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[See table of contents](#)

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Article abstract

Can summer programs, as remedial supplements to regular schooling, extend learning opportunities and other benefits to disadvantaged students? To frame this question, we compare logics from “social reproduction” and “partial compensation” perspectives, and then apply them to a large mixed method study of four kinds of summer programs in Ontario. Drawing on quantitative data on over 10,000 students and qualitative data from interviews with over 200 teachers and parents, we examined patterns of student recruitment and participation, social valuations, and academic outcomes. We found that all summer programs successfully recruited disadvantaged students without stigmatizing them, and raised their average achievement without widening pre-existing gaps. We interpret these findings as being consistent with the “partial compensation” perspective, and discuss related policy implications that include COVID-19 learning recovery strategies.



Reproducing or Reducing Inequality? The Case of Summer Learning Programs

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Abstract

Can summer programs, as remedial supplements to regular schooling, extend learning opportunities and other benefits to disadvantaged students? To frame this question, we compare logics from “social reproduction” and “partial compensation” perspectives, and then apply them to a large mixed method study of four kinds of summer programs in Ontario. Drawing on quantitative data on over 10,000 students and qualitative data from interviews with over 200 teachers and parents, we examined patterns of student recruitment and participation, social valuations, and academic outcomes. We found that all summer programs successfully recruited disadvantaged students without stigmatizing them, and

raised their average achievement without widening pre-existing gaps. We interpret these findings as being consistent with the “partial compensation” perspective, and discuss related policy implications that include COVID-19 learning recovery strategies.

Keywords: summer programs, summer learning, achievement gaps, educational stratification

Résumé

Les programmes d'été, comme activités complémentaires de rattrapage, peuvent-ils offrir des possibilités d'apprentissage ou d'autres avantages aux élèves défavorisés ? Pour comprendre cette question, nous comparons les logiques des perspectives de « reproduction sociale » et de « compensation partielle », pour les appliquer à une vaste étude mixte portant sur quatre types de programmes d'été offerts en Ontario. À partir de données quantitatives provenant de plus de 10 000 élèves et de données qualitatives issues d'entrevues avec plus de 200 enseignants et parents, nous avons examiné les tendances de recrutement et de participation des élèves, de l'appréciation sociale des programmes et des résultats scolaires. Nous avons constaté que tous les programmes d'été recrutaient bien des élèves défavorisés sans les stigmatiser, et qu'ils étaient associés à des augmentations de leur rendement moyen sans creuser les écarts préexistants. Nous interprétons ces résultats comme soutenant la perspective de « compensation partielle » et discutons des implications politiques connexes.

Mots clés : programmes d'été, apprentissage d'été, écarts de réussite, stratification scolaire

Introduction

Student achievement gaps along socio-economic lines have persisted for most of a century (e.g., Bradbury et al., 2015; Caro et al., 2009; Coleman et al., 1966; Conwell, 2021). To explain these gaps, “Social Reproduction” theories, described further in the next section, point to organizational biases in mainstream public schools such as those rooted in curricula, instruction, and teacher dispositions (see, for example, Bourdieu & Passeron, 1977; Bowles & Gintis, 1976). Other perspectives show different understandings of achievement gaps. “Summer learning” researchers, for instance, look mainly to disparate learning opportunities outside of school to understand the emergence of achievement gaps. Those researchers have used longitudinal data to compare rates of student learning across different seasons in order to trace the unfolding of gaps over time. That research consistently shows that some students continue to gain literacy and numeracy skills during the summer months while others suffer learning losses, triggering faster growth of achievement gaps during periods when children are not in school (e.g., Alexander et al., 2007, 2016; Atteberry & McEachin, 2021; Downey et al., 2004, 2008; von Hippel et al., 2018).¹

Summer learning researchers explain these seasonal patterns by pointing to opportunities to learn that differ across school versus non-school environments (Downey, 2018; Gershenson, 2013). Schools, they reason, serve to equalize access to resources like professional teachers, structured lessons, supplies such as books and computers, and supportive peers. Non-school environments, conversely, expose children to a far more disparate array of learning opportunities, with affluent children tending to have greater access to relevant resources. Summer learning researchers reason that schools serve to equalize learning resources, and thereby partially compensate for disparate learning opportunities across non-school environments. They argue that while schools do not fully equalize achievement, they do mitigate the impacts of extended periods of non-school time, like preschool years

1 Summer learning researchers are sometimes accused of prioritizing “deficit thinking” over “asset thinking” (e.g., Zhao, 2021). However, we reject this “deficit-asset” binary, believing it distorts research, relies on semantics, and fails to offer alternate interventions that are demonstrably effective (see Davies & Aurini, 2021). Some criticize that summer programs can demoralize their participants (e.g., Zhao, 2021) but do not present any evidence for such claims. Over the many years that we studied summer learning programs across multiple Ontario communities, we did not encounter a single parent, child, or teacher who voiced any similar criticism.

and summers, and slow the emergence of achievement gaps that would otherwise materialize (von Hippel et al., 2018).²

Summer learning programs have been touted as supplementary interventions that can reverse summer learning losses and narrow achievement gaps (Alexander et al., 2016). Several meta-analyses have evaluated their impacts and show that those generally have positive though sometimes modest or mixed effects (e.g., Aurini & Davies, 2010, 2011, 2012, 2013; Cooper et al., 1996; Davies & Aurini, 2013; Lynch et al., 2021; McCombs et al., 2020). However, for Canadian educational researchers, the existing literature that evaluates summer interventions has at least three limitations.

