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All Work and All Play: Participation in Leisure Activities in Academically Focused Afterschool Programming Is Linked to Better Math Grades

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Abstract

Designed to improve outcomes for children from high-poverty, low-performing schools, the federally funded 21st Century Community Learning Centers (CCLC) program emphasizes academic outcomes. We examined the effects of participation in academic and leisure activities in Michigan 21st CCLC programs on English language arts (ELA) and mathematics grades among seventh- and eighth-grade students. Leisure activities were defined as any nonacademic activity: recreation and social time, physical movement, youth development, arts, and health and nutrition. Results showed that male students, low-income students, and academically at-risk students had lower grades in both ELA and math grades than their counterparts, regardless of other demographic factors or participation patterns. Data from our sample did not reveal any racial differences in ELA and math grades. Being older and having special education status were both associated with lower ELA grades, while English language learners tended to have higher ELA grades. After adjusting for these demographic differences, our study found that the dosage of leisure activities was linked to better math grades, while the dosage of academic activities was not linked to either ELA or math grades. A 10-hour increase in leisure activity time was associated with an increase in the math grade point of approximately 0.02 (A = grade point 4; B = 3), on average. Our study suggests that children from disadvantaged backgrounds might be best served when 21st CCLC programs balance their academic focus with play and leisure activities.

Keywords: 21st Century Community Learning Centers, leisure activity participations, out-of-school time, academic outcomes

The saying, "All work and no play makes Jack a dull boy," summarizes the importance of play for children. The United Nations Convention on the Rights of the Child (1989), Article 31, declares that play is a child's right. Participation in leisure, play, and recreation activities is crucial for positive youth development (Caldwell & Witt, 2011). Leisure activities not only offer youth a break from school demands but also promote mental health and physical fitness (Jussila et al., 2023) and give youth an opportunity to gain essential life skills such as collaboration, time management, and work–life balance (Caldwell & Witt, 2011).

Historically, out-of-school time (OST) programs for children and youth were designed first to keep participants safe after school (Halpern, 2003; Mahoney et al., 2009). For more than a century, afterschool programs run primarily by local and national community-based organizations fulfilled that role while adding youth development activities that enabled young people to develop social and emotional skills while having fun (Halpern, 2003). Academics, other than providing time for homework, was rarely considered (Halpern, 2006).

That mission began to shift with the expansion and evolution of the 21st Century Community Learning Centers (21st CCLC) program, the only federal funding stream for OST programming (Afterschool Alliance, 2021; Halpern, 2003). As its name suggests, 21st CCLC was originally conceived as an out-of-school learning center for all community members. Its 2002 reauthorization under No Child Left Behind narrowed the focus to afterschool programming aimed at improving the academic outcomes of students attending high-poverty, low-performing schools (Afterschool Alliance, 2021). The federal government invested over $1.34 billion in 2022–2023 (Office of Elementary & Secondary Education [OESE], n. d.) through grants to states for OST programming. The stated mission of 21st CCLC is providing "opportunities for academic enrichment, including providing tutorial services to help students, particularly students who attend low-performing schools, to meet the challenging State academic standards" (Title IV, Part B, 2015). Although grantees are also required to "offer students a broad array of additional services" ranging from drug and violence prevention to arts programming (Title IV, Part B, 2015), federal performance reports for 21st CCLC grantees center on improving participants' grades, test scores, and other school outcomes (OESE, 2024)—"a task for which [OST programs] are not well designed," as Akiva et al. (2020) put it. This emphasis on academic intervention in OST programming for low-income students overlooks the importance of children's leisure interests (Philp, 2022).

As state evaluators for Michigan's 21st CCLC program, we conducted research to assess the extent to which both academic and leisure activities affected the academic results on which federal grantees are required to report. Using data reported by 21st CCLC programs in Michigan, we examined the effect of hours participants spent on academics and on "leisure," broadly defined as all nonacademic activities, on students' grades in mathematics and English language arts (ELA), concentrating on students in grades 7 and 8.

