The Untapped Power of Summer to Advance Student Achievement

THE LEARNING SEASON

EXECUTIVE SUMMARY

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By Beth M. Miller, Ph.D.
MMRA

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The Untapped Power of Summer to Advance Student Achievement

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MMRA

1250 Hancock Street, Suite 205N, Quincy, MA 02169
Tel. 781-348-4200
www.nmefdn.org

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Message from Nicholas C. Donohue
President and CEO, Nellie Mae Education Foundation

Since 2000, the Nellie Mae Education Foundation has focused on key factors that contribute to student learning and achievement both inside and outside of the classroom. As the school year draws to a close and summer commences, it seems only fitting that we present our new report, "The Learning Season: The Untapped Power of Summer to Advance Student Achievement."

Others have looked at the effects of summer before. This report connects these past efforts with the work of a new crop of researchers.

What is striking is that all of these researchers have arrived at a similar set of conclusions: that children in all socioeconomic groups are learning at nearly the same rate, at least when it comes to basic skills, during the school year, and that differences in achievement between poor and middle-class children are rooted in the inequities that young people experience outside the schoolhouse door.

And while the findings regarding summer learning loss are profound, they must not distract us from the unfinished business of school improvement. Achievement is too low and the quality of school time activities is part of the problem.

However, we must broaden our thinking about student learning to include strategies that focus on where children are and what they are doing outside of the classroom. This must include a more nuanced understanding of the larger social conditions—poverty, violence, discrimination—that neuroscientists tell us influence learning and development in dramatic ways. Thus the challenge remains a complicated and important one. We know that school and societal influences on learning are enormous and now this report provides a firm reminder that summer learning loss is a major issue as well.

It is time for us to make a bold move to significantly rethink the educational experiences we organize for learners as a changing global society demands increased levels of learning for a much broader population. An important part of this rethinking must include what happens during summer. We hope that "The Learning Season" will help spark a new kind of public dialogue about what it takes to help our young people become productive adults and engaged citizens.

Introduction

The future of any society depends on its ability to foster the health and well being of the next generation. Today's children will become tomorrow's citizens, workers, and parents. When we invest wisely in children and families, the next generation will pay that back through a lifetime of productivity and responsible citizenship. When we fail to provide children with what they need to build a strong foundation for healthy and productive lives, we put our future prosperity and security at risk [1].

What does it really take to shape a generation of solid, decent, well-rounded young people who will support their families, strengthen their communities, and uphold the democratic values of a civil society?

Fortunately, the last decade has witnessed an explosion of discoveries in the neurosciences that point toward powerful new ways of understanding what our children need in order to learn and develop well [2–4]. We now know, for example, that cognitive, emotional, and social capabilities are inextricably intertwined throughout one's life. Emotional well-being and social competence provide a strong foundation for cognitive abilities, and together they are the bricks and mortar that comprise the foundation of human development and learning. In other words, learning is not just an academic activity that is confined to the classroom; it is part of a complex and ongoing developmental process.

And yet, the public discussion today about how to provide children with what they need to thrive in adulthood focuses almost exclusively on what happens to them in school.

In fact, according to a large and growing body of research, our nation's schools are doing a remarkably good job in fulfilling the role accorded to them—despite clear differential resources within and across schools [5–12]. This evidence, of course, flies directly in the face of conventional wisdom: that the nation's schools are failing its children. We believe it is time to retire the knee-jerk impulse to critique our nation's schools and focus instead on some important new insights that can facilitate both a new kind of public dialogue about learning

and development and a new set of policies and practices that truly put all young people on a productive and enriching path to adulthood.

New insights about when and where learning takes place come from a body of groundbreaking research on seasonal learning, which highlights the connection between a child's summer experiences and his or her success in school and beyond. In so doing, the research underscores the tremendous untapped potential of the summer months to level the playing field for all of our children.