First, few evaluations of summer programs are holistic. Most focus only on student achievement, leaving unexamined other important aspects of those programs, such as their recruiting methods and the perceptions and experiences of teachers, parents, and attendees. Virtually no evaluations have sizeable qualitative components that supplement their quantitative analyses. For instance, programs could plausibly provide students with enjoyable experiences but not raise their achievement, or vice versa. This lack of mixed methodologies for evaluating these programs can be important for their sustainability, since stakeholders may wish them to demonstrate a variety of tangible benefits.

Second, these evaluations tend not to be guided by broader sociological frameworks that might pose a fuller range of research questions. Summer learning research is premised on a generic “faucet theory” that links seasonal variations in student achievement to learning opportunities (Alexander et al., 2016; Condron et al., 2021; Passaretta & Skopek, 2021). Our theoretical contribution is to conceive summer learning programs as supplementary extensions of public schooling, and thereby set them within a wider theory of educational inequality that opens novel lines of investigation. For instance, we probe whether summer programs might have negative unintended consequences, like inadvertently stigmatizing their attendees or benefitting some students more than others, or positive consequences, like boosting confidence and integration into the school community. As we elaborate below, our framework generates hypotheses about stakeholders’

2 Summer learning researchers focus on *overall* variation in achievement across *all* students, as well as gaps by broad social categories like socio-economic status, race, and gender. An older generation of American researchers found that SES and racial gaps widened during the summer months (e.g., Alexander et al., 2007), while a newer generation, using different test score metrics, has mixed findings on the timing of those gaps (e.g., Atteberry & Mangan, 2020; Kuhfeld et al., 2020; Quinn et al., 2016; von Hippel & Hamrock, 2019).

perceptions of summer programs and their patterns of participation, as well as students' academic outcomes.

Third, there is a need for home-grown evaluations of Canadian summer programs. To our knowledge, no other evaluations of Canadian programs exist, and American evaluations have limited generalizability to Canadian settings. While American evaluations can inform Canadian research, their student populations, social settings, and standards of achievement can differ markedly (see Bradbury et al., 2015; Davies & Aurini, 2013).

This article aims to address these three limitations. It adapts logics from two broad theories of educational stratification to generate a holistic set of hypotheses about summer programs, presents a large Ontario-based, mixed method evaluation of four kinds of summer learning programs, and presents both qualitative and quantitative findings to address those hypotheses. We conclude by discussing the relevance of this research for COVID-19 school shut-downs and the potential benefits of including summer programs as part of a broader suite of learning recovery strategies.

Theoretical Framework

In this section we adapt the logics of social reproduction and partial compensation theories to consider whether or not Ontario's summer programs actually recruited disadvantaged or advantaged students; were viewed by students, teachers, and parents as stigmatizing or uplifting; and boosted achievement among various groups of students.

Applying Social Reproduction Theory to Summer Programs

In the 1970s, social reproduction theorists argued that mass schooling generally served to generate and/or maintain unequal outcomes by social class (e.g., Bourdieu & Passeron, 1977; Bowles & Gintis, 1976). Our review of that theory highlights its analyses of remedial school structures. Social reproduction theory identified several mechanisms by which remedial structures could perpetuate educational stratification.

The first mechanism was provided by school opportunity structures. Social reproduction theorists saw any kind of remedial structure—vocational tracks, ability groupings, and supplementary programs—as necessarily limiting opportunities of those consigned to lower ranks in those structures (Bowles & Gintis, 1976). They saw remedial

programs as functioning to warehouse lower-performing students rather than to raise their learning, and to allocate students from lower socio-economic status (SES) disproportionately to them. Almost a half-century later, this longstanding tenet of social reproduction theory continues to be invoked, such as in repeated calls to destream schools (e.g., Clandfield et al., 2014).

The second mechanism was provided by social valuations of the lower tiers of remedial structures. Social reproduction theories noted that a range of actors subtly stigmatized lower tiers, which in turn set in motion various labelling processes. Bourdieu, for instance, claimed that teachers tended to “misrecognize” working class students’ cultural traits as clues of their academic potential (Bourdieu & Passeron, 1977). His idea drew on a tradition of labelling theory that portrayed teachers as using stereotypes about working-class and/or minority children’s appearances, mannerisms, and vocabulary as indicators of their innate ability (e.g., Cicourel & Kitsuse, 1977; Rist, 1977; Wineburg, 1987). According to this theory, teachers lowered their expectations for those students, who in turn internalized those expectations, becoming demoralized and fatalistic. That process was seen to generate a self-fulfilling prophecy that ultimately led to lower student achievement. Decades later, similar arguments continue to be advanced under the rubric of social reproduction theory (e.g., Copur-Gencturk et al., 2020; Gibson et al., 2017; Gillborn, 2015; Hornstra et al., 2010; Parekh et al., 2018; but see DeRoche, 2015). For our purposes, social reproduction theory highlights an important and plausible unintended consequence: that negative valuations of a remedial tier can subtly encourage teachers to lower their expectations, which in turn can demoralize students and generate a self-fulfilling prophecy of lowered achievement.

