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RESEARCH ARTICLE

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"My Name Is Sally Brown, and I Hate School!": A retrospective study of school liking among conventional and Montessori school alumni

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Abstract

School liking shows clear associations with academic success, yet we know little about how it changes over levels of schooling, what predicts liking school at each level, or how attending alternative schools like Montessori might impact liking. To better understand school liking across time and education settings, we surveyed adults about how much they remember liking elementary, middle, and high school, and identified key school features that predicted higher school liking at each level. Because Montessori schools have many features that other literature suggests predict higher school liking, we purposely sampled Montessori alumni as well, and compared their schools' features for elementary school only (due to sample size). Moreover, we collected open-ended responses about what participants in both conventional and Montessori liked least about school, revealing what features of their school experiences might have led to less overall school liking. The unique contributions of this study are (1) showing how a wide range of school features predict recalled school liking, (2) examining data for all school levels using a single sample of participants, and (3) comparing recalled school liking and its predictors across conventional and Montessori schools. The sample included 630 adults, of whom 436 were

conventional school alumni and 187 were Montessori alumni (7 participants did not report school type). Participants' mean age was 35.8 years (*SD* = 10.53, range = 19–77), and 53% were female. Participants were recruited online, and they responded to Qualtrics surveys about school liking, school features, and their demographics. School liking overall was tepid, and was highest in elementary and lowest in middle school. For all participants, recalling a sense of community and interest in schoolwork were most strongly associated with school liking. Adults who attended schools which emphasized studying topics of personal interest and rewards for positive behavior also liked school more. Montessori school alumni reported higher school liking and that learning was what they liked most about school; by contrast, conventional school alumni most liked seeing friends. Levels of school liking, as recalled by adults, are low overall, but are higher in elementary school and higher amongst those who recall their schools as having stronger community, catering more to student interest, and rewarding positive behavior. In addition, school liking was higher among people who attended Montessori schools. Further research could extend to a cross-sectional study of children currently enrolled in different types of schools.

KEYWORDS

academic engagement, emotional engagement, Montessori, school community, school liking

1 | INTRODUCTION

School liking is a key driver of school success. Studies have focused on children's liking and enjoyment of school at specific ages (e.g., Boulton et al., 2011; Fredericks et al., 2004; Ladd & Dinella, 2009; Ladd et al., 2000), but we found no study that examined liking across the major school levels (elementary, middle, and high school). Adults' recollections of their experiences in school may reveal how school liking changes over time without the encumbrance of a multidecade longitudinal study, nor the interindividual variability of a cross-sectional one. Therefore, in this study we asked three questions: First, how much do people recall liking school in each school level? Second, what features of school (as they recall) are associated with higher school liking? Finally, do people who attended Montessori—the most common and enduring alternative school model—recall liking school more or less than people who attended conventional schools? Montessori schools were designed by physician-educator Maria Montessori over 100 years ago (Debs, 2019; Lillard, 2019), and they have many features that the literature suggests might predict school liking: For example, they are student-centered with hands-on lessons delivered individually or to small groups, their classrooms span 3 years, and they lack tests and grades. By contrast,

conventional school classrooms are typically teacher-centered with whole-class lecture-style lessons, assignments, and graded work, and students are divided into single-age grades (Tyack & Tobin, 1994).

One might claim that we (as a culture) assume children do not like school. For example, cognitive psychologist Daniel Willingham (2021) titled his bestselling book, *Why Don't Students Like School?* Negative representations of school are also common in popular media—for example, Calvin from *Calvin and Hobbes* and Charlie Brown from *Peanuts*. Research findings concur that feelings about school are often negative, particularly as children get older (Hascher & Hadjar, 2018). In Kindergarten, 76% of former Head Start students reported liking school "a lot" (Ramey et al., 1998), but by the middle of elementary school, most children report "sometimes" or "usually" liking school, and overall they like it less in the spring than they did in the fall (Gest et al., 2005). As students age, school liking declines further (Kokotsaki, 2016), so by high school, the top three emotions students report feeling at school are tired, stressed, and bored (Moeller et al., 2020). Indeed, the majority of high school students report feeling bored—thus unengaged—at school (Bryner, 2007). Given that over 56 million American children are enrolled in school (Bustamante, 2019) for 8 h a day, 5 days a week, 9 months a year, for grades K-12, a basic value on well-being would suggest we might want to reform schooling. The low levels of school liking reported in earlier studies are also problematic because of its relationship to engagement and achievement.

School liking is often referred to as "emotional engagement," which forms a triad with cognitive and behavioral engagement (Fredricks et al., 2004) to predict academic achievement, above and beyond family factors like socioeconomic status (SES; Ladd & Dinella, 2009; Ladd et al., 2000). For example, one British study showed that school enjoyment at age six strongly predicted educational achievement 10 years later, even after adjusting for gender and socioeconomic status (Morris et al., 2019). A study with Finnish children found students' subjective experience and school well-being affect their cognitive engagement which, in turn, affects their academic achievement (Pietarinen et al., 2014). A recent meta-analysis of 69 studies yielded the same conclusion: All three forms of engagement correlate with academic achievement (Lei et al., 2018), with effect sizes that are meaningful for school research (Kraft, 2020). There is likely a complex feedback loop, where liking school (emotional engagement) increases behavioral and cognitive engagement, which lead to higher achievement, and then even higher subsequent school liking (Finn, 1989). Given these relations, it is important to consider what influences school liking; such knowledge could enable educators to improve students' subjective experience of school.