Key Findings

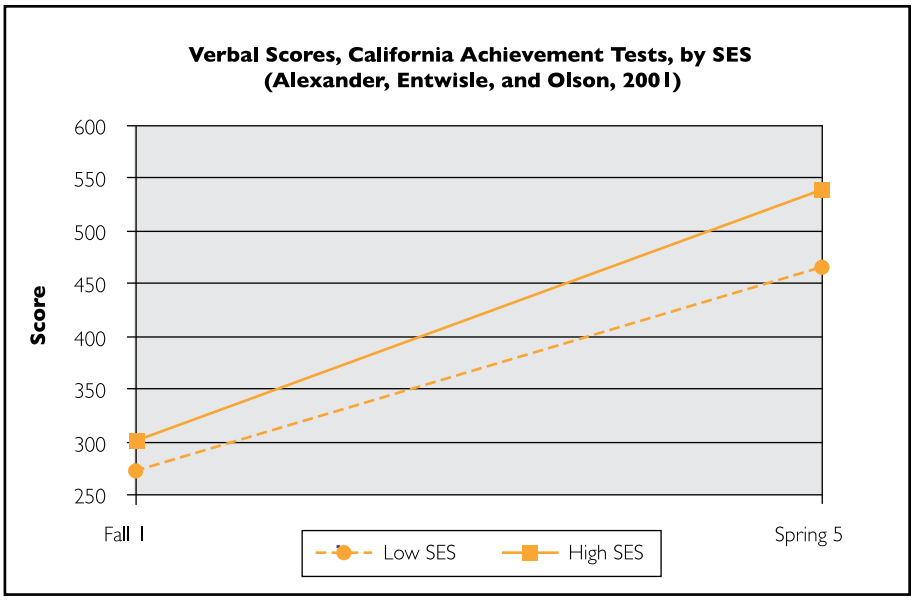
Beginning in 1906 [12] and then again more recently, a number of researchers, in looking closely at achievement scores, have arrived at a strikingly similar set of conclusions: *that children in all socioeconomic groups are learning at the same rate, at least when it comes to basic skills, during the school year, and that nearly all the differences in achievement between poor and middle-class children are rooted in the inequities that young people experience outside the schoolhouse door:* namely, before they begin kindergarten, and once in school, during out-of-school time. These inequities are especially pronounced during the summer months, when middle-class children continue to learn or hold steady in reading and language skills, while poor children lose knowledge and skills.

How do we know this? A decade ago, Cooper and his colleagues [13] reviewed 39 studies of children's learning over the summer months and conducted a meta-analysis on 13 of the highest-quality and most recent studies. They found that all children lose an average of 2.6 months of grade-level equivalency in math skills over the summer. In reading, middle-class children gain on reading tests over the summer, while lower-income children lose ground. Across the studies, this divergence results in an average gap of three months in reading skills.

The importance of summer learning loss to the test-score gap between middle and lower-income students is illustrated by results from the Beginning School Study, conducted in Baltimore with nearly 800 students from across the Baltimore school district [10]. Children

took the California Achievement Tests (CAT) in both the fall and spring of each year, with only 16 percent of the original sample lost to attrition[1]. Figure 1 shows a line representing the change in scores between the beginning of first grade and the spring of fifth grade. Lower socioeconomic status (SES) children start out behind their middle-class peers, with about a six-month gap in grade equivalency, and fall further behind over time, resulting in a lag of 2.5 years by the time they leave fifth grade.