Literature Review

Early evidence of the effectiveness of 21st CCLC was mixed, and most budget years see calls for eliminating or reducing funding (Afterschool Alliance, n.d.). However, the relationship between high-quality OST programming for low-income students and improved academic performance is well established (e.g., Jenson et al., 2018; Mahoney et al., 2005; Seitz et al., 2022). The U.S. Department of Education's (2023) annual report on 21st CCLC for 2021–2022 showed that substantial percentages of students improved in the mandated measures: test scores, grades, attendance, in-school suspensions, and engagement in school. Low-income students, in particular, can receive more academic benefit from OST programs than middle- or high-income students (Heath et al., 2022; Morris, 2015). Crosnoe et al. (2015) associated low-income students' consistent participation in OST programs with sustained academic improvement, implying that sustaining students' interest in the activities offered by OST programs is important to program impact.

Benefits of Nonacademic Activities in OST

While quality OST programs are a recognized intervention for students in low-income and underperforming school districts, many researchers and practitioners critique the hyper-fixation on academic interventions as the primary focus for OST activities (e.g., Akiva et al., 2020; Halpern, 2006; Philp & Gill, 2020). Caetano et al. (2024) found that students typically reach a point where academic enrichment activities no longer impact their academic development. Philp (2022) theorizes that deficit thinking in OST program design disadvantages the development of low-income students by overemphasizing academics, as time spent in academic pursuits reduces the amount of time spent in activities that foster participants' individual interests. Programs designed for high-income students often include structured leisure activities and fun, student-directed learning opportunities (Philp & Gill, 2020). Leisure can foster students' interest in niche areas; in turn, these interests can fuel exploration of a subject or career path students had never previously considered (Akiva et al., 2020; Philp & Gill, 2020; Philp, 2022).

In addition to furthering students' interest development, possible benefits of structured leisure in OST programming include supporting the development of their sense of self, confidence, sense of empowerment and engagement, and relationships with other students (Greer et al., 2024). Nonacademic youth-centered OST spaces provide opportunities for young people to develop relationships with caring adults outside of family and school—relationships that foster a host of positive youth development outcomes (Greer et al., 2024; Wu et al., 2016). Structured leisure activities can provide children with an outlet for stress and an opportunity to develop coping strategies (Hutchinson & Robertson, 2012). Building students' social-emotional skills through leisure can also reinforce their academic capacity, as students can

use newfound coping skills and confidence to navigate the uncertainties of school (Hutchinson & Robertson, 2012). OST programs combining social-emotional development and academic interventions can positively impact students' mental well-being; for example, such programs may decrease the likelihood of suspension or expulsion (Jenson et al., 2018) and reduce the incidence of anxiety and depression among students (Metsäpelto et al., 2010). Indeed, participation in any kind of extracurricular activity, including community-based programming, has been associated with less screen time and better mental health among young adolescents (Oberle et al., 2020).

Another argument for leisure activities in OST is related to lack of opportunity during the school day. Most elementary school children have at least one recess period during school, but the incidence of recess declines dramatically starting at grade 6 (National Center for HIV/AIDs, 2015). Recess is less common in urban and low-income schools than in other areas (Council on School Health, 2013). A policy brief published by the American Academy of Pediatrics noted that children who had recess time were more focused when they returned to academic tasks—no matter whether they had spent that leisure time in active play, socialization, or any other activity (Council on School Health, 2013).

A related issue is a dramatic decline in physical activity as children age, a decline that becomes marked in early adolescence (Committee on Physical Activity and Physical Education in the School Environment, 2013; van Sluijs et al., 2021). Worldwide, children from higher-income families were more likely to engage in physical activity than lower-income children (van Sluijs et al., 2021). Opportunities for outdoor play, in particular, are less available to children in predominantly Black or low-income neighborhoods, where safety is a concern and green spaces are scarce (Kepper et al., 2019; Sanders et al., 2023).

Michigan's 21st Century Community Learning Centers

In 2022–2023, the state of Michigan received $37.065 million in federal funding for its 21st CCLC programs (Office of Elementary & Secondary Education, n.d.). With nearly 3% of the federal 21st CCLC budget, Michigan served over 17,000 students across 254 sites statewide. Most sites (84%) served elementary-age children only or elementary and middle school combined (Authors, 2023). Program design varies, but every site provides both academic support and nonacademic enrichment programming, as required by the grant; almost all youth participated in some form of academic activity.

