 2001-2002 program year. This variable was used when the first three dummy variables were statistically significant and had similar effects. Dummy variables were used because of the significance in Pennsylvania of achieving at least 50 hours of adult education instruction, and prior research indicating the importance of 100 hours of instruction (Darkenwald, 1986; Pennsylvania Department of Education 2003; Sticht, 1982). Also, prior pilot research using the statewide database supported the selection of these cut-offs.

Finally, the fourth research question focuses on whether participation in parenting education influences adult literacy skills assessment score. If one assumes that what is taught in parenting education reinforces what is learned in adult education classes (i.e., literacy skills are practiced), then participation in parenting education might impact adult literacy skills assessment scores. (Although the content of parenting education is not expected to affect adult literacy skills assessment scores, practicing and applying literacy skills during this component may produce a positive effect.) To examine this question, the

number of hours of parenting education instruction each woman participated in since the 1998-1999 program year was calculated.

Methods

Data collected from adult females who participated in Pennsylvania's family literacy programs between July 1, 2001 and June 30, 2002 (2001-2002 program year or PY) were analyzed in order to assess the impact of participating in family literacy programs on adult literacy skills assessment scores using the TABE reading, TABE mathematics, and BEST Literacy Skills. Data from all family literacy programs in Pennsylvania who had participants meeting the selection criteria, as described below, were used in the analyses.

Data on hours of participation during prior program years were incorporated into analyses for women who entered the family literacy program prior to the 2001-2002 program year. (Women who entered the family literacy program prior to the 1998-1999 program year were excluded from analyses because the earliest date that data on hours of participation were available was July 1, 1998.) In particular, the focus was on the influence of persistence and intensity of participation in adult education on TABE reading and mathematics scores for ABE students and BEST Literacy Skills scores for ESL students. Persistence was defined in two ways: (1) amount of participation in adult education (i.e., total number of adult education hours), and (2) duration in the family literacy program. In addition, the influence of participation in parenting education on adult education test scores was assessed.

Analyses were limited to ABE and ESL women who participated in some adult education and parenting education during the 2001-2002 program year, and who were not missing data on any of the other variables included in the analyses. Only those women who were the single head of household or were the spouse/partner in a two-headed household were included in these analyses.

Two sets of analyses were conducted: one set of analyses was conducted with women who exited the program during the 2001-2002 program year. A separate set of analyses was conducted with women who continued their participation into the next program year; that is, an exit date was not indicated. These two independent samples provide an opportunity to verify results that are similar in the two samples, and to critically examine those results that differ. The opportunity to replicate results in two independent samples allows one to place greater confidence in results that are consistent across samples.

TABE reading data were available for 137 ABE women from 32 family literacy programs who exited during the program year and 108 ABE women from 32 programs who continued into the next program year. TABE mathematics data were available for 98 ABE women from 29 family literacy programs who exited during the program year and 103 ABE women from 28 programs who continued into the next program

year. BEST Literacy Skills data were available for 47 ESL women from 9 programs who exited during the program year, and 115 ESL women from 11 programs who continued their participation into the next program year. Due to using data from multiple sites across the state, it is impossible to describe the curriculum used in the adult education or parenting education components.

The dependent variable in the analyses was posttest score; standardized scores were used. Included as a control variable in all analyses was the pretest score on the test (TABE reading, mathematics, or BEST Literacy Skills) administered at some point during the program year. Separate analyses were conducted for the TABE total reading, TABE total mathematics, and BEST Literacy Skills scores for both women who had exited the program during the 2001-2002 program year and for women who were continuing their participation into the next program year. The following variables were included in the models:

- Amount of participation in adult education, as measured by total number of hours in adult education since the 1998-1999 program year;
- Duration in the program, as measured by number of days in the family literacy program;
- Intensity of participation, as measured by three dummy variables indicating whether the student participated in 50 to 74 hours, 75 to 99 hours, or 100 or more hours of adult education during the most recent program year (2001-2002); or alternatively by one dummy variable indicating that the student participated in 50 or more hours of adult education during the most recent program year; and
- Amount of participation in parenting education, as measured by total number of hours of participation in parenting education since the 1998-1999 program year.