The third mechanism was generated by the greater capacity of advantaged families to navigate schooling successfully (for an overview, see Aurini & Hillier, 2020). In a classic theory, Boudon (1974) noted that school systems forced families to make key decisions when students transitioned across certain grade levels or streaming tiers. He noted that higher socio-economic status (SES) families tended to have more resources to gain knowledge about school systems and act in ways that would provide better opportunities for their children. In more recent years, social reproduction theorists like Lareau (2011) have adapted that reasoning to contemporary educator cultures that tend to welcome more parent involvement and decision making. Her work on various home advantages and parenting logics suggests that educated middle-class parents tend to have greater resources

by which they align with educational reward structures and seize attractive schooling options. Related studies show that any remedial programs that get positively valued and are seen to fetch academic advantages tend to be sought by upper middle-class parents (e.g., Demerath, 2009; DeRoche, 2015; Ong Dean, 2009). Conversely, those parents are better positioned to avoid those educational options that may be potentially stigmatizing.

We next apply these three mechanisms to ponder whether summer learning programs could reproduce educational inequalities, reasoning that a series of unintended consequences could undermine the intent of those programs. First, we reason that summer programs represent a type of remedial structure. As described below, officials at Ontario's Ministry of Education expressly targeted lower-performing boards, schools, and students for their summer programs. Those programs were premised on notions of summer learning loss—that disadvantaged students will tend to fall behind when out of school—and targeted those seen to be in need of an educational supplement. Second, we reason that given their remedial mandate, summer programs could be inadvertently stigmatizing. Teachers may have recruited students more by their SES than by their academic needs. By targeting “underachievers,” those programs may have also inadvertently gained a sour reputation that could demoralize their participants. Third, and reversing the second point's logic, summer programs could have plausibly received *positive* social valuations as free and effective supplements. As such, it is plausible that already-advantaged families may have sought them out, believing they could provide benefits. If indeed the case, students with previously higher grades and/or with highly educated parents may have benefited more from the summer programs and raised their test scores more than their less advantaged classmates.

Thus, adapting mechanisms embedded in social reproduction theory to summer programs, we hypothesize the following:

- Recruiters may have disproportionately targeted lower-SES students more than students with lower prior grades;
- As remedial structures, programs may have been negatively valued and stigmatizing;
- If those programs were positively valued, they may have disproportionately enrolled socio-economically affluent or academically successful students; and
- Previously advantaged students would have received greater learning gains from participating in the programs.

Partial Compensation for Existing Inequality

Taking a very different line of analysis, summer learning researchers reason that, on average, schools systems have mechanisms that serve to level learning-related resources among students from highly disparate backgrounds. Funding formulae, teacher training, and standardized curricula tend to equalize school-based learning resources. Conversely, children's non-school environments—households and neighbourhoods—lack any comparable mechanism. While schools do not come close to equalizing learning outcomes, summer learning researchers contend that they partially compensate for resource disparities in non-school environments (Alexander et al., 2007; Downey et al, 2004; Downey, 2018). Adapting this logic to summer programs, the partial compensation perspective would advance several hypotheses. First, hypothetically teachers would use their professional judgement when recruiting students, such that participation would be better predicted by students' prior academic performance than by their socio-economic background. Second, since summer programs are compensatory supplements that aim to extend learning opportunities while being voluntary and free of charge, those programs should generate positive valuations among an array of stakeholders. Third, this perspective would hypothesize that no particular group of attendees would benefit disproportionately from those programs. Adapting this logic to summer programs, the partial compensation approach would be based on the following hypotheses:

- Teacher recruitment will be based on student academic need, not social background;
- Teacher and parents will deem summer programs to be academically uplifting, not stigmatizing;
- Programs will improve learning outcomes; and
- Neither disadvantaged nor advantaged students will disproportionately benefit from the programs.

This article embeds these hypotheses within a holistic set of research questions: (1) What kinds of students participated in summer programs? (2) How did teachers and families value those programs? (3) Did those programs boost academic outcomes? and (4) Did the programs benefit any particular set of students? We address these questions using robust data from a large-scale, mixed method study of summer literacy and numeracy programs in Ontario, described in the next section.

Methods

Research Context

Our data came from the Ontario Summer Learning Program (2010 to 2015), the largest study of its kind conducted outside of the United States (for details, see Aurini & Davies, 2010, 2011, 2012, 2013). Those summer programs were funded by Ontario's Ministry of Education, which mandated school boards to provide 45 hours of literacy or numeracy instruction over three to four weeks, generally for four to six hours per day, and to provide recreation opportunities (e.g., sports, crafts). Many programs also provided healthy snacks and lunches. Those programs did not aim to replicate regular school-year classrooms, but to instead provide a camp-like atmosphere. They were tuition-free, staffed by certified teachers, and served students in Grades 1 to 3. Student–teacher ratios were capped at 15:1.

Program Recruitment

Students were recruited to those programs through a sequenced and top-down strategy. The Ministry initially solicited selected school boards to ensure regional and linguistic coverage throughout the province, prioritizing those scoring below average on Ontario's reading or math tests (during the years after we collected data, almost all provincial boards eventually participated). Boards in turn selected schools with concentrations of academically disadvantaged students, interested principals, and sufficient space. In 2010, 72% of those chosen schools scored at or below the provincial average for Grade 3 reading and math. While all students in selected grades could attend, teachers were asked to invite children who would benefit from a summer program, but were not given explicit criteria such as grade or test score cut-offs. When demand for programs exceeded capacity, administrators usually added extra classes rather than implement a lottery system for admissions. No interested students were turned away, including those with high prior grades.