A key difference between school and OST is that young people get to choose whether or not to attend. For elementary age children, that choice is often made by caregivers; in middle school, children are more likely to begin to exercise agency in whether or not to go to the afterschool program on a given day (Akiva & Horner, 2016). Furthermore, most Michigan programs offer choices of activities. For example, after snack and homework time, children may be able to choose between robotics, theater, or literacy support activities.

As evaluators of Michigan's 21st CCLC program, we have seen a consistent pattern in which participation in leisure activities is high for elementary-age children but drops after youth enter middle school (Authors, 2023). This finding is consistent with literature documenting the observation that children entering adolescence face increasing academic pressure and experience decreasing participation in recreation and physical activity (Committee on Physical Activity, 2013; Council on School Health, 2013; van Sluijs et al., 2021). Our study focused on the linkage between leisure participation in Michigan 21st CCLC programs and seventh- and eighth-grade students' ELA and math grades. One reason for the selection of these middle school years is that these are the years in which sites are required to report school grades in ELA and math, not just standardized test scores. More broadly, the confluence of increasing academic pressure and less time for leisure makes grades 7 and 8 a "sweet spot" for exploring the influence of OST leisure on children's physical, social-emotional, and academic development before they enter high school.

Methods

Sample and Data Collection

In the 2022–23 program year, 83 Michigan 21st CCLC programs served 2,234 seventh and eighth graders, according to the state 21st CCLC database. The primary outcomes 21st CCLC sites are required to report for seventh- and eighth-grade students are their school grades in ELA and math. Sites also report on seventh graders' standardized test scores, but eighth graders do not take state standardized tests in ELA or math.

Michigan's 21st CCLC grantees reported both site-level and individual-level information on academic and structured leisure activities in which students participated. Each site provided descriptions of every activity offered. Table 1 summarizes the rubric we devised to classify activities as primarily academic or primarily leisure. In developing the rubric, we began with the categories specified in the 21st CCLC grant (column 1) and then subdivided into more precise categories (column 2) to facilitate coding. For activities that included both academic and leisure components, we used the activity description to decide whether academic or leisure was primary and then designated the other as secondary. The time spent in the activity was then coded as 100% of the primary category and 50% of the secondary category. For example, a 60-minute session that consists entirely of reading instruction and independent reading would be classified as 60 minutes of academic dosage for each child. A 60-minute session that reviews content and vocabulary from the reading and then moves on to discussion of how to present the book as a play and improvisation of a few scenes would be classified as 60 minutes of academic activity *and* 30 minutes of leisure, specifically performing arts. Conversely, a 60-minute basketball session in which the coach has each player calculate statistics such as percentage of successful shots would be coded as 60 minutes of leisure in the form of physical activity and 30 minutes of academic activity. This method of calculating dosage and the categories in

Table 1 were approved by the Michigan Department of Education for the evaluation of its 21st CCLC programs.

Table 1. *Coding of Academic and Leisure Activities*

21st CCLC Activity Type	Session Type*
Academic	
Subjects: ELA, math, science, engineering, history, social studies, fine arts, second language, more	Academic enrichment: enhancing academic skills, preferably through play- or project-based activities
	Homework help/tutoring
Leisure	
Technology	Computers or computer programs
	Video & media
Arts	Arts & crafts
	Music
	Theater
	Dance
	Poetry
	General arts
Physical movement	Team sports
	Non-team sports
	General sports
Recreation & social	Recess / physical free play
	Games
	Social events, camp, fun days
Youth development	Career development
	Social emotional learning
	Community service
	Conflict resolution
	Resistance and risk prevention
	Leadership development
	Safety, physical health
	Adult mentoring
Food & nutrition	Food & nutrition education (not including snack or meal time)

* The coding rubric is used for all Michigan CCLC programs. This summary lists only activity and session types that apply to seventh- and eighth-grade students.