Multilevel modeling, using the Hierarchical Linear Modeling (HLM) software, was used to conduct the statistical analyses. Multilevel modeling is a sophisticated statistical technique used when participants are in groups, as in this case, adult education classes in family literacy programs. Participants who attend the same program are exposed to similar instructional settings, and may be similar in levels of participation or test scores. This violates a major assumption of most statistical procedures, which is that the participants in the study are independent of each other. Multilevel modeling is designed to deal with the statistical issues that arise when participants are in groups (Snijders and Bosker 1999).

Appendix Tables 1, 2, and 3 present descriptive statistics for all variables being analyzed, namely participation levels, TABE reading scores, TABE mathematics scores, and BEST Literacy Skills scores. On average (i.e., using the mean), women participated in over 100 hours of

adult education since they entered the program, although median values were considerably lower. Participation in parenting education since entry averaged between 30 and 40 hours, as indicated by the mean. Again, median values were lower, especially for ABE students. On average (mean), students tended to participate in the family literacy program for about one year, although the median number of days in the program was less. The average number of days in the program tended to be higher for continuing students than for women who exited during the program year.

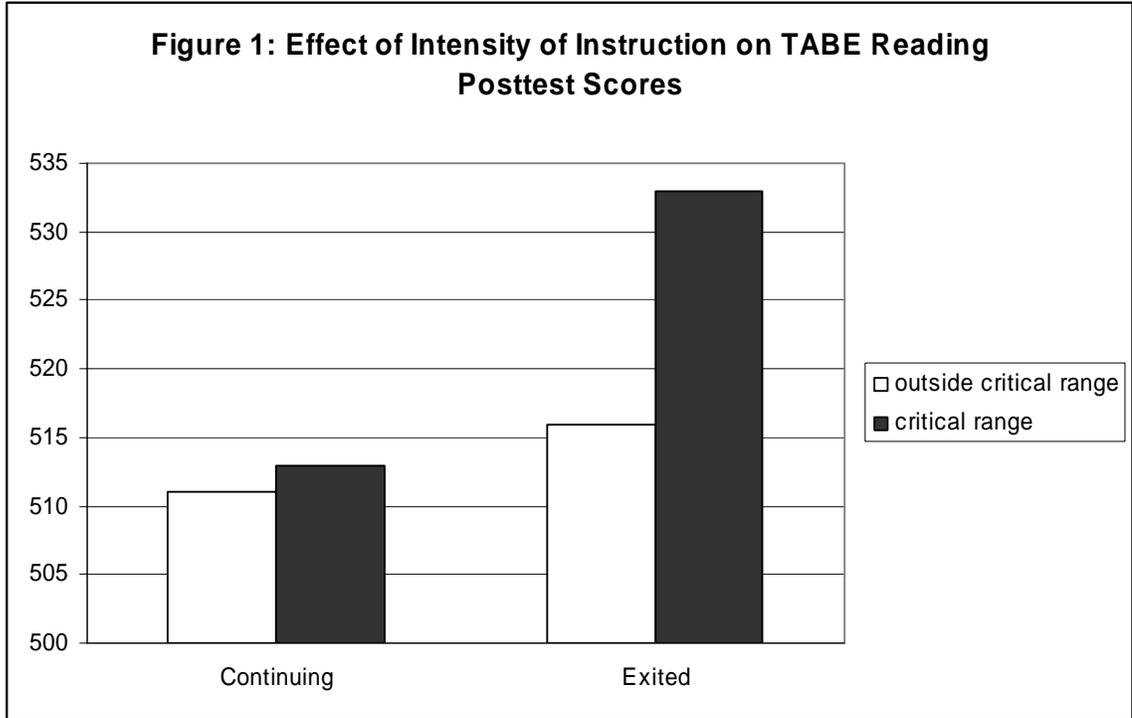
For variables measuring the number of adult education and parenting education hours of participation since the 1998-1999 program year and the number of days in the program, there is a disparity between the mean and median. Also, the standard deviation is large relative to the mean, and the maximum scores are extremely high relative to the mean and median. These characteristics, in addition to the frequency distributions for these variables, indicate that these variables are skewed to the right, meaning that values of these variables on the right side of the distribution (above the mean) tend to be further from the middle than values on the left side. In other words, some women participated in an extremely high number of hours or an extremely large number of days, away from the scores of the rest of the women. This type of distribution is problematic for many statistical procedures. In order to correct for these problems, the natural logarithm of the total number of hours the student participated in adult education and parenting education, and the number of days in the family literacy program, was calculated and used in the multilevel analyses.