Quantitative Design, Data, and Analysis

Between 2010 and 2013, we were asked to design a study to evaluate those programs. Our study spanned two languages (English and French), two academic domains (Literacy and Numeracy), and several cohorts (2010, 2011, 2012, and 2013). Since we could not randomly assign students to treatment, we designed a quasi-experiment that designated program attendees as the treatment group, and their school-year classmates as the control group. We collected baseline data in order to balance treatment and control groups across a series of covariates. The upper rows of Table 1 display the number of participating boards, cohorts, and treated and control students across each program. Sample sizes ranged widely across the four programs. Since the project initially focused on literacy, and since English-language students comprise 95% of Ontario's public school population, the English literacy samples were the largest by far, with over 10,000 total participants across 31 participating boards and four cohorts. In contrast, the French Numeracy sample consisted of 121 total participants from a single cohort across four participating boards.

Our measures come from a variety of sources (see Table 1). Our main outcomes were standardized test scores in numeracy and literacy. English language students were given computer-adaptive "STAR" tests from Renaissance Learning (www.renaissance.com/products/star-reading) that converted scales into grade equivalents, a metric that represents months of learning. French language students were given pen and paper grade benchmark (GB+)³ tests that lack any similar interpretation. Both treated and control groups were tested in June, before the onset of summer, and re-tested in September soon after the restart of the school year. Summer learning was measured by subtracting June scores from September scores. Since the interval between spring and fall tests contained some school days, and since boards varied in their testing dates, our models contained controls for the number of days in each student's test interval. We estimated average treatment effects by comparing literacy or numeracy gains and losses between program participants (i.e., treated) and controls.

3 The "GB+" is a diagnostic reading test to assess students' ability and comprehension in reading French.

Table 1
Variable Descriptions and Statistics

Variable	Description	<i>English Literacy</i>	<i>English Numeracy</i>	<i>French Literacy</i>	<i>French Numeracy</i>
# of Cohorts	By year	4	2	3	1
# of Boards	District	31	18	8	4
<i>N</i> of Treated	Program attendees	2660	3566	321	75
<i>N</i> of Controls	Non-attendees	8269	811	361	46
		Mean (sd)	Mean (sd)	Mean (sd)	Mean (sd)
Summer Literacy	Sept test score minus June test score	-.008 (.648)	-0.046 (0.637)	1.34 (2.31)	0.719 (5.14)
Spring Literacy	Standard test score	2.01 (1.24)	2.15 (1.15)	11.81 (7.54)	19.16 (5.93)
Test Interval	Days between testing	89.26 (9.31)	90.80 (8.72)	111.2 (24.6)	96.8 (5.57)
Reading / Math Grade	From student transcripts, %	70.72 (14.19)	71.93 (9.14)	70.97 (7.68)	73.09 (8.33)
Gender	Male = 1, Female = 0	.520 (.500)	.525 (.499)	.493 (.50)	.474 (.501)
Days Late	Count from previous year transcripts	6.30 (11.64)	7.95 (13.95)	5.27 (9.0)	2.60 (6.511)
Days Absent	Count from previous year transcripts	10.79 (10.50)	11.97 (13.9)	8.16 (6.29)	4.15 (5.13)
Grade Level	Grade 1, 2, or 3 in previous school year	1.77 (0.70)	1.88 (0.812)	1.68 (0.79)	1.78 (0.68)
IEP	Student had Individual Ed. Plan	.109 (.311)	.087 (.281)	.138 (.345)	.111 (.315)
Parent Education	From parent survey, categories based on credential level	4.63 (1.76)	5.15 (1.97)	5.09 (1.47)	5.75 (1.89)

Our models contain dummy variables for grade level, gender, school board, and cohort, where applicable. We also added a series of additional covariates from student report cards from the previous school year: reading or math grades (measured as percentages), whether students had an Individualized Education Plan (IEP, an indicator of special academic needs), and numbers of days late and absent. From a survey of parents we also added a measure of parent education that contained eight categories: elementary only, some high school, high school graduate, apprenticeship, technical college, commu-

nity college, university bachelor's level, and postgraduate university. Whereas our test and report card measures had almost full data, response rates to the parent survey varied across programs from 39% to 60%. Since those rates of missing data were both high and unlikely to be random, we elected not to impute values for the parent education variable. Our models that contained that variable also relied on deletion.

To answer our quantitative research questions, we conducted three sets of analyses. First, to determine patterns of participation, we ran logistic regression models that predicted attendance in summer programs, comparing their associations with students' academic characteristics and parent education. Second, to measure the causal effects of each summer program, we estimated average treatment effects using propensity score matching models that balanced treatment and control groups on the covariates listed above. Third, to assess whether or not certain groups were more likely to benefit from the programs, we ran separate Ordinary Least Squares (OLS) regression models for controls versus attendees on summer literacy/numeracy gains to examine whether academic characteristics or parent education were significant predictors of summer learning.

Qualitative Data Collection and Analysis

Over three summers, we conducted semi-structured one-hour interviews with 153 parents and 65 teachers at three schools (two in southern Ontario, one in northern Ontario). We distributed a recruitment flyer to parents and teachers at those schools, explaining the study and inviting volunteers for interviews. We interviewed parents and teachers about their experiences with recruitment, their assessments of summer programs, relationships between teachers and parents, and children's experiences in those programs and in their regular schools. Interviews were conducted on school sites, were digitally recorded with participant consent, were transcribed verbatim, and analyzed in NVivo. We also used an unstructured approach to observe daily activities at those sites, often helping with various activities to build rapport with staff, parents, and students (Creswell & Creswell, 2005).