Research on school features that predict liking school is scarce (Boulton et al., 2011; Fredericks et al., 2004), and what exists was conducted primarily in conventional schools. Understanding school liking in both the conventional model and alternative models could clarify what school features are predictive of higher school liking, since alternative schools might accentuate features that are less common in conventional schools. If specific features of a school's academic program or social environment are important for school liking, we also would expect different degrees of school liking between schools where those features differ. Montessori is the most widely implemented and enduring form of alternative education (Debs, 2019; Lillard & McHugh, 2019a, 2019b), and as noted the Montessori system differs from the conventional system implemented in most schools on key dimensions that might be related to school liking. Montessori, therefore, offers an excellent point of comparison for this study.

To summarize, how much people like school is important from a societal well-being standpoint, and because it predicts school success. It is germane to also probe what features people recall their schools having, and how these relate to recalled school liking. Other studies have examined specific features with specific ages of students; here we examine an array of features in a single model, asking the same subjects about their recalled school liking and school features in elementary, middle, and high school, as these might differ. Finally, we are interested in whether people who attended Montessori schools recall greater school liking or not, in part because Montessori has some features other literature suggests might be associated with school liking. Because this is exploratory research, we also took the opportunity ask whether attending public or private school influences school liking. In the next section, we consider the existing literature on features associated with school liking, and how they might figure in the current study.

1.1 | Factors associated with school liking

There is little direct research on school liking (Boulton et al., 2011), but certain student demographic and school characteristics are related to student engagement, and engagement predicts school liking. We discuss these characteristics below. The school features are organized into the academic environment, the social environment, and features stemming from a school's administrative emphases (e.g., on testing). Although the features we consider have been studied with regard to engagement and well-being, they have not all been looked at together in a single model predicting school liking, as is done here.

1.1.1 | Student characteristics

Regardless of school program or type, student demographic characteristics, specifically SES, learning ability status, gender, and race, could predict school liking. Regarding SES, financial hardship and familial stress have a deleterious effect on student engagement (Simons & Steele, 2020), which could result in lower school liking for economically disadvantaged students. For learning ability status, students with IEPs are less likely to be emotionally engaged with school peers, in that they interact with peers less (Kwon et al., 2011); this could lead to lower school liking. In terms of gender, several studies have reported higher school liking among girls than boys (e.g., see Lei et al., 2018). Finally, results from research on race and school engagement are inconsistent (see Park et al., 2012 for a summary), but male students of color are the most common recipients of biased disciplinary practices (Vincent et al., 2012), which could predict lower school liking for this group.

Some of the features described in this paragraph (like economic disadvantage) might play out similarly regardless of school type. Others, like the effect of having an IEP, might be less prevalent in Montessori, where children receive nearly all lessons individually or in small groups (Lillard & McHugh, 2019a, 2019b), and each child's learning timeline is highly individualized (Epstein, 2020); these differences might equalize peer engagement for children with IEPs.

1.1.2 | School features

1.1.2.1 | *Academic environment*

The academic environment is also a potential determinant of school liking. The academic environment can support and engender one's sense of autonomy, one's confidence in test-taking abilities, and one's interest in schoolwork, each of which might predict school liking.

1.1.2.1.1 | *Autonomy.* Lower levels of self-determination predict lower intrinsic motivation and well-being (Ryan & Deci, 2000), and thus self-determination would seem to be important for school liking. Self-determination is comprised of autonomy, competence, and relatedness (Ryan & Deci, 2000). Autonomy is fostered by choice. Thus, the degree to which participants recall their academic environment as offering choice, which provides a sense of self-determination, would also seem likely to predict school liking.

The conventional model relies on teacher-centered, lecture-style instruction (Callahan, 1962; Darling-Hammond et al., 2019) which naturally restricts autonomy and choice. Montessori students experience a high degree of autonomy and self-determination (Rathunde & Csikszentmihalyi, 2005a); thus, Montessori alumni might report higher school liking. Pressure to perform well on standardized tests often forces teachers to adhere to a strict learning timeline (Bassok et al., 2016), which likely results in lower levels of student choice in schools where standardized tests are a high priority. Private schools are often not required to administer standardized tests, which might allow for more student autonomy, and increase school liking among private school students.

1.1.2.1.2 | *Confidence about test-taking.* School engagement is related to confidence in one's test-taking ability (Corso et al., 2013); this confidence thus also likely predicts school liking. Notably, confidence in test-taking is also associated with self-determination, since competence is a key component of self-determination (Ryan & Deci, 2000). Thus, in schools where standardized tests are emphasized, students who do well on these tests might like school more.