Results

Results indicate that participation since the 1998-1999 program year in adult education classes was related to posttest scores. Intensity of participation during the most recent program year was consistently related to posttest scores on the TABE reading, TABE mathematics, and BEST Literacy Skills assessments. In addition, intensity of participation was consistently a more important predictor of posttest score than total number of hours of adult education instruction, a measure of persistence. For continuing participants, duration or number of days in the program was related to TABE mathematics and BEST Literacy Skills posttest scores. However for these participants, the nature of the relationship differed for the TABE and BEST.

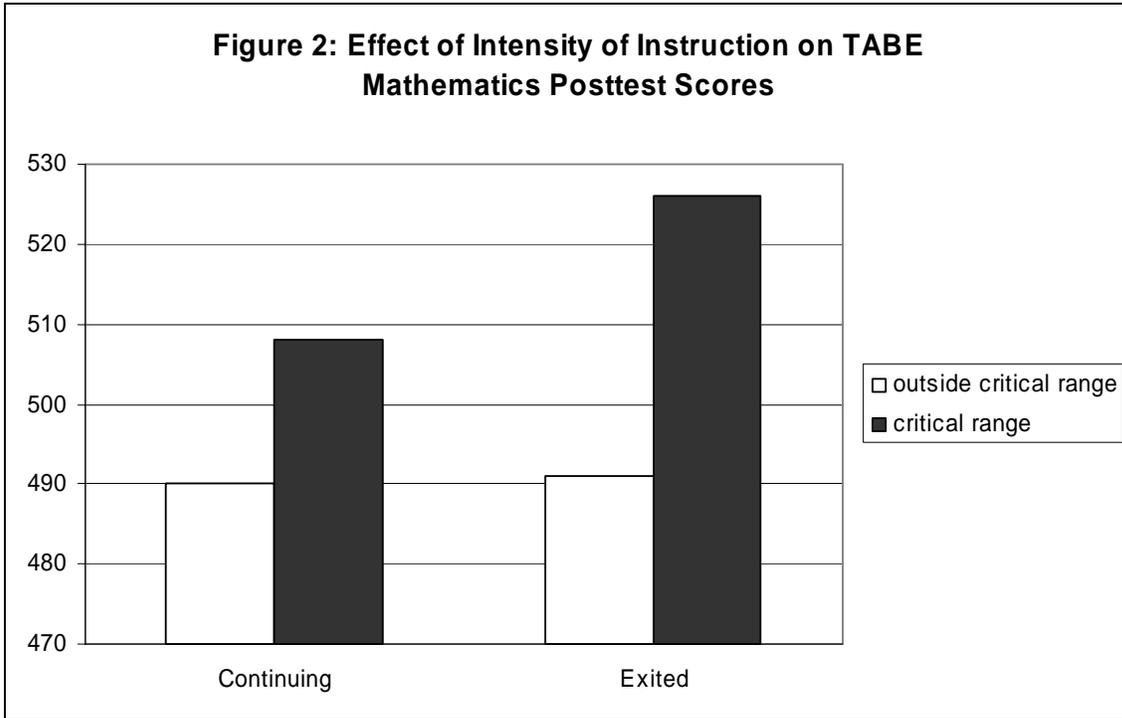
Among continuing ABE participants, results indicate that women who participated in at least 50 hours but no more than 74 hours had higher TABE reading posttest scores than women with fewer or more adult education hours ($p=0.017$). Results for ABE participants who had exited the program were somewhat similar, although for these women the critical number of hours was 75 to 99 during the program year ($p<0.001$). These results are depicted in Figure 1. These findings suggest that a certain number of adult education hours is needed during a program year in order to score at a certain level on the posttest. Results indicate that

that the critical range is between 50 and 99 hours of adult education during a program year. Minimal benefits occur on the TABE reading with continued participation. Pretest score was positively related to posttest score, which is typical of pretest-posttest analyses.