Figure 1. Achievement Gap over Time

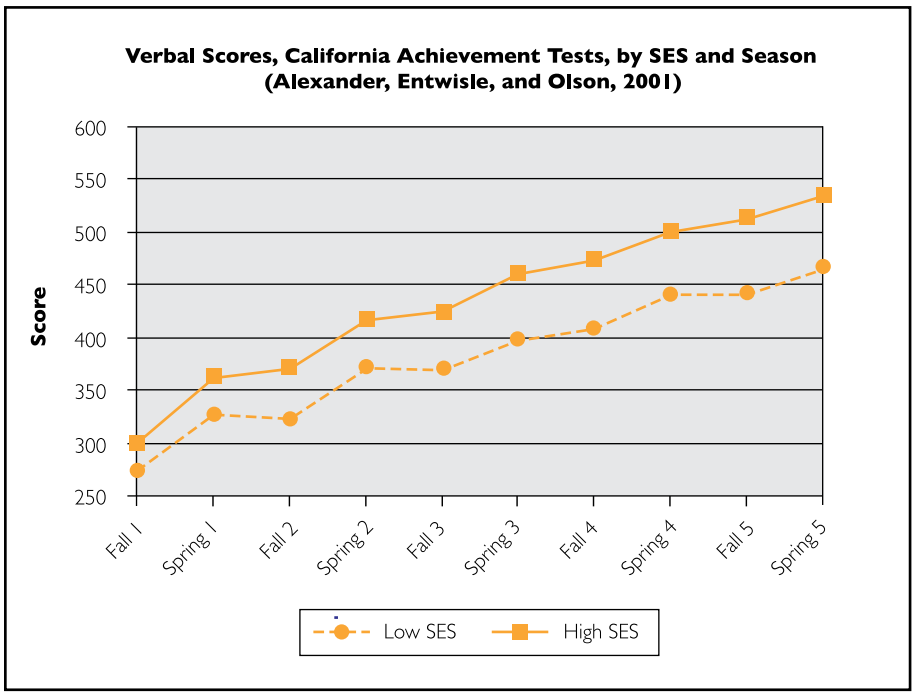


Adapted from Entwisle, Alexander, & Olson, 1997

In Figure 2, scores in the CAT are broken down by fall and spring test results. Here we can see that the gap in achievement grows not during the school year but rather over the summer (between the spring testing and fall testing). In other words, *all the increase in the achievement gap between first and fifth grade was attributable to changes in learning that occurred over the summer.*

[1] *Sample attrition is higher in some years than others, due to changes in follow-up practices and funding.*

Figure 2. Achievement Gap over Time, by Season



Adapted from Entwisle, Alexander, & Olson, 1997

More recently, studies of seasonal learning by Burkam [9], Borman [14, 15], Downey [6, 16] and others have had similar results. For instance, using data from the nationally representative Early Childhood Longitudinal Study (ECLS), Downey and his colleagues found that, at least for kindergarten and first graders, schools serve as "the great equalizer," doing much more than they generally get credit for in boosting the achievement of students from low-income backgrounds.

These findings may seem surprising since poor children generally attend schools with fewer resources and less qualified teachers [17, 18]. But the research demonstrates that even a school with limited resources gives children a big boost, compared to what many poor children get in terms of learning inputs over the summer. While their middle-class peers are engaged in activities and often enrolled in enrichment programs and camps that strengthen and reinforce all kinds of learning, the vast majority of children in lower-income communities have little or no access to such opportunities. Hence, what we have is an enormous "opportunity gap."

The research on seasonal learning calls into question the wisdom of the fact that the lion's share of public and philanthropic resources are dedicated to school-year education, and that relatively scant resources are earmarked for summer learning experiences. In addition, if we look squarely at the evidence, we cannot help but see that the current public conversation on the test-score achievement gap between poor and middle-class children is uninformed and highly problematic. That conversation is long on blaming schools, teachers, parents and students for "failure" to measure up to expectations, and short on understanding that the gap is largely about access to opportunities and resources outside of the classroom, particularly during the summer months.

Applying a seasonal lens to the research on educational outcomes uncovers exceptionally rich findings: poor children demonstrate their tremendous capacity to learn and use the educational content they are offered, even though schools serving poor children often cannot provide an equitable education. These findings are sobering in light of the challenges faced by many children living in poverty and the schools that serve them, including high rates of chronic health problems, poor nutrition, language barriers, racism, safety concerns, lack of supervision when parents work multiple jobs, and lack of access to health care, in addition to substandard and transient housing [19–21, 22].

According to very preliminary research, summer learning loss may explain much of the racial gap in test scores as well. One recent study found that African-American youngsters experience greater summer learning loss than white students, but in addition, experience lower learning rates during the school year as well [16]. Factors that could account for this include: low teacher expectations, institutionalized racism, and lack of same-race role models. Thus, it appears that African-American children are getting a classic double whammy.

For clarity sake, it is important to mention that the studies informing this report have looked exclusively at elementary school aged children and learning loss. While the research does not tell us specifically whether learning continues to follow this pattern through high school, we know from other research that the early years of schooling are the foundation for everything to come. If children get further and further behind in elementary school, they are likely to be tracked into lower-level education in high school, resulting in higher drop-out rates and lower

college enrollment. This is, in fact, what Alexander and Entwisle found when, in one seminal study, they followed children from their first year in school until they were 22 years old [5].

Clearly, we can no longer ignore the fact that the long summer vacation period represents critical hours for learning that must be fully utilized—for those "beating the odds" during the school year and for those who are not—if we are going to meet our educational imperatives in a global economy.

The Faucet Theory

Summertime occupies a specific place in the public imagination, conjuring up images of rest and relaxation, of fresh air and freedom. Consequently, its role in helping young people learn and develop in significant ways has been vastly underestimated. In reality, it is during the summer season that many children are given the opportunity to expand their horizons and find their true passions, to build new relationships and master new skills—all experiences that foster learning and development.