1.1.2.1.3 | *Interest in schoolwork.* When students are interested in their schoolwork, it stands to reason that they would like school more. Increasing choice increases interest in schoolwork (Patall et al., 2010), as does making connections between new learning and background knowledge (Hidi & Renninger, 2006). Therefore, academic programs featuring integrated curricula with high levels of student choice (like Montessori) might better support students' well-being and interest in schoolwork, leading to stronger liking of school. A prior study does suggest that at least in middle school, Montessori students do experience higher levels of interest in schoolwork (Rathunde & Csikszentmihalyi, 2005a).

1.1.2.2 | *Social environment*

In addition to the demographic and academic features just considered, another potential determinant of school liking is the social environment (Eccles & Roeser, 2009), reflected both in a sense of community and the disciplinary climate.

1.1.2.2.1 | *Sense of community.* Feeling a strong sense of community and support at school improves academic outcomes and promotes positive development (Darling-Hammond et al., 2019). A strong sense of community depends on healthy and supportive relationships between students and peers as well as between students and staff (Furrer & Skinner, 2003). Conventional schools' use of grades and ability tracking increases social comparison and competition among students (Darling-Hammond et al., 2019; Eccles & Roeser, 2009), which could diminish students' sense of community. In private schools, students tend to report stronger social bonds to their school (Gamoran, 1996) and better relationships with their teachers (Fan et al., 2011), which could increase school liking. Montessori students spend three consecutive years with the same teacher and peers, which might promote deeper and more meaningful relationships. Multi-age classrooms might also widen opportunities for peer-assisted learning, and Montessori's lack of testing and grades might reduce competition and therefore strengthen social bonds. Both public and private Montessori students do report a stronger sense of classroom community than control groups of conventional school students (Lillard & Else-Quest, 2006; Rathunde & Csikszentmihalyi, 2005a).

1.1.2.2.2 | *Disciplinary fairness.* School liking could also be shaped by the extent to which students perceive disciplinary practices as fair; perception of the disciplinary climate might affect school liking in four ways that are relevant here. First, students who observe or experience biased disciplinary practices report lower levels of trust in their school (Yeager, et al., 2017), which may lead to lower levels of school liking. Second, observing and experiencing biased disciplinary practices are both more common among students of color (Skiba et al., 2014). Thus, distrust (and therefore reduced liking) borne of unfair disciplinary practices may disproportionately affect students of color. Third, private school students report fairer disciplinary practices than do public school students (Gamoran, 1996), which could be associated with higher school liking among private school alumni. Finally, Montessori schools report fewer disciplinary events overall (Culclasure et al., 2018; LeBoeuf et al., 2022), which might contribute to higher average liking for Montessori students.

1.1.2.3 | *Administrative emphases*

In addition to student demographic features and schools' academic and social environments, a school's administrative emphases might influence school liking. For present purposes, administrative emphases capture

what is perceived to be foci or priorities of the school; by contrast, the academic and social environment reflects subjective experience within that environment.

Administrative emphases that could influence liking include the degree to which the school prioritizes class rank, reward-based behavioral management, and standardized tests. For example, emphasis on testing increases anxiety and stress for students, particularly students from low-income backgrounds (Heissel et al., 2019). On the other hand, an administration can emphasize catering to student interests (which we contrast with the subjective experience of interest, discussed above as an academic environment feature). Because interest is related to engagement, alumni of schools that emphasize student interest might have higher levels school liking.

In sum, based on prior research and theory, we expect that certain characteristics of the student, the academic and social environments, and the school administration's emphases might be related to how much alumni recall liking school at each level.

1.2 | Current study

Although some literature suggests levels of school liking are low, especially by middle and high school, no retrospective study has examined school liking across all three major school levels (elementary, middle, and high school). Here we do so, assessing liking in the same participants across all three levels.

In addition to there being (to our knowledge) no prior retrospective study of school liking in a single set of adults across all school levels, no study has examined how a large variety of individual and school factors predicts school liking across each of these levels. Such information could inform how one might change school to increase liking (and therefore engagement and success). We also asked an open-ended question about what participants liked *least* about school to possibly further inform our findings. These qualitative results concerning what participants liked most and least about school served to illuminate questionnaire responses. Finally, no study has compared alumni of conventional school programs with alumni of Montessori regarding school liking and its predictors. Because Montessori schools have rather different programs, they can serve to accentuate and clarify features that are associated with liking school.

The study's primary research questions were: How much do adults recall liking school (RQ1), what student or school features are associated with liking school more (RQ2), and is attending a Montessori school associated with remembering liking school more (RQ3)? These three research questions were addressed with seven sets of specific hypotheses, listed below.