For women who continued their participation to the next program year, results suggest that long-term participants (those in the program for a greater number of days) did not score as well on the posttest. This result tended toward statistical significance ($p=0.082$). Total number of hours of adult and parenting education was not related to TABE reading posttest scores.

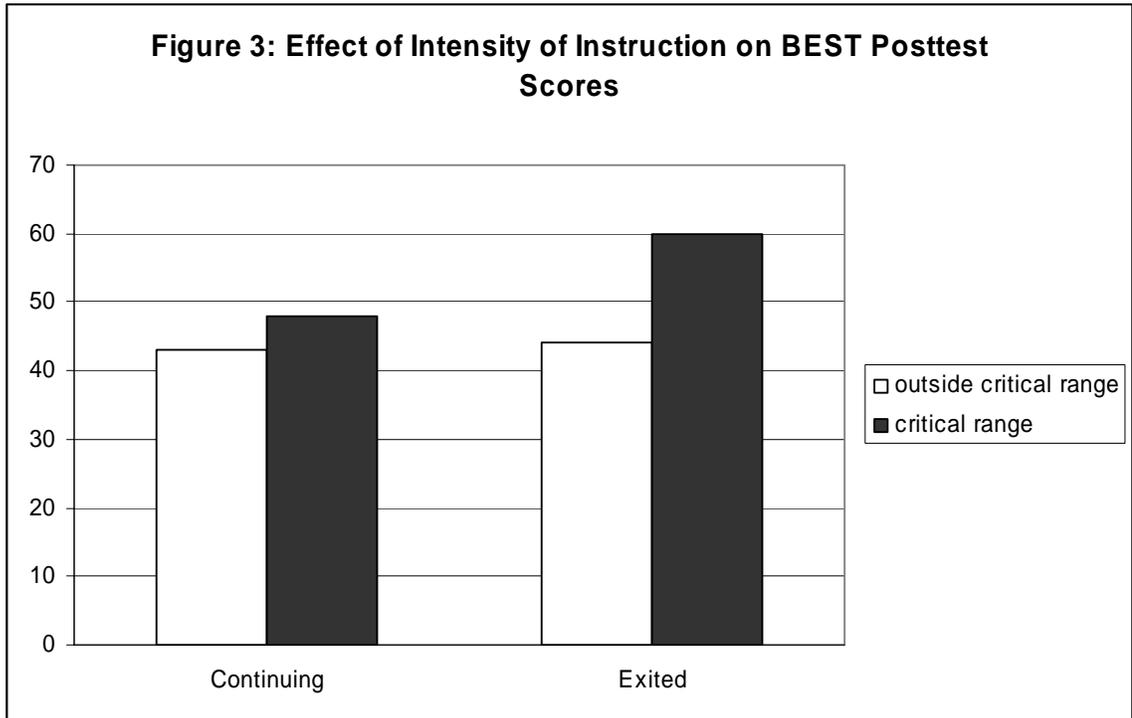
TABE mathematics posttest scores were positively related to intensity of participation. Among continuing ABE participants, results indicate that women who participated in at least 75 hours but no more than 99 hours had higher TABE mathematics posttest scores than women with fewer or more adult education hours ($p=0.006$). Again, results for ABE women who exited the program were somewhat similar, although the critical number of hours was at least 100 hours of adult education during the most recent program year ($p=0.028$; see Figure 2). Again, these results indicate that intensity is an important factor when examining adult literacy skills assessment scores.



In addition, for ABE women who were continuing their participation in the program, posttest scores were negatively related to duration in the program ($p=0.027$). This means that, among continuing participants, women who were in the program for a fewer number of days tended to have better TABE mathematics posttest scores than those in the program for a greater number of days. However, the negative effect of time in the program on TABE mathematics posttest scores grew smaller as the number of number of days in the program increased (since the number of days in the program was converted to the natural logarithm). In addition, women who had higher pretest scores also had higher posttest scores. Total number of hours of adult and parenting education was not related to TABE mathematics posttest scores.

