

Technical Appendix

Definition

Summer schools are lessons or classes during the summer holidays. They are often designed as catch-up programmes, although some do not have an academic focus and concentrate on sports or other non-academic activities. Others have a specific aim, such as supporting pupils at the transition from primary to secondary school, or preparing high-attaining pupils for university.

Programmes or approaches which are not delivered by teaching staff during the summer holidays - for example, summer homework, online home learning, book gifting programmes or parents providing teaching or learning support - are not included in this analysis,

Search terms: summer school; summer education; vacation programs; summer enrichment; holiday program

Evidence Rating

There are six meta-analyses, which, on average, suggest that pupils who attend summer school make approximately two additional months' progress, compared to similar pupils who do not. Three of these have been published in the last ten years. The range of pooled effects in the meta-analyses is from 0.05 to 0.26, with a weighted mean of 0.18.

Greater impacts (as much as four additional months' progress) can be achieved when summer schools are intensive, well-resourced, and involve small group tuition by trained and experienced teachers. Summer schools without a clear academic component are not usually associated with learning gains. Other variables, such as whether the teacher is one of the student's usual teachers, seem to make less difference on average. Overall, the evidence is rated as extensive.

References

- 1 *Borman, G. D., & Dowling, N. M.*
Longitudinal achievement effects of multiyear summer school: Evidence from the Teach Baltimore randomized field trial [↗](#)
Educational Evaluation and Policy Analysis, 28(1), 25-48
(2006)
- 2 *Cooper, H, Charlton, V., Muhlenbruck, M., Borman, G.D. (Abstract ↓)*
Making the Most of Summer School: A Meta-Analytic and Narrative Review [↗](#)
Monographs of the Society for Research in Child Development, 65.1, pp. 1-127
(2000)
- 3 *Day, L. Martin, K., Sharp, C., Gardner, R. & Barham, J.*
Summer Schools Programme for Disadvantaged Pupils: Key findings for Schools Research Report (DFE- RR271B) [↗](#)
London: DfE
(2013)
- 4 *Gorard, S., Siddiqui, N. & See, B.H.*
Future Foundations Evaluation Report and Executive Summary [↗](#)
EEF, London
(2014)
- 5 *Kidron, Y., & Lindsay, J. (Abstract ↓)*
The effects of increased learning time on student academic and nonacademic outcomes: Findings from a meta analytic review [↗](#)
American Institutes for Research
(2014)
- 6 *Kim, J. S.*
Effects of a voluntary summer reading intervention on reading achievement: Results from a randomized field trial [↗](#)
Educational Evaluation and Policy Analysis, 28(4), 335-355
(2006)
- 7 *Kim, J. S., & Quinn, D. M. (Abstract ↓)*
The effects of summer reading on low-income children's literacy achievement from kindergarten to grade 8 a meta-analysis of classroom and home interventions [↗](#)
Review of Educational Research, 83(3), 386-431
(2013)
- 8 *Lauer P, Akiba, M., Wilkerson, S.B., Apthorp, H.S., Snow, D., & Martin-Glenn, M.L. (Abstract ↓)*
Out-of-School-Time Programs: A Meta-Analysis of Effects for At-Risk Students [↗](#)
Review of Educational Research, 76(2), 275-313
(2006)
- 9 *Lewis, C.P. (Abstract ↓)*
The Relation Between Extracurricular Activities With Academic And Social Competencies In School Age Children: A Meta-Analysis [↗](#)
PhD thesis submitted to the Office of Graduate Studies of Texas A&M University, College Station, Tx (ProQuest Dissertations)
(2004)
- 10 *Maxwell, B., Connolly, P., Demack, S., O'Hare, L., Stevens, L. & Clague, L.*
Summer Active Reading Programme Evaluation Report and Executive Summary [↗](#)
EEF, London
(2014)
- 11 *McClanahan, W.S., Sipe, C.L., & Smith, T.J.*
Enriching Summer Work: An Evaluation of the Summer Career Exploration Program [↗](#)
Philadelphia, Pa: Public Private Ventures
(2004)
- 12 *Snipes, J., Huang, C.-W., Jaquet, K., and Finkelstein, N.*
The effects of the Elevate Math summer program on math achievement and algebra readiness [↗](#)
(REL 2015–096). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory West
(2015)
- 13 *Torgerson, D., Torgerson, C., Jefferson, L., Buckley, H., Ainsworth, H., Heaps, C. & Mitchell, N.*
Discover Summer School Evaluation Report and Executive Summary [↗](#)
EEF, London
(2014)
- 14 *Washington State Institute for Public Policy (Abstract ↓)*
Summer learning programs: Academically focused Pre-K to 12 Education [↗](#)
WSIPP
(2017)