- **H1**: Recalled school liking overall is tepid (**H1a**) and decreases for each level, such that people remember liking elementary school more than middle school (**H1b**), and middle school more than high school (**H1c**). Montessori alumni remember liking school overall more than conventional alumni (**H1d**).
- **H2**: Student demographics will be associated with school liking during each school level in that: adults who qualified for free or reduced-price lunch (FRPL) remember liking school less than those from wealthier families (**H2a**), adults who were on an Individualized Learning Plan (IEP) or 504 remember liking school less than those without such accommodations (**H2b**), men remember liking school less than women (**H2c**), and people of color remember liking school less than White adults (**H2d**).
- **H3**: School features associated with higher school liking are: higher sense of autonomy (**H3a**), higher test-taking confidence (**H3b**), higher interest in schoolwork (**H3c**), higher sense of community (**H3d**), and higher levels of disciplinary fairness (**H3e**). We test these hypotheses for each school level.
- **H4**: Administrative emphases associated with higher school liking are: lower emphasis on class rank (**H4a**), lower emphasis of punishment (**H4b**), lower emphasis on rewards (**H4c**), lower emphasis on standardized tests (**H4d**), and higher emphasis on studying topics of personal interest (**H4e**). We test these hypotheses for each school level.

H5: School funding sources will be associated with school liking, in that participants who attended private school will remember liking school more than students who attended public school.

H6: The school features considered above will be more prevalent for Montessori school alumni, specifically: higher sense of autonomy (**H6a**), lower test competency (**H6b**), and higher interest in schoolwork (**H6c**), sense of community (**H6d**), and sense of disciplinary fairness (**H6e**).

H7: Montessori school alumni will report lower emphasis on class rank (**H7a**), lower emphasis on punishment (**H7b**), lower emphasis on rewards (**H7c**), lower emphasis on standardized tests (**H7d**), and higher emphasis on studying topics of personal interest (**H7e**) than participants who attended conventional schools.

2 | METHOD

Adults in the United States responded to an online Qualtrics survey concerning how much they remembered liking school overall and during elementary, middle, and high school. We also asked, for each major school level, about characteristics of their school's social and academic environments that we hypothesized would be associated with school liking. Demographic information was also collected, with qualification for FRPL serving as a proxy for SES. Because Montessori schools are relatively uncommon (about 4% of US schools), purposive sampling was employed to obtain a sufficiently large subsample who attended Montessori. Using G*Power and an estimated effect size of .20 (based on prior research related school engagement and features), for 95% power, we calculated needing a total sample size of at least 619. The methods were approved by The University of Virginia Institutional Review Board.

2.1 | Participants

2.1.1 | Recruitment

Adults who had attended school in the United States during elementary, middle, and high school were eligible to participate. The survey was first posted on Amazon Mechanical Turk (MTurk). Of the initial 500 respondents, 52 (10%) had attended Montessori school during at least one of the three levels. To enlarge the Montessori sample, an email list (maintained by our laboratory) of Montessori alumni who had participated in prior research was sent an invitation to participate in a study of school memories and liking; people on this list initially had been contacted through such means as Facebook advertisements, MTurk, and schools' lists of former students and their contact information. For a validity check we compared the Montessori subsamples recruited from MTurk and the laboratory list on relevant variables and found no differences, suggesting the email sample was not skewed towards higher school liking (In fact, the MTurk Montessori subsample reported higher school liking). No reference to school type was made in the advertisement on MTurk nor in the emails to Montessori alumni. A total of 730 participants began the survey before data collection ended.

2.1.2 | Compensation and exclusions

MTurk participants received $0.50 (standard pay for a 20-minute survey on MTurk). Participants recruited via email had the chance to win a $125 Amazon gift card through a lottery drawing, held after every 250 participants to match the MTurk pay rate. From the final sample, 100 participants (13.7%) were excluded from analysis. Fifty-eight of these participants missed multiple attention checks or submitted nonsense or repeat answers, and 42 started but did not complete the survey. The final sample, used in most of the analyses reported here, included 630 participants.

2.1.3 | Grouping

Sample demographics for both the Montessori and conventional groups are in Table 1. Participants who indicated that they attended a Montessori school in elementary ($n = 110$), middle ($n = 63$), or high school ($n = 26$) on this or a prior survey (see above) were all included in the Montessori group ($n = 187$; this is not the sum of the n's at each level because many participants attended Montessori at more than one level). All other participants were in the conventional group ($n = 436$). These groupings were used for the middle and high school analyses as well as the qualitative analyses. For models and tests comparing features across school types, we consider only the data for elementary school, because only at that level was Montessori group large enough for such analyses (we call this group Montessori_E). An additional seven participants did not answer the questions about their specific school type at each level, so lacked sufficient data to be included in many of the models, but they were included in descriptive statistics for the overall sample when possible.