In fact, the research on seasonal learning tells us that these very kinds of non-academic experiences, so commonplace for many middle-class children, actually support learning. This learning shows up in myriad ways, including, but not limited to, reading and test scores. Informal activities at camps or with families provide a conceptual framework and context for learning: they cultivate such things as reading for pleasure and experimenting out of sheer curiosity; exploring interests and developing passions; a sense of mastery in something one cares about; and opportunities to practice and see the meaning of skills in the course of everyday life. So for the significant numbers of children who do not have access to these and other experiences, the summer can be three months too many without meaningful learning opportunities.

During the school year, children in both affluent and lower-income communities benefit from what is known as the "faucet theory:" learning resources are turned *on* for all children during the school year. [10] But in the summertime, the faucet is turned *off*. While all families want to provide the best for their children, there are significant differences between the resources

middle-income families and communities can offer their children and what lower-income families and communities can offer. Even though low-income working families typically spend a higher portion of their income on child care than parents in more affluent families [23, 24], even those with multiple low-wage jobs cannot cover the high tuition fees that are typical of many summer day and overnight camps.

Thus, the experiences of low-income children are not likely to mirror those of middle-income children in private camps, where enrichment in the arts, technology, and sports is the norm. Furthermore, the lack of affordable child care may require older children in low-income families to stay at home to care for younger children during the hours in which their parents work.

Neighborhood characteristics and assets also play a role. Earlier research on neighborhood effects on development indicates that neighborhood safety, cohesiveness, and areas for play all influence learning and development [25–28], as do health, housing, and nutrition. Children in poor urban neighborhoods that have high levels of violence are often kept inside much of the time for their own protection [29]. Entwisle and Alexander found that children in neighborhoods with high levels of poverty had greater summer learning loss, even after controlling for family resources [10]. Housebound children may end up spending many of their summer hours in front of the television, an activity that is negatively associated with learning in general and reading in particular [30, 31].

All children lose some knowledge over the summer, and as any teacher can attest, the early weeks of the school year are often spent reviewing material learned in the previous grade. But because poor children do not have access to the same kinds of opportunities as their middle-class peers, they enter school each fall in a disadvantageous position.

The data on summer program participation bears this out. Most of the available information about summer program participation is based on data collected over a decade ago, but the findings are quite similar across studies: summer opportunities are not evenly distributed, and low-income children lose out [23, 32–34]. Racial differences are also apparent; most studies find that the racial group most likely to attend is white children, followed by African-American children, with Latino children attending at lower rates. A special study by the National Center

for Education Statistics [35, 36] found that 42.5 percent of children in high-income households attended camp the summer after kindergarten, compared with just 5.4 percent of children in low-income and 18.4 percent of children in middle-income families.

During the school year, free public education provides learning opportunities for all families with school-age children, at least part of the day. It stands to reason that if low-income children are to gain access to programs that can reverse summer learning loss, public funding is needed to "turn on the faucet" of learning experiences.

Summer Experiences: What's Out There?

How can we keep the faucet on during the summer months? One approach would be to extend the school year, which may make sense especially in light of the fact that children go to school fewer days in the U.S. than in other industrialized countries [37]. However, this approach poses significant financial hurdles if the school calendar is to be extended more than a few days or even weeks, i.e., enough to make a significant difference. In addition, while schools have proven competent at teaching the basic math and English skills tested by standardized tests, other types of programs may be better at developing skills in teamwork, critical thinking, creativity, and a host of other areas important to building individual brain architecture and a national workforce.

Schools are only one of many options to keeping the faucet turned on: other tested strategies include summer reading interventions, summer school, summer camp, and hybrid youth development-academic enrichment programs, all of which have some potential for reversing summer learning loss and increasing educational equity.

Summer Reading Interventions

Reading is the foundational skill for later learning. The National Reading Panel [38] found that increasing the time that children spend reading is the single most powerful strategy for improving literacy skills in fluency, vocabulary, and comprehension. While children have learning losses in all areas during the summer, the achievement gap widens especially in the area of reading.

Several studies, although preliminary in nature, suggest that providing books to low-income children and encouraging them to read is a relatively cost-effective and replicable approach for supporting children's reading skills over the summer [39–41]. As Kim [40 page 31] suggests, "Encouraging voluntary reading during summer vacation may be one useful strategy for helping struggling readers acquire the skills needed to succeed in school."