Summary of effects

Meta-analyses	Effect size	FSM effect size	
Cooper, H, Charlton, V., Muhlenbruck, M., Borman, G.D., (2000)	0.26	0.24	
Kidron, Y., & Lindsay, J., (2014)	0.16	-	Literacy
	0.08	-	Maths
Kim, J. S., & Quinn, D. M., (2013)	0.10	-	
Lauer P, Akiba, M., Wilkerson, S.B., Apthorp, H.S., Snow, D., & Martin-Glenn, M.L., (2006)	0.09	0.09	Maths
	0.05	0.05	Literacy
Lewis, C.P., (2004)	0.10	-	
Washington State Institute for Public Policy, (2017)	0.06	-	
Single Studies	Effect size	FSM effect size	
Gorard, S., Siddiqui, N. & See, B.H. (2014)	0.17	0.16	English
	0.00	-0.12	Maths
Maxwell, B., Connolly, P., Demack, S., O'Hare, L., Stevens, L. & Clague, L. (2014)	0.13	0.22	Reading
Snipes, J., Huang, C.-W., Jaquet, K., and Finkelstein, N. (2015)	0.43	-	Maths
Torgerson, D., Torgerson, C., Jefferson, L., Buckley, H., Ainsworth, H., Heaps, C. & Mitchell, N. (2014)	0.24	0.17	Writing
Effect size (weighted mean)	0.18		

The right hand column provides detail on the specific outcome measures or, if in brackets, details of the intervention or control group.

Meta-analyses abstracts

2 Cooper, H, Charlton, V, Muhlenbruck, M., Borman, G.D. (2000)

Summer schools serve multiple purposes for students, families, educators, and communities. The current need for summer programs is driven by changes in American families and by calls for an educational system that is competitive globally and embodies higher academic standards. A research synthesis is reported that used both meta-analytic and narrative procedures to integrate the results of 93 evaluations of summer school. Results revealed that summer programs focusing on remedial or accelerated learning or other goals have a positive impact on the knowledge and skills of participants. Although all students benefit from summer school, students from middle-class homes show larger positive effects than students from disadvantaged homes. Remedial programs have larger effects when the program is relatively small and when instruction is individualized. Remedial programs may have more positive effects on math than on reading. Requiring parent involvement also appears related to more effective programs. Students at all grade levels benefit from remedial summer school, but students in the earliest grades and in secondary school may benefit most. These and other findings are examined for their implications for future research, public policy, and the implementation of summer programs. Based on these results, our recommendations to policy makers are that summer programs (a) contain substantial components aimed at teaching math and reading and (b) include rigorous evaluations, but also (c) permit local control of curricula and delivery systems. Funds should be set aside to foster participation in summer programs, especially among disadvantaged youth. Program implementers should (a) begin summer program planning earlier in the year, (b) strive for continuity of staffing and programs across years, (c) use summer school in conjunction with summer staff development opportunities, and (d) begin integrating summer school experiences with those that occur during the regular school year.

5 *Kidron, Y., & Lindsay, J. (2014)*

Interest in increased learning time programs delivered beyond the regular school day has grown (Stonehill et al., 2011). These programs provide additional instruction in English language arts, math, and other subjects and are meant to enhance students' academic interests and success (Redd et al., 2012). The most common approaches include out-of-school programs (before- and after-school and weekend programs); summer school; schools with longer school days, weeks, or years; and year-round schools. Numerous evaluations have tested the effects of such programs on students' academic knowledge, study skills, social skills, and motivation to learn. This meta-analysis examined more than 7,000 studies, sorted them by scientific rigor, and identified 30 that used research designs capable of yielding strong evidence about the outcomes of increased learning time. In some cases the 30 studies found that increased learning time programs had a positive effect on student outcomes; in other cases the studies found no positive effect. This suggests that no single increased learning time program fits the needs of all students. The information in this report should help practitioners decide how best to select and implement an increased learning time approach. The programs were found, for example, to improve academic outcomes when instruction was led by certified teachers. Ten studies reported that literacy instruction was delivered by certified teachers and found a statistically significant positive effect on literacy achievement. Five studies reported that math instruction was conducted by certified teachers and found a statistically significant positive effect on math achievement. In both cases, however, the effects were small. Programs that used a traditional instruction style (with the teacher responsible for the progression of activities and students following directions to complete tasks) improved academic outcomes in literacy (nine studies) and math (four studies). The effects were small for both subjects. Programs that used an experiential learning instruction style (such as hands-on, inquiry-based instruction) improved student social-emotional skill development (for example, self-confidence and self-management; four studies). Again, the effects were small. The findings also show that increased learning time can benefit students at risk of academic failure. Increased learning time improved the literacy achievement of students performing below standards (three studies). Increased learning time also promoted the social-emotional skill development (for example, emotional well-being and externalizing behavior) of students with attention deficit/hyperactivity disorder (three studies). Programs that targeted specific student subgroups (such as struggling readers) and used explicit instruction to teach well specified skills tended to show a positive effect on student outcomes. Practitioners who wish to use increased learning time programs might therefore set goals and design activities based on a deep understanding of student needs and interests. Because this study examined the data one category at a time, it does not provide information on potential interactions among implementation features, such as how the effectiveness of experiential learning, might vary with teacher-student ratio or the frequency and duration of classes. As the evidence base grows, studies like this one will be able to assess the effects of increased learning time using multiple factors at the same time.