These qualitative data offered glimpses into parents' and teachers' valuations of the summer programs. We first organized responses descriptively by following our interview schedule to parse out parents' descriptions of those programs, creating broad nodes for their initial contact with program recruiters, why they signed up their children, their perceptions of the program, and what they believed their children gained from the pro-

gram. In the second phase of analysis, we developed coding sub-nodes by subdividing those broader nodes. For example, in the recruitment category, we created sub-nodes for the source of recruitment: flyer/poster, website, direct teacher contact, indirect teacher contact (through child), or word-of-mouth from another parent. The third phase of analysis involved cross-case analysis of parents' and teachers' responses to probe differences and similarities in their experiences with the programs. Because we were interested in parents' SES and perceptions, those experience reports became a focal point of comparison during the final phase of analysis (see Saldaña, 2012).

Virtually all interviewees had positive feedback about the summer programs; almost none offered negative comments. That unanimity could be an artefact of two possible limitations in our qualitative data. First, parents who were already favourably predisposed to summer programs may have self-selected into our study by enrolling their children in the programs and then by agreeing to be interviewed. Second, our methods might have inadvertently generated social desirability bias: interviewees may have been reluctant to criticize the programs since interviews were conducted on school sites, even though they were conducted privately. We believe that these biases were not overly strong, however. Most recruits had previously experienced difficulties with school, so their parents might have been predisposed to hold negative attitudes towards schools. Further, some parents voiced sharp criticisms during interviews of their children's school-year classrooms, and did not seem apprehensive about honestly sharing such views.

Findings

Who Participated in Summer Programs?

Did teachers successfully attract students to these summer programs who needed an academic boost? Or did they misrecognize students, recruiting by SES background rather than by school performance? Table 2 displays logistic regression models predicting participation across the four programs: English Numeracy, English Literacy, French Literacy, and French Numeracy. We first estimated a model for each of four samples that contained only the parent education variable (coefficient reported in the "parent education only" row) to provide a baseline estimate of the total association between that variable and participation. Our second set of models removed parent education and instead contained

three measures of academic performance prior to the summer months: reading or math grade, spring literacy or numeracy scores, and IEP status. Those models also contained controls for school year attendance and dummy variables for cohort, board, and grade level (the latter coefficients are not shown for brevity of presentation; see left-side columns). The latter models exploit the larger samples unaffected by survey response rates. We then ran a third set of models that drew on the smaller survey samples and added parent education in order to explore whether that variable was a significant predictor of participation independent of prior academic performance (see right-side columns).

Table 2 shows that patterns of attendance were very similar among the four programs. In each, children with less-educated parents were significantly more likely to attend at the zero-order level, as indicated by significant and negative coefficients in each of the four “Parent Education only” rows. However, in the sets of models that replaced parent education with all other covariates (Model 2), children’s academic characteristics also predicted participation. The negative and significant coefficients for students’ grades from the previous school year suggest that children with lower grades were more likely to attend summer programs, controlling for all other variables, while spring literacy/numeracy test scores skills were negatively associated with participation in three programs. Similarly, having an IEP positively predicted participation in all programs. When parent education was re-introduced into the third set of models (Model 3), its coefficients shrank to non-significance, while most of the academic measures remained significant. Thus, while programs might have recruited disproportionate numbers of students from less educated families, that pattern stemmed from those students’ tendency to also have pre-existing academic challenges. Thus, these data suggest that teachers tended to recruit students based on academic need.

We add a caveat, however: Children with fewer absences during the previous school year were more likely to attend summer programs. This suggests that programs did not attract students with prior attendance problems—a population that could readily benefit from an intervention. Perhaps problems that lowered student attendance during the school year, such as poor health, lack of motivation, or family problems, also impacted summer program attendance, conditional on academic performance. But overall, the consistent patterns of participation across our samples support the partial compensation perspective; that is, teachers recruited children based on their academic need, and did not specifically target students based on their SES background.

Table 2*Coefficients for Logistic Regressions of Participation in Summer Programs*

	English Literacy Models 1 & 3	English Literacy Model 2	English Numeracy Models 1 & 3	English Numeracy Model 2
Parent Education (alone)	-.137 (.018)***		-.121 (.027)***	
Spring Literacy/ Numeracy	-.263 (.042)***	-.278 (.056)***	-.189 (.069)**	-.145 (.097)
Reading/Math Grade	-.042 (.004)***	-.052 (.006)***	-.026 (.008)***	-.022(.011)*
IEP	.433(.096)***	.405 (.138)**	.411 (.179)*	.478 (.247)*
Days Late	.002 (.003)	.009 (.004)*	-.003 (.004)	.003 (.006)
Days Absent	-.018 (.003)***	-.020 (.005)***	-.022 (.006)***	-.008 (.008)
Parent Education		-.001 (.024)		-.009 (.037)
Male		-.092 (.085)		-.015 (.142)
Pseudo R Square	.161	.221	.137	.164
<i>N</i>	7609	3501	3109	1210
	French Literacy Models 1 & 3	French Literacy Model 2	French Numeracy Models 1 & 3	French Numeracy Model 2
Parent Education (alone)	-.290 (.077)***		-.459 (.155)**	
Spring Literacy/ Numeracy	-.079 (.018)***	-.105 (.027)***	-.083 (.076)	-.034 (.085)
Reading/Math Grade	-.047 (.015)**	-.047 (.024)*	-.325 (.088)***	-.283 (.089)***
IEP	1.17 (.331)***	1.18 (.445)**	1.12 (1.16)	-.737 (1.336)
Days Late	.005 (.010)	.029 (.022)	-.164 (.150)	.051 (.095)
Days Absent	-.020 (.016)	-.030 (.023)	-.066 (.066)	.099 (.116)
Parent Education		-.160 (.103)		-.376 (.244)
Male		-.162 (.266)		.637 (.926)
Pseudo R Square	.160	.250	.524	.502
<i>N</i>	623	351	116	71