2.1.4 | Demographics

Participants' mean age was 35.8 years and roughly 70% of participants were below the age of 40 ($SD = 10.53$, range = 19–77). Fifty-three percent of participants were female, and 73.0% identified as White, 11.6% as Black or African American, 6.7% as Hispanic or Latino/a, and 4.8% as Asian; 2.7% did not specify race/ethnicity. Regarding childhood SES, 32.3% of participants were eligible for FRPL during elementary, middle, or high school. Additionally, 11.7% of participants had an IEP or 504 during at least one of the three levels. Although participant age

TABLE 1 Demographics

	Whole sample ($N = 630$*)	Conventional ($n = 436$)	Montessori ($n = 183$)
Gender			
Female	52.9%	48.2%	64.5%
Male	46.3%	51.8%	33.3%
Nonbinary	0.01%	0.002%	2.2%
Age	35.8 (10.53)	36.8 (11.0)	33.4 (8.9)
Race			
White	73.0%	68.5%	79.1%
Black	11.6%	13.1%	7.5%
Hispanic/Latinx	6.7%	7.2%	5.3%
Asian	4.8%	6.1%	1.6%
Other	3.9%	5.1%	6.5%
Had an IEP/504	11.7%	10.1%	16.0%
Qualified for FRPL	32.3%	35.6%	24.6%
Work in education	17.8%	6.6%	35.4%

Note: Students with disabilities included in the Individuals with Disabilities Act or Section 504 of the Rehabilitation Act may have an IEP or 504 plan to help ensure they receive necessary supports and accommodations throughout school. Work in education includes participants who listed education professions such as teacher, educator, principal, and head of school.

Abbreviation: IEP, Individualized Learning Plan; 504, 504 plan.

*The whole sample N includes seven participants whose school type was missing.

distributions were similar across the Montessori and conventional participants, there were some differences in other demographic features that will be addressed below.

2.2 | Measures

Most measures for this survey were adapted from earlier studies of school engagement and culture (described below). Our rationale in selecting these measures was that they addressed school liking or engagement, as well as the features hypothesized to relate to school liking. Most questions were asked three times, once for each school level; to reduce fatigue, we limited the number of questions when possible. A few measures were used for the first time in this study, as noted below. Below we describe the measures in the order in which participants saw them.

2.2.1 | Overall school liking

The survey began with three anchoring questions to set a framework for the school liking questions.

2.2.1.1 | *Anchoring questions*

The anchoring questions appeared first, before the school liking questions., and were answered with a 7-point Likert scale (*not at all* [1] to *very much* [7]). The first question, "As a child, how much did you like running errands with a parent?" was expected to elicit responses in the middle of the scale. The second question, "As a child, how much did you like eating a special treat such as birthday cake or Halloween candy?" was expected to elicit responses at the high end, and the final anchoring question, "As a child, how much did you like falling and scraping your knee?" was expected to elicit responses at the low end of the scale. These questions were asked once.

2.2.1.2 | *School liking questions*

To measure overall school liking, we next asked participants, "Overall, as a child, how much did you like school?" adapted from Ramey et al. (1998). Responses ranged from *not at all* (1) to *very much liked* (7) to match the anchoring questions. Although this measure has only one item, the findings from the original Ramey et al. study were replicated using a 9-item measure of school liking (Ladd et al., 2000), suggesting the validity of the single item (see also Burisch, 1984; Russell et al., 1989).

Next, three school levels were defined: "Elementary school refers to kindergarten through fifth or sixth grade, middle school/junior high refers to the time between elementary school and high school, and high school refers to ninth grade through twelfth grade." If participants switched schools during a level, they were asked to respond about the school they had attended the most during that school level. After the overall (throughout all schooling) question, participants were asked how much they liked school at each level, again using the Likert scale.

2.2.1.3 | *Favorite and least liked aspects*

Next, participants responded to the statement, "In general, what I liked **most** about going to school was:" by selecting one of four choices ("seeing my friends," "my teachers," "participating in extracurricular activities/sports," and "learning"), determined by open-ended responses in pilot testing. There was also a box labeled "Other" for write-ins. Next, they responded to an open-ended prompt: "In general, what I liked **least** about going to school was:". The second statement was open-ended because pilot testing showed considerable variation, leaving no clear set of choices.

For analysis of these two items, the first two authors read through the responses to "What did you like least about school?" and developed a coding scheme with five broad categories of responses and 2–4 subcategories within each broad category; the scheme is described in Results. An undergraduate research assistant and the

second author then coded all the data. Inter-rater reliability was high (kappa = .90); where there were disagreements, the author's coding was used.

2.2.2 | School features

The next part of the survey asked, for each level, about the school factors hypothesized to be associated with school liking. Thus, each of the questions in this section was asked three times. Three attention-check questions were interspersed.

2.2.2.1 | *Social environment*

Social environment factors hypothesized to influence school liking included sense of community and disciplinary fairness; they were measured on 7-point scales ranging from *strongly disagree* to *strongly agree*.

2.2.2.1.1 | *Sense of community.* Sense of community was measured with five items. Three were adapted from the Activities and Feelings Questionnaire used in the NICHD Study of Early Child Care (NICHD Early Child Care Research Network, 2004): "Students in my school really cared about each other," "Students in my school treated each other with respect," and "Students in my school were willing to go out of their way to help someone." Participants also rated their agreement with the statements: "I felt safe at school" (from the High School Survey of Student Engagement or HSSE; Yazzie-Mintz, 2007) and "I felt like I was part of my school community" (developed for this survey). These five items had high internal consistency (α = .91) and were averaged for a single sense of community score for each level.