Similar to results for the TABE, BEST Literacy Skills posttest scores are positively related to the intensity of participation in adult education classes during the most recent program year. Among continuing ESL participants, women who participated in at least 50 hours of adult education instruction during the most recent program year had higher posttest scores ($p=0.001$). For ESL participants who exited during the program year, the critical number of adult education hours was between 25 and 49 ($p=0.024$); it should be noted that the sample size for ESL women who exited is considerably smaller than the number who continued their participation (47 compared to 115, respectively). These results are illustrated in Figure 3. For women continuing their participation, BEST Literacy Skills posttest scores were higher for women who had been in the program longer, although the positive impact

of continued participation on posttest scores grew smaller over time ($p=0.001$). This result is in contrast to that obtained for the TABE.



Among ESL women continuing their participation in the program, the influence of parenting education hours on BEST scores was negative, meaning that as the total number of parenting education hours increased, posttest scores on the BEST decreased ($p=0.013$). However, the negative effect of parenting education on BEST Literacy Skills scores diminished as the number of hours grew (since the number of parenting education hours was converted to the natural logarithm).

Continuing women who scored higher on the BEST pretest also scored higher on the posttest; the relationship was not significant for women who exited. Total number of adult education hours was not related to BEST Literacy Skills scores in the models estimated, and total number of parenting education hours was related only in the model for continuing ESL women.

Summary of the Analyses

The results from these analyses indicate that adult education instruction does result in better adult literacy skills, as measured by the TABE and BEST. However, the results indicate that gains are greater if instruction is more intense. Total amount of instruction in adult education was not related to posttest scores when intensity of instruction was controlled. These results indicate that intensity is a more important predictor of adult skills assessment posttest scores than total amount of instruction in adult education. In addition, ABE women who continued their participation to

the next program year performed better on the posttest when they participated in the program for a shorter period of time, with the negative effect growing smaller over time. (In other words, continuing women who participated more intensely made greater gains.) In contrast, continuing ESL women performed better on the BEST the longer they participated in the program, although the positive impact grew smaller over time. Although the number of parenting education hours was not related to TABE posttest scores, it was related to BEST Literacy Skills scores, but only among ESL women who were continuing their participation to the next program year. The direction of the effect was unexpected, however, since the amount of parenting education was negatively related to BEST Literacy Skills scores. This finding is difficult to interpret; we are conducting further research at the Goodling Institute to determine what is happening during parenting education at selected family literacy sites.

Conclusions

The results from the analyses of the statewide evaluation data indicate that adult learners who accumulate between 50 and 99 hours of adult education within a single 12 month period perform better on the TABE reading, while at least 75 hours are needed in order to perform better on the TABE mathematics posttest. At least 50 hours of adult education instruction appear to be needed for ESL participants, at least for those who are continuing their participation to the next program year. Intensity of instruction was consistently more important than total number of hours accumulated in adult education.

These results speak to policies that require participants to accumulate at least 100 hours of adult education instruction before administering a posttest. The results presented here consistently indicated that intensity of instruction is important, and more important than overall accumulation of hours (over multiple years).

Continuing ABE participants who finish their program in a shorter period of time perform better on the TABE posttests, controlling for initial reading and mathematics scores (pretests) on the TABE. Furthermore, ABE women who stay in the program for long periods of time without exiting (or moving to adult secondary education program) do not make the same progress as ABE women who are able to concentrate their participation. However, the effect of duration in the program was different for continuing women who were developing their English literacy skills. Women working on their English literacy skills and who were in the program for longer periods of time did better on the BEST posttest than women who were not in the program as long. This finding suggests that aspects of the family literacy program other than adult education help women develop their English literacy skills. Nevertheless, intensity of participation is also needed for these women.