Summer School

While traditionally geared toward high school students who are required to repeat a course they failed during the school year, in many cities summer school is now mandatory for children of many grade levels who have failed or are at risk of failing standardized tests [14]. As a result, the number of children enrolled in summer school has increased significantly, even in early elementary grades [42]. Several recent studies offer some evidence of positive academic effects related to summer school attendance [43–45], although these gains tend to be small. Programs are more effective in boosting math than in improving reading skills, and they are more successful with children in the younger grades than those in middle school. Furthermore, middle-class children seem to benefit the most from their summer school experiences.

One of the main concerns about summer school learning is the fact that children's gains often do not carry over into the school year [44, 46–48]. One approach is to combine the traditional focus on skill building with the kinds of developmental experiences common to recreational camping programs.

Summer Camps

Summer camps typically have a recreational focus, yet camps are the environments in which most middle-class children—who continue to improve their reading skills—are spending many of their summer hours. Unfortunately, research on the effects of summer camp is weak to date, with few studies using accepted scientific methods such as random assignment or comparison groups. Therefore, although the existing research indicates that camps can have a positive impact on young people in building social skills, self-confidence, project planning skills, motivation to do well in school, physical skills, and positive values—until more is known the results should be taken as suggestive rather than definitive [49–51]. The existing studies indicate that well-implemented camp programs have the potential to support children's social

and emotional development, which may lead to increased academic performance. However, to reduce the achievement gap, programs may need to supplement their program by integrating an intentional focus on academic skills.

Youth Development/Academic Enrichment Programs

Over the last decade, a new model of summer programs has developed that does not fit the typical mold of either summer school or summer camps. These programs have the goal of boosting children's academic performance, but unlike traditional summer schools, they take an accelerated, rather than a remedial, approach. They combine the qualities of typical youth development programs—building self-confidence, sense of mastery, sense of belonging, self-discipline, sense of responsibility to self and others—with high-quality curricula that increase engagement in learning and specific skills in reading, math, and other subjects.

In one such program, BELL, researchers found that participants gained approximately one month *more* of reading skills than the control-group children [52]. Just as important, since it is likely to lead to long-term benefits for children's academic accomplishment [38], the parents in the program increased their encouragement of children's reading.

A study of Teach Baltimore, another program that combines the enrichment and recreational orientation of summer camps with a focus on academic progress, found no effects on reading scores after one year but a growing and statistically significant impact after children spent two or three years in the program [53]. A third program, sponsored by the Milken Family Foundation to serve low-income children found that "when reading instruction and tutoring were integrated into a summer day camp context, disadvantaged first-grade children from schools whose reading test scores were below the 25th percentile made significant reading gains compared to students who did not attend the summer intervention. [54]"

These three studies, which met high scientific research standards, together create the beginning of a body of evidence that carefully designed and implemented summer programs combining the best of youth development and academic enrichment can make a difference in preventing summer learning loss[2].

[2] *A more detailed discussion of research findings on summer program quality can be found in Appendix A of the full report,* The Learning Season: The Untapped Power of Summer to Advance Student Achievement.

The Summer Advantage

In many ways, a quality summer program may represent a kind of ideal learning environment for children, one that supports broad learning and development in a variety ways. The unique attributes of quality summer programs described below help articulate why making good use of the summer months truly has the potential to level the playing field for American children.

More time

One clear advantage of summer learning is sheer time. The research on extending school hours makes clear that time alone will not make the difference [55–57], but studies have shown that successful summer programs get children excited about learning and increase their motivation to pursue knowledge in the months and years ahead. Summer programs have the potential to extend learning time in an atmosphere of excitement, fun, and support, thereby building positive attitudes toward learning year-round.

Strong Relationships

Research on education [58, 59] and youth development [60–65], as well as resiliency [66–68] and brain research [3, 69] point to the key role played by young people's relationships with caring adults—teachers, parents, or other adult role models—in reaching positive outcomes. The research also points to the importance of good peer relationships [27, 70], especially as children enter adolescence. Summer programs represent an unhurried opportunity for children and youth to develop strong relationships with adults and peers, and they can also provide a sense of having a valued place in a larger community. Unlike school, where much of the attention is on academic subjects, and after-school programs, where time limits the ability to develop deeper connections, summer is rich in both time and potential for relationship-building. Summer programs are also a place where parents often feel welcome, partly because of their more informal nature and partly because of a greater emphasis on connection and community.