Analysis

To examine the extent to which participation in leisure activities was associated with improvement in ELA and/or math grades, we employed the multilevel regression model for this analysis, with level 1 being individual participants and level 2 being 21st CCLC sites. We used the equivalencies shown in Table 2 to transform end-of-year letter and numeric grades reported by 21st CCLC sites into ordinal variables expressed as grade points ranging from 0 (F) to 4 (A+). Equation (1) below presents the model that was considered:

$$\begin{aligned} Y_{ij} = \beta_0 &+ \beta_1 AcademicHrs + \beta_2 LeisureHrs \\ &+ \beta_3 AgeinYrs + \beta_4 Female + \beta_5 ELL \\ &+ \beta_6 AcademicRisk \\ &+ \beta_7 FreeReduced\_Lunch \\ &+ \beta_8 SpecEd + \beta_9 White \\ &+ \beta_{10} Hispanic\_Latino \\ &+ \beta_{11} OtherRace \\ &+ \nu_{0j} \end{aligned} \quad (1)$$

where Y_{ij} represents the grade level (ELA or math) for the i[th] student in the j[th] site and ν_{0j} captures the deviations at the site level.

The model was implemented using the lavaan package in RStudio (RStudio Team, 2020) software. Cases with missing values were handled using the full information maximum likelihood (FIML) approach, based on the assumption that values were missing at random. Child demographic variables—age, gender, race, ELL status, academic risk status, free or reduced-priced lunch status, and special education status—were included as covariates and moderators in the model. The Michigan 21st CCLC evaluation defines academic risk status as a grade average lower than 2.5 (see Table 2) or test scores, where available, lower than "proficient." We collapsed the race/ethnicity categories into four groups – White, Black, Hispanic/Latinx, and other – because the numbers of students in the "other" groups were too small to be examined independently. We fixed Black, the largest category, as the reference group. Because participation in academic learning is expected to contribute to academic outcomes, the total number of hours spent in academic

activities was also included in the model. The main independent variable is leisure dosage, which is the sum of all hours participants spent in leisure activities during the program year.

Table 2. *Grade Conversion into Continuous Variables*

Alphabetical Grade	Numeric Grade	Grade Point
A	90 or above	4
A- or B+	85 – 89	3.5
B	80 – 84	3
B- or C+	75 – 79	2.5
C	70 – 74	2
C- or D+	65 – 69	1.5
D	64 – 60	1
D-	55 – 59	0.5
F	54 or below	0

To avoid collinearity, we included academic and leisure dosages in the analysis, but not the total dosage. Academic participation is required for all Michigan 21st CCLC program participants; therefore, academic dosage is highly correlated with total dosage. Also, to improve model estimation and convergence, we rescaled the academic and leisure hours by dividing all values by 10 before adding them to the model.

Results

Table 3 provides a descriptive summary of the covariates and the outcome variables. Of the 2,234 students in our sample, 1,328 students from 49 sites had grade records for ELA, math, or both. The average grades in both ELA and math fall into the C range for the seventh- and eighth-grade students in our sample. The average number of hours students spent in academic activities during the program year was about 43; students spent somewhat more time in leisure activities, with an average of around 58 hours during the year. The standard deviations for these variables are within acceptable bounds. The skew and kurtosis levels fall within normal ranges for the outcome variables.

In keeping with the mission of 21st CCLC, large proportions of these 2,234 students were academically at risk and qualified for free or reduced-price lunch. The sample was evenly distributed by gender, and less than one-third of participants identified as White. Of the students in the sample, one-fifth received special education services; only a small proportion were English language learners (ELLs). The average age of the study participants was 13.6 years old as of September 1, 2023. These demographics are roughly equivalent to those of the total population of seventh- and eighth-grade students in Michigan 21st CCLC.