7 *Kim, J. S., & Quinn, D. M. (2013)*

This meta-analysis reviewed research on summer reading interventions conducted in the United States and Canada from 1998 to 2011. The synthesis included 41 classroom- and home-based summer reading interventions involving children from kindergarten to Grade 8. Compared to control group children, children who participated in classroom interventions, involving teacher-directed literacy lessons, or home interventions, involving child initiated book reading activities, enjoyed significant improvement on multiple reading outcomes. The magnitude of the treatment effect was positive for summer reading interventions that employed research-based reading instruction and included a majority of low-income children. Sensitivity analyses based on within-study comparisons indicated that summer reading interventions had significantly larger benefits for children from low-income backgrounds than for children from a mix of income backgrounds. The findings highlight the potentially positive impact of classroom- and home-based summer reading interventions on the reading comprehension ability of low income children.

8 *Lauer P., Akiba, M., Wilkerson, S.B., Apthorp, H.S., Snow, D., & Martin-Glenn, M.L. (2006)*

Schools and districts are adopting out-of-school-time (OST) programs such as after-school programs and summer schools to supplement the education of low-achieving students. However, research has painted a mixed picture of their effectiveness. To clarify OST impacts, this synthesis examined research on OST programs for assisting at-risk students in reading and/or mathematics. Researchers analyzed 35 OST studies that employed control or comparison groups and met other inclusion criteria. **Meta-analyses** indicated small but statistically significant positive effects of OST on both reading and mathematics student achievement and larger positive effect sizes for programs with specific characteristics such as tutoring in reading. Whether the OST program took place after school or during the summer did not make a difference in effectiveness.

9 *Lewis, C.P. (2004)*

There has been a growing discussion in the fields of education and psychology about the relationship between social skill proficiency and academic excellence. However, the presence of extracurricular involvement as promoting both academic and social development has not been thoroughly explored. The most recent literature syntheses and meta-analyses on extracurricular activity participation were conducted in the 1980s. An updated review and quantitative look at the participation literature is due. The purpose of this study is to integrate participation studies from the 1990s and give summative information as to the impact of extracurricular activity participation on various educational and psycho-social characteristics. Of the 164 identified studies, 41 were included in these meta-analyses. The current analyses produced 6 different activity categories: general extracurricular activity, sports, work and vocational activities, performing arts, pro-social activities, and community-based activities. The current meta-analyses suggest student outcomes were significantly related to general extracurricular activity and pro-social activity participation. General activities and pro-social activities had the most impact on academic achievement, while performing arts and pro-social activities. Participants reported the largest effect on identity and self-esteem related outcomes. Sports and related activities (i.e. Cheerleading) were not as strongly linked to academic achievement indicators as anticipated and student workers had more negative outcomes than any other activity participants. In conclusion, the best outcomes for children and adolescents are brought about through well-built, developmentally appropriate structured activities. Moreover, the academic and social profits of extracurricular activities that have been examined in this study can be used to inform program planning and implementation.

14 *Washington State Institute for Public Policy (2017)*

This analysis includes a variety of summer learning programs for students in grades K-8 in which academic improvement is the main goal, often with a focus on remediation and/or prevention of summer learning loss. The programs encompass a range of models and include both community- and school-provided programs. Some programs offer services beyond academic support, such as enrichment and recreation. Based on the studies in this analysis, a typical program lasts about six weeks. This analysis excludes programs that focus on other goals such as general youth development or job training and programs that combine summer learning programs with additional support during the school year.