Motivation and Engagement

In order to be good learners, children must want to do well. Motivation springs from many sources, including the belief that an activity is challenging but not beyond a child's ability, that

the task will be enjoyable, if not actually fun, and that it has some real meaning [71–73]. Young people need to feel competent as learners, to believe they can make a difference in their own success, persist in the face of challenges, feel that they can solve problems, and have an interest in the content of the material they're learning [74]. Summer programs often build on children's intrinsic interests, and often present an opportunity for children to develop expertise in such areas as sports and the visual and performing arts. Being engaged in their own learning increases young people's motivation over the long run, helping them develop goals and attitudes that last long past the warm days of summer.

Experiential Focus

We know from research on the brain, as well as research on how experts in diverse fields have mastered their subject matter, that the ability to locate new knowledge in a conceptual framework is key to learning. As research on brain development demonstrates [2–4, 69, 75], curricula that reinforce connections between physical, social, and cognitive domains will result in the greatest advances in achievement for children and youth. Experiential education, which includes adventure education, project-based and community service learning, many thematic curricula, and outdoor adventure programs, can lead to outcomes such as improved self-concept, stronger internal locus of control, stronger leadership skills, better grades, and higher school attendance [76–78]. Most summer programs are experiential in nature or contain an experiential component. Clearly, this reaps rewards for the children participating in them.

Cultural Relevance

Historically, many camps were developed both to serve children from a particular religious, ethnic, or linguistic background and to build their identity. Since research indicates that schools are less successful in reducing racial test-score gaps than in counteracting income-related test-score gaps, [15], summer programs may have an especially important role in building a strong racial and ethnic identity for African-American and other children in non-dominant groups [79, 80].

Programs can play an important role in counteracting negative stereotypes many young people face, providing positive mentors and role models, and drawing on the interests of young people in developing and implementing a curriculum [81, 82]. In this sense, summer programs

often become cultural "border zones," where a young person's cultural and ethnic identity is strengthened in the context of enriched learning opportunities [83, 84]. Furthermore, participating in cross-group experiences builds children's respect for and understanding of peers from different cultures, and can help counteract negative societal messages. [73, 85].

Conclusion

While research into the educational effects of summer programs is still in its early stages, the evidence to date suggests that high quality academic enrichment programs can decrease and perhaps eliminate summer learning loss for low-income children. Given this powerful evidence, why is the learning faucet still turned too low (or even off) during the summer? This is a question that must now be addressed by researchers, policymakers, community leaders, and the public at large.

Perhaps the biggest learning gap we face is not an education or even an opportunity gap for our children. It is a knowledge gap for the adults concerned about these issues—the gap between what scientists and educators already know and what society does (or does not do) with that knowledge. If, as a society, we leave the "learning faucet" turned off for the summer, the test-score gap between economically advantaged children and their less financially well-off peers will continue to grow. Schooling matters, and while schools can improve, the research says that they are already doing their job to a large extent—that is, helping all children learn. However schools cannot help when their doors are closed and when family resources become learning resources. As a result, children with less access to opportunity lose out.

Summer deserves attention because, when the season begins, learning ends for many children. More important, the summer months represent a unique slice of time, when children can learn and develop in myriad ways that will help them in school and far beyond. Summer learning is not just about retaining information; it is about problem-solving, analyzing and synthesizing information, generating new ideas, working in teams, learning to be with all kinds of people—all skills that help build learning in a broad way [3], and can, at a time when schools are narrowing the curriculum, lend breadth to student learning. These are also the key skills

cited by business leaders as necessary for success in a global economy [86, 87]. The informal learning environments of many summer programs can be prime contexts for the development of these "21st century" skills.

The racial, ethnic, and income gaps in test score results apparent in schools reflect deep divisions in our broader society: differences in access to social networks that are linked to economic and civic success. They also result from differences in the level of bias faced by some students in their educational environments. Changing these results requires not only changing schools, but also creating new, meaningful, ongoing experiences for children outside of school, including during the many hours of the long summer. Clearly, out-of-school experiences are not a panacea for larger inequities in our society that must be addressed, but summer learning offers an important, and largely untapped, lever for change in the ongoing efforts to create a level playing field for all our children. In a participatory democracy and demanding global economy, this endeavor is an imperative.