Finally, hours of parenting education were not related to TABE posttest scores, and they were negatively related to BEST Literacy Skills posttest scores among continuing ESL participants. If parenting education

classes reinforced what was learned in ESL classes, then one would expect parenting education to be positively related to adult literacy skills, as measured by the BEST. Results obtained in this study may have been influenced by intensity of participation in parenting education relative to ESL instruction, and whether parenting education occurs in English or the student's native language. To further understand the relationship between parenting education hours and adult literacy skill attainment among ESL students, additional research is needed to determine if parenting education classes do, in fact, reinforce what is taught in adult education classes. This information was beyond the scope of this study since analyses were performed on data collected from multiple programs in the state. However, the Goodling Institute is in the process of developing an observational instrument that will help identify what is occurring in parenting education classes.

Practical implications of this research are that administrators and teachers may want to think about participation of adults in adult and family literacy programs in a new way. Instead of focusing solely on participation as defined by Comings, et al. (1999), they should consider the factors that affect the intensity of participation in the local family literacy program. For example, intensity might be increased by augmenting classroom time with learning outside class through teacher-prepared guided study using print materials, computer materials, or Internet-based distance education. Perhaps parents could be persuaded to make a commitment to study for more hours over a shorter time frame if they understood the importance of intensity. Duration of the participation, in addition to intensity, is important, however, to non-native speakers of English as they need time to practice their emerging English skills. Again, they too could benefit from learning and practice opportunities outside the adult education class.

This research may also have implications for policy makers who can influence the amount of time dedicated to instruction through grant making guidelines. Adult and family literacy programs that offer increased numbers of instructional hours per week could be given priority for funding. Further research is needed to confirm these results in family literacy programs outside Pennsylvania and in stand-alone adult education programs.

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Appendix Table 1 Descriptive Statistics for Adults Administered the TABE Reading: Exited (n=137) and Continuing Female ABE Students (n=108)					
	Mean	Median	Std Dev	Minimum	Maximum
Adult ed hours, exited students	132	88	137	8	716
Adult ed hours, continuing students	150	80	218	16	1,250
Parent ed hours, exited students	41	18	76	1	650
Parent ed hours, continuing students	48	18	71	1	350
Days in Program, exited students	463	303	414	21	2,719
Days in program, continuing students	527	470	378	62	1,426
TABE reading posttest scores, exited students	518	520	54	202	697
TABE reading posttest scores, continuing students	513	518	58	336	702
TABE reading pretest scores, exited students	499	507	71	175	702
TABE reading pretest scores, continuing students	492	504	70	255	619

Appendix Table 2 Descriptive Statistics for Adults Administered the TABE Mathematics: Exited (n=98) and Continuing Female ABE Students (n=103)					
	Mean	Median	Std Dev	Minimum	Maximum
Adult ed hours, exited students	102	62	115	8	716
Adult ed hours, continuing students	129	62	216	10	1,250
Parent ed hours, exited students	40	15	79	1	650
Parent ed hours, continuing students	43	18	63	1	350
Days in Program, exited students	425	285	411	21	2,719
Days in program, continuing students	451	326	324	48	1,425
TABE math posttest scores, exited students	499	512	60	279	594
TABE math posttest scores, continuing students	491	508	61	264	578
TABE math pretest scores, exited students	481	486	63	217	618
TABE math pretest scores, continuing students	462	482	73	230	598

Appendix Table 3 Descriptive Statistics for Adults Administered the BEST Literacy: Exited (n=47) and Continuing Female ABE Students (n=115)					
	Mean	Median	Std Dev	Minimum	Maximum
Adult ed hours, exited students	146	108	113	22	598
Adult ed hours, continuing students	174	131	156	2	900
Parent ed hours, exited students	31	21	26	1	141
Parent ed hours, continuing students	44	35	42	2	328
Days in Program, exited students	292	208	230	69	846
Days in program, continuing students	429	363	295	25	1,364
BEST literacy posttest scores, exited students	46	48	15	0	71
BEST literacy posttest scores, continuing students	47	48	16	2	72
BEST literacy pretest scores, exited students	38	42	18	0	70
BEST literacy pretest scores, continuing students	37	38	170	1	72