2.2.2.1.2 | *Disciplinary fairness.* Disciplinary fairness was measured with two statements modified from the HSSE (Yazzie-Mintz, 2007): "My school's rules were fair" and "My school's rules were applied and enforced consistently." These statements were significantly correlated with one another (r = .54, p < .001) and were averaged.

2.2.2.2 | *Academic environment*

To address the academic environment, participants responded to questions about the degree to which their school allowed for autonomy, test-taking confidence, and interest in schoolwork. Responses for each all the items concerning the academic environment were on a 7-point scale ranging from *strongly disagree* to *strongly agree*.

2.2.2.3 | *Autonomy*

Autonomy, as noted earlier, is an important component of self-determination, along with competence and relatedness. Sense of autonomy was measured by participants' agreement with the statement: "I felt like I had no choice in the topics I was studying in school" (developed for this study, reverse coded). Two additional statements intended to assess individuality ("I felt like I could be myself at school" and "I felt like I had to conform to fit in with my peers at school") did not correlate and were dropped.

2.2.2.4 | *Test-taking confidence*

Competence, here referred to as test-taking confidence, was addressed by participant responses to: "I felt anxious taking tests" and "I was a good test taker." These statements were adapted from a study of school engagement (Kokotsaki, 2016). These two statements were significantly correlated with one another (r = .32, p < .001) and were averaged.

2.2.2.5 | *Interest in schoolwork*

Interest in schoolwork was measured through two items. The first statement ("I thought most of school was to keep us busy", from the Enjoyment and Motivation scales of Galton, Comber, & Pell [2002]) and the second

statement ("I was often bored in school"; NICHD Early Child Care Research Network, 2004) were highly correlated ($r = .48$, $p < .001$) and were averaged to create an interest score. Another statement ("I saw inherent value in the work I was being asked to do at school") was excluded because it was not correlated to the other statements.

2.2.2.5.1 | *Administrative emphases.* To address administrative emphases, we asked participants to indicate how much their school had emphasized five different practices during each school level using a Likert scale ranging from *not at all* (1) to *very much* (7). These questions were also adapted from the HSSE (Yazzie-Mintz, 2007). The rated practices were emphasis on class ranking, punishment, rewards, standardized tests, and provision of choice (studying topics of personal interest). These responses regarding administrative emphases were analyzed separately from the responses regarding the academic and social environment because they were intended to capture what students perceived as being the focus or priority of the school whereas the other questions had more to do with their subjective experience within that environment.

2.2.3 | Overall school liking: Round 2

The four overall school liking questions—one for all schooling and one for each level—were asked both at the beginning and the end of the survey; the purpose of repeating the questions was to reveal if the act of taking the survey—reflecting on their schooling—changed responses. Individual responses to these questions were highly correlated (overall: $r = .81$, elementary: $r = .84$, middle: $r = .83$, high: $r = .87$). Although paired *t*-tests revealed significantly higher overall school liking at the end of the survey ($M = 4.90$, $SD = 1.64$) than at the beginning ($M = 4.81$, $SD = 1.67$), for elementary, middle, and high school levels, answers to the *overall* liking question at the beginning and end of the survey did not differ significantly. For analyses, we averaged the beginning and end of survey responses both overall and for each level.

2.2.4 | Student characteristics and school type

Demographics were collected at the end of the survey, after the second set of questions about overall school liking and liking at each level. Demographic questions included whether participants qualified for free or reduced-price lunch, whether they had an IEP or 504 in school, their gender, race, age, and current profession (asked about out of a precaution that people who choose to be teachers might like school more). Additionally, participants reported whether they attended a public or private school and what type of school they attended during all three levels.

2.3 | Analytic approach

We used *t*-tests or multiple linear regression to test each set of hypotheses. First, all variables were checked for normal distributions. Elementary school liking scores were skewed towards positive responses (as is typical; see e.g. Morris et al., 2019), so Box-Cox transformations were performed on those responses; distributions were normal once the scores were squared. No other transformations were necessary.

When considering school liking overall (across all three school levels), we ran a multiple regression predicting overall liking from each of the participant characteristics that we thought would be associated with school liking: participant's current occupation (a dummy variable indicating whether they worked in education), gender, race, whether they had ever attended a private school, whether they had ever had an IEP/504, and whether they had ever attended a Montessori school. We included current occupation in our model

as a precaution because a much larger percentage of the Montessori sample (35.4%) than the conventional sample (6.6%) reported working as educators. We observed that current occupation, gender, Montessori attendance, and IEP/504 status were all significant predictors of overall school liking, so we included these variables as covariates in our models predicting school liking at each level, so as to control for individual characteristics when assessing the association between school characteristics and school liking. Race and whether a participant qualified for FRPL did not significantly predict school liking overall or at any level, so we did not include either variable as a covariate in the models. For the elementary, middle, and high school-specific models, the IEP/504 and public/private school variables indicated whether a participant had an IEP/504 or attended a private school during that specific level.