Table 3. *Description of Model Variables*

Variable	n	Mean	%	Min	Max	SD	Skew	Kurtosis
ELA grade	1282	2.2	-	0	4	1.39	-0.28	-1.25
Math grade	1267	2.1	-	0	4	1.38	-0.21	-1.25
Academic dosage in hrs/yr	2234	43.3	-	0	233	42.35	1.46	2.11
Leisure dosage in hrs/yr	2234	58.3	-	0	417	61.84	1.56	2.42
Age in years	2232	13.6	-	9	18	0.84	0.44	1.32
Female	1129	-	50.5	0	1	-	-	-
English language learner	146	-	6.7	0	1	-	-	-
Academically at risk	1895	-	91.8	0	1	-	-	-
Free & reduced-price lunch	1880	-	86.2	0	1	-	-	-
Special education	431	-	20.2	0	1	-	-	-
Race								
White	618	-	29.0	0	1	-	-	-
African American/Black	1022	-	47.9	0	1	-	-	-
Asian	31	-	1.5	0	1	-	-	-
Hispanic/Latino	271	-	12.7	0	1	-	-	-
Arabic/Middle Eastern	74	-	3.5	0	1	-	-	-
American Indian/Native Alaskan	4	-	0.2	0	1	-	-	-
Native Hawaiian/Pacific Islander	2	-	0.1	0	1	-	-	-
Multiracial	67	-	3.1	0	1	-	-	-
Another race	45	-	2.1	0	1	-	-	-

For both academic and leisure dosages, Table 4 shows unstandardized regression estimates for ELA grades, and Table 5 shows results for math. Initial models included two-way interactions between leisure hours and the demographic variables, but these were dropped due to lack of statistical significance. Overall, male students, low-income students, and academically at-risk students had lower grades in both ELA and math than their counterparts, regardless of other demographic factors or participation patterns. Data from our sample did not reveal any racial gaps in ELA and math grades. Students' age, primary language, and special education status were not significant predictors of their math grades but had significant effects on their ELA grades: being older and having special education status were both associated with lower ELA grades, while ELLs tended to have higher ELA grades.

Examination of the effects of academic dosage and leisure dosage on grades unexpectedly shows that academic dosage is *not* associated with better ELA or math grades. That is, more hours spent in academic activities in 21st CCLC programs did not correlate with students' grades in either subject. Similarly, the number of hours participants spent in leisure activities did not correlate with their ELA grades.

However, the results in Table 5 show that leisure dosage is positively associated with higher math grades among seventh and eighth graders. Because the number of leisure hours was rescaled by a factor of 10 before adding to the model, the coefficient of 0.021 means that a 10-hour increase in a year in leisure activity time is associated with approximately 0.02 increase in the math grade.

Remarkably, these effects hold across all demographic groups. No matter their gender, race/ethnicity, income, or academic classification, students across the board showed better math grades when they had more leisure hours in OST.

Table 4. *Fixed Effects Estimates for Regression of English Language Arts Grade on Leisure Dosage*

Variable	Estimate	S.E.	z-value	p-value
Intercept	4.818	0.680	7.081	0.000
Academic dosage	0.004	0.014	0.260	0.795
Leisure dosage	**0.018**	**0.010**	**1.844**	**0.065**
Age in years	-0.132	0.049	-2.717	0.007
Female	0.320	0.074	4.306	0.000
English language learner	0.486	0.159	3.050	0.002
Academically at risk	-1.068	0.133	-8.049	0.000
White	0.172	0.112	1.539	0.124

Hispanic/Latino	-0.104	0.133	-0.777	0.437
Other race	-0.011	0.145	-0.076	0.939
Free & reduced-price lunch	-0.277	0.103	-2.677	0.007
Special education	-0.237	0.096	-2.465	0.014

Table 5. *Fixed Effects Estimates for Regression of Math Grade on Leisure Dosage*

Variable	Estimate	S.E.	t-value	p-value
Intercept	3.036	0.680	4.468	0.000
Academic dosage	0.009	0.015	0.636	0.524
Leisure dosage	**0.021**	**0.010**	**2.107**	**0.035**
Age in years	0.006	0.049	0.131	0.896
Female	0.192	0.074	2.586	0.010
English language learner	0.232	0.161	1.440	0.150
Academically at risk	-1.256	0.135	-9.286	0.000
White	-0.033	0.113	-0.294	0.769
Hispanic/Latino	0.048	0.134	0.361	0.718
Other race	0.052	0.145	0.356	0.722
Free & reduced-price lunch	-0.266	0.103	-2.594	0.009
Special education	-0.042	0.095	-0.439	0.660