The Learning Season: Recommendations

Summer learning loss is an issue for all children and all schools. In math, for example, middle-income children and low-income children lose ground in very similar ways. This means that, every year, teachers must spend the first weeks of school in review mode. But as this report argues, the losses over the summer are much greater for lower-income and African-American children. This is true, despite the fact that our schools are doing a very good job of educating children of all income levels at the same pace in basic skills during the school year. So how do we ensure that all our children continue to progress, even in the months when school is not in session? How do we keep the momentum going for young people who have clearly demonstrated that they can learn?

The following is a set of recommendations for researchers, practitioners, and policymakers that, in our view, can have the greatest positive impact on providing quality summer learning experiences for all children.

Policy Recommendations

Evidence suggests that summer programs—well designed and implemented—can not only maintain school-skills over the summer months, but also boost learning in teamwork, problem solving, communication, and other key areas. However, if summer programs are to reach their potential for children, they will require significant expansion in funding and program capacity so that all children have *equal access* to high quality summer experiences [88]. To move toward this goal we must:

1. *Spread the word.* As long as the focus on reducing the achievement gap is solely on the traditional school day, efforts will not succeed.

2. *Map current sources of funding as well as potential funding sources at the local, state, and federal levels.* For example, supplemental education services under the No Child Left Behind Act can support summer educational support for many children attending Title I schools.

3. *Build on existing networks.* Many states now have afterschool networks, some of which are increasing their focus on summer programming. Networks should include summer program providers and reach out to educational organizations to build public support. Education networks, such as statewide groups of school superintendents, should also get involved.

4. *Increase public support* for access to high quality summer enrichment programs. Gaining funding will require concerted mobilization over time by educators, parents, out-of-school time providers, and others such as the business community.

5. *Increase philanthropic support* from private charities, foundations, and donors who are interested in education, youth development, and working families.

6. *Combine funding streams.* Currently, many federal and state funding streams focus on academic remediation, while others are linked to child care, delinquency prevention, nutrition, the arts, or reading. Children need full-day services during the summer that integrate academic skill building with enrichment experiences in a wide variety of areas. Flexible financing policies that promote collaboration can create partnerships between schools, community-based organizations, and other community resources such as libraries, museums, and parks departments.

7 *Support increased quality through training and technical assistance.* Serving greater numbers of children will only be worthwhile if programs are able to provide high quality experiences for their participants. Training coupled with technical assistance or coaching is a promising approach to program improvement. For such improvements to be sustained administrative leadership should be engaged in the process, institutionalizing changes into organizational practices and culture.

8 *Develop strong, appropriate accountability systems for funded programs.* Good intentions are not enough. Program leaders need to know what is expected and have the means to track their progress toward these expectations. Clear definitions of program quality and a process for continuous improvement should be part of summer policies designed to enhance youth outcomes.

9 *Develop and disseminate high quality curricula.* Many programs do not have the time or capacity to develop their own content, but could benefit by implementing appropriate curricula in a wide variety of areas. Several projects currently evaluate and disseminate afterschool curricula, and several large research projects in this area are currently underway. This information could be useful for summer programs as well.

10 *Connect community resources and schools.* Create connections so that part-day summer school programs are linked to enriching community-based programs, or even integrated into a single comprehensive program. Create systems for communication of learning standards that can be incorporated into summer enrichment programs led by community organizations.

11 *Consider changes to the school calendar, particularly extending the school year to reduce the length of the summer vacation or breaking up the long summer vacation into shorter periods over the year.* However, the research on the effects of modified school calendars is not unequivocal, so any changes at this date should be seen as exploratory.

12 *Preliminary research indicates that giving children books, especially with some reading encouragement from families, can stem summer reading loss.* Bringing such programs to many more children at demonstration sites may be a fruitful direction.

13 *Build community capacity.* Schools, libraries, parks, community-based organizations, colleges and universities, museums, civic and religious organizations, small businesses, youth-serving organizations, recreation centers, and sports facilities may all have resources—from space to expertise—to offer. Intermediaries can play the role of bringing together partners to share assets and build opportunities for youth. Young people need access to high quality summer environments through their developmental years.

14 *Advocate for policy changes at the state and national levels.* Current federal and state policies reveal a lack of understanding of summer learning loss. For example, using annual tests as school accountability levers, without taking summer learning loss into account, unfairly biases results against schools serving low-income children and in favor of schools serving high-income children. Moreover, the curriculum-narrowing results of the current testing regimen stand in conflict with what we have learned about brain development—and learning—over the past decade.