Notes: Cells in first row display zero-order logistic coefficients for models containing only parent education. Other rows display coefficients for listed covariates conditional on dummy variables for school boards (districts), grade levels, and cohorts, not shown. Dummies for board and grade were removed in models for the French numeracy column due to low sample size. Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Social Valuations: Stigmatizing or Uplifting?

Our qualitative data address the social valuations of summer programs. All stakeholders had positive images of those programs. In interviews, they voiced their appreciation of teachers' earnest efforts to recruit students in need of an academic boost. Parents discussed several methods by which teachers encouraged them to enrol their child in summer programs—sending information flyers, posting notices for information sessions on school websites and walls, or personally calling them. Many parents responded positively to those efforts. Eva, a working-class mother of three, shared an experience that was common among our interviewees. As an immigrant, she struggled to communicate in English and navigate a new school system. She was alarmed when her son's Grade 2 teacher informed her that he was reading only at a JK level. That teacher made a concerted effort to recruit her son into the summer program.

The teacher put a flyer in Seth's agenda. And she wrote a note telling me to make sure Seth will go to summer here. And at the end of the semester, before the last day, she sent me a letter telling me, "Did you get Seth into summer here?" And I went to meet her, and I say, "Yeah." And she said, "That will really, really help Seth."

Similarly, another teacher went out of her way to recruit the grandson of Karen, a working-class grandmother with custody. Karen was somewhat reluctant because of a pre-planned family camping trip. After a second conversation with the teacher about the potential benefits of the program, Karen eventually signed up her grandson, later deeming him "lucky" to get a spot.

While teachers made concerted efforts to recruit children in need of literacy or numeracy interventions, those programs also appealed to families from a range of social classes and with a range of academic fortunes. Like our working-class interviewees, middle-class parents like Breanna were approached by teachers who portrayed the program as "beneficial" for their child's academic growth. But in some cases, the programs fed parents' appetites to stimulate their children academically throughout summer. As Monique, a middle-class mother, explains,

I know one of the goals too is sort of remediation for kids who are maybe struggling or who are learning English as another language, that kind of

thing. But I thought, you know what, why shouldn't my kid get that advantage too? It was free this year, although, I would have willingly paid.

The summer programs appealed to some parents of strong students with ample learning resources at home. They saw the programs as extensions of extracurricular activities they were already providing, such as sports or music programs. For example, Loren, who was completing a master's degree, described herself and her husband as being very "hands-on" in their children's education, and offered the example of making her son practise sample questions from Ontario's standardized tests at home. As Loren explained, those activities keep her children's brains "nourished."

Your brain needs to be constantly stimulated to develop your mind...[the summer program] is a way of nourishing and keeping your brain alive, regarding one part of what you do during summer so you don't completely forget all you've learned and what you would be learning. So, to me, it's a valuable resource, not only to keep what has been learned active but to prepare you for what you're going to [learn].

More generally, many saw the programs as enriching their children's summer vacations. As Caroline (a teacher) described, attendees "get to experience things maybe mom or dad can't afford to do over the summer." Parents mentioned that their children enjoyed not only being in air-conditioned buildings on hot summer days, but also program activities, such as going on field trips, playing sports, and doing crafts. Caroline shared

We've heard other parents say, "This is so much better than them sitting in front of the TV all day."... They're actually learning skills and doing things and playing with one another and interacting with one another. I mean, it's all good stuff.

For these reasons, a "buzz" developed around the summer programs, making recruiting easier. Many interviewees heard about the programs from other parents at their school who recommended that they "should really try it." Parents also lauded their children's enthusiasm for the programs, which was particularly strong if they also had friends enrolled. Joanne described how her stepdaughter "begged" to go to the camp. After attending an after-school literacy program, Joanne worried that she would not find the summer

program to be fun. However, her stepdaughter “wouldn’t stop saying ‘please’” until they agreed she could attend. At that time, Joanne believed her stepdaughter’s interest would fade once the program started, but to her surprise, she was “getting up every day at 6:00 going, ‘Is it time to go to camp yet?’”

According to our field notes, board officials were very pleased with the uptake of their programs as information spread about their quality and effectiveness. Many programs had waiting lists, prompting boards to add additional classrooms to meet demand. They were also popular among teacher and principal interviewees. Principals like Patricia described them as “fabulous,” noting she “advocates for it every year...it’s a great opportunity for kids to get reacquainted and gather some of those literacy and numeracy skills that slide a little over the summer.” Teachers like Lucy described the program as “such a positive school experience” that families come to rely on. As Avery, a teacher at the program, explained,

I think the program speaks for itself. It keeps going over the years. I don’t think it’s just because it’s cheap or free. I really do think it’s because parents...want their kid to be continuously learning.