We were concerned that attending a Montessori school might alter the salience or importance of academic or social school features after one switched to a conventional school. For example, Montessori students are typically granted more autonomy, which might make autonomy more salient when evaluating how much one liked school. Therefore, we also tested for interactions between each of the predictors of school liking (sense of community, sense of autonomy, and so on), and the dummy variable indicating Montessori attendance. In the middle and high school models, the Montessori variable included all participants who had ever attended a Montessori school. For the elementary school models, the Montessori variable included only participants who were attending a Montessori school in elementary school; as mentioned previously, this was the only level for which the sample size allowed for direct comparisons across school types. We used model comparison (Maxwell et al., 2018) to test when it was appropriate to include an interaction term between the independent variables and the dummy variable for Montessori attendance. This process involved running multiple iterations of each model, with every possible combination of interaction terms between the Montessori indicator variable and each of the predictors. We compared model fit in each model using the Akaike information criterion (AIC) and Bayesian information criterion (BIC) scores. Here, we only report the results from the models with the best fit. The vif function in R was used to check for multicollinearity in all models, but none was found.

In testing H6 and H7, we compared responses of participants who attended Montessori elementary ($Montessori_E$) with participants who attended conventional elementary schools, controlling for the demographic variables revealed to predict school liking (see prior paragraph). $Montessori_E$ participants reported liking elementary school significantly more, so we ran follow-up regressions to compare means for each of our independent variables regarding elementary school type. We used the Bonferroni adjustment for multiple comparisons; there were 10 comparisons across these two hypotheses, so only findings where the *p*-value was < .005 (.05/10) were considered significant and are reported for this particular set of analyses. Finally, we used Chi-square tests to evaluate qualitative results by school type.

3 | RESULTS

We first present the findings using the whole sample's overall school liking (H1a) and school liking across levels (H1b and H1c). We then present findings predicting school liking at each level based on demographic characteristics of the student (H2), followed by specific school features (H3, H4, and H5). In these analyses we also examine interactions between Montessori attendance (at any time) and school features. Next, we zero in on the Montessori questions, first asking if school liking is higher (H1d), and then examining how school liking and features differ across Montessori and conventional subsamples' elementary level responses (H6, H7). Finally, we present what participants liked most and least about school (qualitative results).

3.1 | How much do people remember liking school? (H1a)

Participants remember liking school ($M = 4.86$, $SD = 1.57$) about as much as they remember liking running errands with a parent as a child, ($M = 4.80$, $SD = 1.68$), $t(619) = 0.54$, $p = .59$, $d = 0.01$, CI_{619} (d) [−0.08 to 0.10], significantly less than how

much they remember liking eating a special treat, (M = 6.02, SD = 1.26), $t(619) = -14.33$, $p < .001$, $d = -0.82$, CI_{619} (d) [−0.95 to −0.69], and significantly more than falling and scraping their knee, (M = 2.36, SD = 1.91), $t(619) = 28.8$, $p < .001$, $d = 1.36$, CI_{619} (d) [1.23–1.50] (see Figure 1, which also shows breakdown by school type, discussed below). As shown in Figure 2, school liking was highest in elementary school (M = 4.90, SD = 1.64), dipped to its lowest level in middle school (M = 4.43, SD = 1.67), and then increased slightly for high school (M = 4.76, SD = 1.78). Results concerning H1d (Montessori) are discussed below.

3.2 | Participant demographic features associated with liking school (H2)

Contrary to H2a, b, and d, there was no significant relation between qualifying for a free or reduced-price lunch or race and school liking, either overall or at any school level. In support of H2c, women remembered liking school more both overall (B = .33, $p < .006$, $\eta_p^2 = .01$, controlling for current profession and whether a participant ever had an IEP/504 or ever attended a private school or a Montessori school). Women also liked elementary school more (see Tables 2 and 3), but gender was not significantly associated with liking school in middle or high school. The coefficients and effect sizes for working in the education profession, gender, attending a private school, and IEP/504 status in the full models for each school level are shown in Tables 2 and 3.

3.3 | School features associated with liking school (H3)

Features of the academic and social environments contributed similarly to liking school during each level, with some slight variation, as shown in Table 2. The models below all control for gender, current profession, IEP/504 status, and private school attendance.