Discussion

The federal 21st CCLC grant requires academic participation for all students, and grantees' performance is measured primarily by academic outcomes. Using Michigan's 21st CCLC as the context, this paper examines the effects of academic and leisure participation on ELA and math grades among seventh- and eighth-grade participants. After controlling for demographic differences, this study found that leisure dosage was associated with higher math grades, while academic dosage was not correlated with students' ELA or math grades. The implication is that a balance of leisure and academic activities could link to better academic outcomes. Our study found that participating in additional 10 hours of leisure activities in a program year was linked to an increase of 0.02 in a student's math grade, on average.

The data revealed differences in participants' math and reading grades by demographic categories: male and low-income students had lower grades in both ELA and math. No gap emerged between White and non-White students' ELA and math grades. ELLs tended to have higher ELA grades. Students classified into special education and those who were older had lower ELA grades. For all groups, more leisure time in OST added up to higher math grades, though there was no significant effect on ELA grades.

Our finding about the effect of leisure time on math grades aligns with current calls for balance between academic and leisure activities in OST (e.g. Halpern, 2006; Philp & Gill, 2020), supported by empirical evidence of the importance of free time and of programming in the arts, sports, health, and social-emotional development. The American Academy of Pediatrics found that children could focus better on academic tasks after a recess break—but few children in grades 7 and 8, especially those in low-income neighborhoods, have recess time during school (Council on School Health, 2013). Like most people of any age, middle-schoolers need leisure time as an outlet to decrease stress; leisure activities can also help young people develop coping skills (Hutchinson & Robertson, 2012). The right level of participation in OST programs that combine academic and leisure can improve students' social-emotional health (Metsäpelto et al., 2010) and school behavior (Jenson et al., 2018).

Furthermore, Philp (2022) argues that the emphasis on academic activities in OST programming is a symptom of deficit thinking targeting students from low-income and minoritized backgrounds. Leisure activities in OST enable students to explore their interests in a fun, self-driven way (Akiva et al., 2020; Philp & Gil, 2020; Philp, 2022). Akiva et al. (2020) believe that the opportunity to engage in "interest driven activities" enables participants "to develop personal identities that are more aligned with [students'] cultural or ethnic backgrounds" (p. 11). Leisure activities that introduce OST participants to new interests or new ways of learning can motivate disengaged students to

reengage with classroom learning (Akiva et al., 2020; Philp & Gil, 2020).

The seventh and eighth graders in our sample did spend more afterschool time in leisure activities than in academic pursuits. This finding is partly a function of the ability of programs to combine academic and leisure goals in a single activity. Our finding suggests that balancing academic pursuits with leisure activities may have a positive effect on at least one academic outcome. Ultimately, the central problem with the emphasis on academic learning in 21st CCLC programming may be a matter of opportunity cost. Caetano et al. (2024) found that academic enrichment activities reach a point of diminishing returns when they compete with other priorities, such as family responsibilities, and replace vital activities such as recreation and sleep.

Limitations

One limitation of our study is that missing data were treated as missing at random in the analysis, on the assumption that the probability of missing data can be reasonably explained by the other measured variables in the data. We do not have any reason to suspect a systematic pattern in the missing values; however, if such a pattern exists, the results may have been affected.

The quality of the data on academic and leisure activities in Michigan 21st CCLC sites is largely outside our control. The data were reported by 21st CCLC sites. Although site coordinators and data entry personnel receive guidance about how to describe their activities, time pressures and other constraints may affect the accuracy of those descriptions.

Another aspect of the study that can be seen as a limitation is the decision to report grades but not test scores, which many see as more reliable. The reason is that standardized tests in ELA and math are administered in Michigan to students in grade 7 but not grade 8. Another outcome of interest would have been measures of behavioral development, such as school suspensions or teacher ratings of classroom behavior. We did not include such measures because our interest was specifically the extent to which leisure activities could be related to academic outcomes, the primary set of outcomes on which 21st CCLCs are judged.