When teachers were asked about their “greatest success” in the program, many described forging connections with parents/guardians and receiving positive feedback from them. Parents regularly commented on their children’s enjoyment of the program, and made reference to noticeable literacy or numeracy gains. These programs were particularly popular among children who attended them over consecutive summers. A high school dropout herself, Christine desperately wanted her children to do well in school. After the summer, she claimed that her daughter’s work improved and that she now “reads like crazy.”

Her work improved, like specifically her reading skills in particular. Like, she’s not a pro reader, but I would say she’s improved so much that I would honestly have to say like I suggested, and I told [her teacher] last year, do you have it next summer? I was like, honestly, you should have it every summer for every grade.

According to Christine, the program not only provided her daughter with literacy support, but also “gives her confidence” knowing that she is “not the only kid that’s having

this problem.” Another working-class parent, Tanya, noted that the program helped her with getting her daughter to do more reading: “[she was] more encouraged with reading, because like I’ve said, we’ve had that problem. And during the summer if I don’t read to them, they don’t read at all.”

Overall, our interviews and field notes provide support for the partial compensation logic. We did not encounter any evidence that stakeholders perceived any social stigma surrounding the programs. Parents appreciated teachers’ recruitment efforts. Parents, teachers, and students alike enjoyed the programs, felt they enriched children’s summers by providing valuable learning opportunities, and that they strengthened relationships between teachers and many parents who previously had weak ties to their schools. Many working-class parents said that they began to read more with their children outside of the program hours. Some middle-class families also enrolled their children despite already having learning resources and good literacy and numeracy skills.

The latter finding is compatible with one tenet of the social reproduction perspective, however. That is, that since the programs were positively valued, they might have attracted socio-economically affluent or academically successful students, who may in turn have enjoyed greater learning gains. To explore that possibility, we next examined the academic outcomes of those programs.

What were the Academic Outcomes of the Summer Programs?

To judge learning gains from the programs, we ran propensity score matching models and estimated average treatment effects (see Table 3). We balanced control and treatment groups on a series of observed covariates: prior school year reading or math grades, spring literacy or numeracy test scores, school year attendance, student gender, and dummy variables for grade level and cohort. Table 3 displays estimates of average treatment effects (ATEs) for each program. It shows that all four programs had positive and significant ATEs. Participants in each program had significantly higher learning gains than their matched counterparts. The magnitude of those effects varied widely, however. The English language program ATE can be interpreted as boosting summer attendees’ average learning by almost 0.8 months in literacy and 1.2 months of numeracy compared to their matched counterparts. These ATEs represent effect sizes of .12 and .18 respectively. The French language programs had much stronger effects, with effect sizes of .28 for literacy and for

1.2 numeracy. The discrepancy between English and French language effects sizes has two likely causes. First, the French tests were developed by Ontario educators and were closely aligned with Ontario's French language curriculum. The English tests were borrowed from the United States and as such were not designed to connect with Ontario curricula. Thus, the English tests might have underestimated the learning generated in the language programs. Second, the French samples were considerably smaller than the English samples, which likely lowered their reliability. Indeed, the large effect for the French numeracy program appears to be an upper outlier when seen in context of evaluations cited above.

These caveats notwithstanding, we found that summer programs had consistently positive and significant effects. Their effect sizes are mostly modest, consistent with findings from American meta-analyses of summer programs (Cooper et al., 2000; Lynch et al., 2021; McCombs et al., 2020). When viewed in tandem with Table 2, Ontario's summer programs appeared to have raised learning rates while recruiting relatively disadvantaged students, findings that are consistent with the partial compensation perspective.

Table 3

Average Treatment Effects of Summer Programs

	ATE (SE)	N
English Literacy	.077 (.028) *	6346
English Numeracy	.117 (.048)*	2607
French Literacy	.638 (.192)***	610
French Numeracy	6.08 (1.70) ***	130

Notes: All treatment effects estimated after balancing treated and control groups on test interval, reading or math grade, spring test score, days late and absent in previous school year, having an IEP, and dummy variables for grade and cohort. Standard errors in parentheses.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Who Benefited from the Programs?

To answer this final question, we ran separate OLS regression models for controls and attendees, examining whether students with previous academic and SES dis/advantages had larger or smaller gains in summer learning, conditional on other covariates. Table 4

displays coefficients for parental education and prior reading/math grades. The left-hand side displays coefficients for summer program attendees, and the right-hand side displays control groups.

Table 4

OLS Regression Coefficients for Parent Education vs. Prior Grade on Summer Learning Gains/Losses

	Attendees			Controls		
	Prior Grades	IEP	Parent Education	Prior Grades	IEP	Parent Education
English Literacy	.001 (.002) <i>n</i> = 1070	-.056(.047) <i>n</i> = 1070	-.000 (.010) <i>n</i> = 1070	.005 (.002)* <i>n</i> = 1,934	-.049(.063) <i>n</i> = 1,934	.016 (.009) <i>n</i> = 1,934
English Numeracy	.004 (.005) <i>n</i> = 325	.151 (.125) <i>n</i> = 325	.033 (.020) <i>n</i> = 325	-.003 (.003) <i>n</i> = 778	-.057(.085) <i>n</i> = 778	.008 (.012) <i>n</i> = 778
French Literacy	.059(.026)* <i>n</i> = 214	.106 (.404) <i>n</i> = 214	.160 (.115) <i>n</i> = 214	.093(.026)*** <i>n</i> = 145	.792(.655) <i>n</i> = 145	.040 (.125) <i>n</i> = 145
French Numeracy	-.018 (.112) <i>n</i> = 18	4.71 (3.55) <i>n</i> = 18	.783 (.867) <i>n</i> = 18	-.018 (.112) <i>n</i> = 53	-9.1(3.6)*+ <i>n</i> = 53	-.492 (.390) <i>n</i> = 53

Notes: Cells contain OLS coefficients with standard errors in parenthesis, and sample size (*n*). All coefficients control for test interval, reading or math grade, spring test score, days late and days absent in previous school year, having an IEP, gender, and dummy variables for school board (district) grade and cohort, except in the bottom row, which did not control for board and grade dummies due to low sample size.