Research Recommendations

We have learned a great deal about summer learning and summer learning loss over the years, thanks to the pioneering efforts of researchers in the field. But there are still many issues and questions to explore. Given the wide variety of summer opportunities, we especially need to increase our understanding of which experiences promote positive academic and developmental outcomes for youth, keeping in mind that some programs may be particularly successful with certain groups of young people. With that in mind, we have generated a preliminary list of items that can lead to a coordinated and integrated research agenda on summer learning.

1 *Collect nationally representative data on summer experiences of youth.* The information could be obtained as a supplement to an ongoing national data collection effort such as the National Household Education Survey (NHES) or National Longitudinal Study of Youth (NLSY). Important variables such as age, race, ethnicity, family income, and urbanicity should be included in the dataset.

2 *Compare the effectiveness of school calendar redesign strategies, including year-round schools, to academically enriched summer programs.* Comparisons should include costs as well as quality and youth outcomes. Creating year-round schedules with shorter breaks when school is not in session, lengthening the school year, and creating summer programs with equitable access are all possible strategies for reducing the achievement gap and summer learning loss in general. How do these approaches compare in quality, outcomes, and cost?

3 *Conduct high quality evaluations of youth outcomes* related to participation in well-implemented summer programs. Evaluations should include a rich description of program processes and content as well as effects on participants.

4 *Research the efficacy of various models for summer enrichment and learning.* Investigate the role of recreational, academic, and academic enrichment models in reaching positive outcomes for children from various class, racial, and ethnic backgrounds. This research should broadly define outcomes to include "21st century skills" as well as basic skills in reading and math, and explore the implications for our regular education system's curricula and structures as well as contributing to summer program design.

5 *Further examine the evidence on the effects of summer school programs on children from middle- and lower-income backgrounds, or conduct new research.* Previous research suggests that when compared to lower-income students, middle-income children generally benefit more from summer school programs, yet this advantage does not hold for regular school year programs. Could this difference be a result of the punitive nature of many mandatory summer school programs for poor children? Do the results suggest that the content of summer school programs should be expanded (through partnerships or other means) to include a broader spectrum of learning?

6 *Further examine the evidence on the effects of summer programs on African-American, Latino and Asian children, or conduct new research.* The few existing studies indicate that African-American youth are losing ground both during the school year and during the summer. Examine why this is the case and the role that institutionalized racism plays in this phenomenon, if any.

7 *Conduct studies that investigate the ability of summer programs to build children's cultural, ethnic, or racial identity* as well as enhance skills in communication and understanding across boundaries. Research on ethnic identity demonstrates the importance of this factor in educational success, especially for children of color, while studies of programs in science and math have been shown to increase girls' involvement in these subjects. Children who develop the ability to understand, respect, and work constructively with others across racial, ethnic, and religious differences will be an asset as both citizens and workers. Programs with such goals should be a special interest of researchers looking at summer programs.

8 *Examine the effectiveness of summer program improvement models,* including training, technical assistance, and quality standards in moving programs to a higher level of quality and improve youth outcomes. While there is much agreement that quality is important, we are lacking solid information on the best way to move from where we are now to where programs need to be. In addition, we need quality assessments developed and tested specifically for summer programs to gauge their status and measure improvement.

9 *Develop and test the efficacy of high quality curricula* that embed learning in project-based approaches, thematic learning, or other sequential, intentional, experiential formats. Such curricula may be drawn from existing educational curricula that has been adapted for less formal environments or developed specifically for after-school programs, summer programs, or youth development.

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About the Author

Beth M. Miller, Ph.D., has been conducting research and policy analysis in the afterschool field for over two decades. She is currently President of Miller-Midzik Research Associates (MMRA) and Senior Research Advisor, National Institute on Out-of-School Time (NIOST), Center for Research on Women, Wellesley College. Recent projects include: Co-Principal Investigator of the Massachusetts Afterschool Research Study (MARS); evaluations of the National Science Foundation-funded Mixing in Math Initiative and Boston's Literacy Coaching Initiative; and development, in collaboration with NIOST and the Massachusetts Department of Education, of the Afterschool Program Assessment System. *Critical Hours: Afterschool Programs and Educational Success*, Dr. Miller's previous report for the Nellie Mae Education Foundation, has been widely disseminated.

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