A limitation with more impact on conclusions is that the study findings do not support causal inferences. We have observed a linkage between higher leisure dosage and better math grades, but we cannot suggest that more leisure participation *causes* better math grades. One possibility is selection bias: Students who are more competent with math might be the ones who are more active in their leisure pursuits during OST.

Furthermore, we studied one cohort of students in two grade levels for one year in one state's 21st CCLC program. Studies of the effects of leisure and academic activities on the grades of seventh and eighth graders in other 21st CCLC programs would improve confidence in our conclusions.

Implications for Policy and Practice

As part of a larger national initiative to address disparities in educational outcomes for disadvantaged young people, 21st CCLC programs are designed to provide a mix of academic and nonacademic activities to bolster the academic outcomes of students from low-income backgrounds (Title IV, Part B, 2015). In their nearly 30-year history, 21st CCLC programs have emphasized academic enrichment activities to improve the academic performance of students in underperforming schools (Holstead & Hightower, 2011; Williams et al., 2021). However, overemphasis on academic interventions at the expense of leisure activities could reduce the impact of 21st CCLC programming on participants' academic and social-emotional growth. Currently, the federal Office of Elementary and Secondary Education collects limited data on nonacademic activities but does not publish data on leisure activity participation in 21st CLCC programs (U.S. Department of Education, 2023). All outcomes on which sites and grantees are required to report are either academic outcomes such as grades and test scores or school-related behavioral outcomes such as attendance and suspension rates. Our study suggests that leisure activity participation in Michigan 21st CCLCs may be more closely associated with math grades than participation in academic activities alone. One implication for policy and practice is that 21st CCLC programming should intentionally incorporate ample opportunities for socialization, physical activity, arts and sports programming, civic engagement, leadership, and other youth development activities alongside (and perhaps sometimes instead of) activities focused specifically on building academic skills. OST programming that balances leisure and academic activities may be the best way to address students' academic and social-emotional needs.

Practically speaking, one potent way to promote more nonacademic activities such as physical activities or youth development activities in 21st CCLC programming might be to require sites and grantees to report on additional student outcomes beyond academically focused measures. For example, the Office of Elementary and Secondary Education has identified resources for measuring social-emotional learning in school settings (Stoker & Borman, 2022). Similar resources might be deployed to measure social-emotional outcomes in 21st CCLC programs. As the business cliché goes, "What gets measured gets managed." The requirement that 21st CCLC grantees and sites report on academic outcomes gives them a strong incentive to emphasize academic programming.

Avenues for Future Research

Our study offers a rare glimpse into how the structure of government-funded OST programs impacts students' academic outcomes. It helps to fill the gap in empirical research on how leisure intersects with 21st CCLC programming. Because of its importance in policy discussions and cost to the federal government, examining 21st CCLC can help differentiate its impact from the impact of other programs and suggest ways to improve its design. Our study involves one set of students in one year in one state's 21st CCLC program. More empirical studies that examine the impact of leisure activities on academic

outcomes are needed. The impact on social-emotional outcomes also deserves attention. Findings in both areas could add to the field's knowledge and help to inform policy and program decisions.

In addition to replicating designs similar to ours in other states' 21st CCLC programs with other cohorts of students, other future research could take a more granular approach to examine different types of leisure activities. For example, some researchers have found that sports and other physical activity can have a different effect from other nonacademic activities on academic outcomes (Covay & Carbonaro, 2010; Heath et al., 2022). Other studies could examine other types of nonacademic structured activities, from arts programming to leadership development and civic engagement activities, and how they affect both academic and social-emotional indicators. Further research on the effect of physical activity on 21st CCLC participants could suggest changes to program design to better support students' academic outcomes. Another avenue for further understanding is examining how 21st CCLC site locations and community determinants of child well-being affect the distribution and impact of leisure activities in 21st CCLC programs.

Many avenues remain for research into the distribution and impact of leisure activities in 21st CCLC programs nationwide. Our finding that OST leisure activities had more connection with one academic indicator than academic activities did should help motivate other researchers to explore some of these avenues. If other studies find that leisure activities have more effect than academic activities alone, 21st CCLC policies may need to shift to better support the academic and social-emotional development of underserved youth.

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