* $p < 0.05$, *** $p < 0.001$. “+” designates that coefficients for IEP and parent education differ significantly in the French Numeracy model ($p < .05$).

The 12 cells on the left side of Table 4 reveal only a single statistically significant coefficient: attendees with higher previous grades had larger summer gains in French literacy. Otherwise, attendees’ pre-existing grades, IEP status, and parent education did not predict their summer learning gains/losses. Thus, the summer programs did not appear to benefit any particular group of students categorized by prior academic performance or parent education. In partial contrast, three of the 12 cells on the right side of the table have significant coefficients. Thus, while summer learning among the controls were mostly not predicted by their pre-existing grades, academic needs, and parent education, control students in both English and French samples with higher prior grades also had higher summer gains in literacy. Additionally, control students with IEPs were more likely to suffer

summer learning losses. None of the models indicated that students with more highly educated parents had greater numeracy or literacy gains, conditional on prior academics.

These patterns suggest that summer program attendance tended to level playing fields; no particular attendees appeared to benefit more than others. The story is somewhat different among controls in both English and French samples: those with higher language grades during the previous school year had greater summer literacy gains. Both sets of findings support the partial compensation perspective: no group of attendees had better gains than others, while some students with better prior performance had better gains among the control groups. Overall, the fact that only four of 16 cells had significant coefficients suggests that neither prior academic performance nor parental education are powerful predictors of summer learning—which accords with recent US studies (e.g., Kuhfeld, 2019). Nonetheless, there were more significant predictors among controls, which is consistent with research suggesting that rates of summer learning become increasingly disparate among students who do not receive interventions (Atteberry & McEachin, 2021).

Discussion and Conclusion

This article tests hypotheses derived from applying the logics of social reproduction and partial compensation theories to summer programs. We reasoned that summer programs were remedial school structures that could bring stigma and trigger a series of negative self-fulfilling prophecies to students, or could provide welcomed extra opportunities that boosted their learning. We interpreted our findings as being consistent with the partial compensation perspective. All programs recruited students based on their measured academic needs; teachers, parents, and students valued them as being academically uplifting, and all programs significantly boosted their attendees' skills, while not providing extra benefits for those with pre-existing socio-economic or academic advantages.

This study offers several advances to the literature on summer learning. First, it offers novel yet robust findings from a large scale and mixed method study that is unique in Canada. None of the cited American meta-analyses included any Canadian studies. Second, it fills a research void by evaluating summer programs, which over the past decade have become increasingly popular in this country (Aurini & Davies, 2021; Davies & Aurini, 2021). Third, as policy makers currently search for interventions to alleviate learning

shortfalls stemming from COVID-era school disruptions, our study implies that summer programs may provide viable models to address the loss of learning that may have occurred during school shutdowns and virtual learning. Fourth, we offer a theoretical contribution by extending the logics of social reproduction and partial compensation to summer programs. While many observers may regard summer programs to be either beneficial or innocuous, some have applied social reproduction reasoning to imply that the underlying framing used in summer learning research could be ultimately harmful (e.g., Zhao, 2021). We disagree, believing our data support a very different conclusion. But we qualify those conclusions by noting that our data not falsify social reproduction theory *writ large*, which seeks to understand the persistence of educational stratification over lengthy periods of time (for a version of this point, see Carter, 2016). Our article instead offers an empirical corrective to the logic of social reproduction theory when applied to supplements like summer learning interventions. That is, summer programs have the potential to compensate—or at least, partially compensate—for summer learning loss for all students, rather than perpetuating inequalities that already exist.

Third, our findings have a major policy implication: that summer learning programs can provide multiple benefits for elementary-aged students, including those with learning and socio-economic challenges. These programs can boost students' skills while providing otherwise cash-strapped households with free quality programming. They can keep children "plugged in" to reading during summer months when they might otherwise "check out" (Hillier & Aurini, 2018), and can provide parents and teachers with an alternate and relatively relaxed venue to interact. As academic material becomes increasingly challenging over the primary grades, summer programs can provide children with extra learning opportunities that can help them successfully transition from emergent readers to reading at more complex levels with sophisticated comprehension and learning strategies. Summer programs can be part of a broader suite of supplements aimed at closing achievement gaps, alongside enriched preschools, travelling libraries, homework support, and free extracurricular activities (see Kim & Guryan, 2010; Kornrich & Furstenberg, 2013).

In conclusion, we point to this research's potential to inform COVID-19 learning recovery strategies. World-wide school disruptions exposed students to a substantial amount of non-school time and Canadian and international research suggest that school closures generated learning losses (e.g., Davies and Aurini, 2021; Patrinos et al., 2022). High quality summer could be a powerful learning recovery tool to shore up learning losses caused by COVID-19 school disruptions.

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