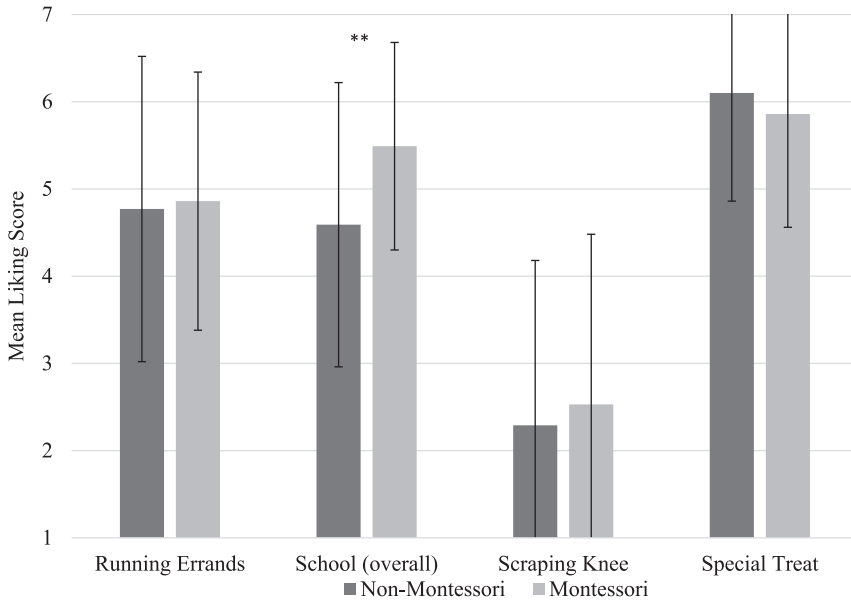

FIGURE 1 Mean liking scores by school type. Error bars show standard deviations. $^{***}p < .001$.

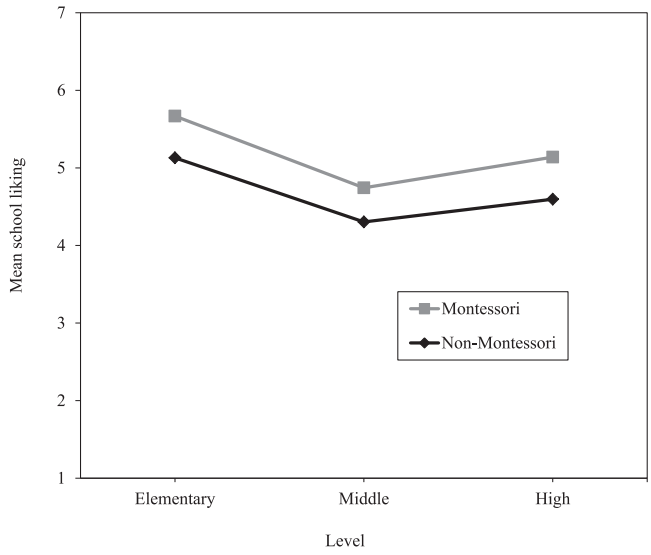

FIGURE 2 Mean school liking scores over time by school type. The Montessori group here includes all participants who attended a Montessori school at any level.

3.3.1 | Academic environment

Remembering the academic environment as supporting *Autonomy (H3a)* was positively associated with school liking, although only significantly so in middle and high school. Model fit was improved by including an interaction term between Montessori and autonomy in both elementary and high school; the interaction was significant only in high school, such that autonomy was positively associated with high school liking for all participants, but participants who had ever attended a Montessori school reported slightly lower levels of autonomy in high school. *Test-Taking Confidence (H3b)* was positively associated with school liking at each level; it was a significant predictor only in high school. *Interest in Schoolwork (H3c)* was positively and significantly associated with school liking at all school levels.

3.3.2 | Social environment

At each level of school, *Sense of Community (H3d)* was by far the strongest predictor of school liking (see Table 2). *Disciplinary fairness (H3e)* was positively associated with school liking at each level, but only significantly so during high school.

3.4 | Administrative emphases (H4)

Greater emphasis on grades/class rank predicted lower school liking (H4a), but the relation was only significant in elementary school. Emphasis on punishment (H4b) was also negatively associated with school liking, also only significant in elementary school. Emphasis on standardized tests (H4d) was inconsistently related to school liking across levels, yet only significantly in elementary school, when it was positively related. Also, across all school levels, a school's cultural emphasis on rewards (H4c) and on studying topics of personal interest (H3e) both significantly predicted greater school liking. See Table 3 for the complete model summary.

TABLE 2 Academic and social environment characteristics and school liking

Variable	*M*	*SD*	*B*	η_p^2
Elementary school				
Sense of community	5.21	1.26	6.69***	.29
Test taking confidence	4.71	1.43	.74	.01
Interest in schoolwork	4.03	1.70	1.49***	.04
Sense of autonomy × School type	3.56	1.56	.10	.00
Disciplinary fairness	5.41	1.88	.63	.00
Current profession	–	–	.45	.00
Gender	–	–	3.94***	.04
Public versus private school	–	–	−.91	.00
IEP/504	–	–	−1.38	.00
Middle school				
Sense of community	4.54	1.48	.81***	.47
Test taking confidence	4.39	1.47	.07	.00
Interest in schoolwork	3.58	1.57	.17***	.05
Sense of autonomy	3.48	1.32	.11*	.01
Disciplinary fairness	5.22	1.30	.03	.00
Current profession	–	–	.10	.00
Gender	–	–	.02	.00
Public versus private school	–	–	−0.05	.00
IEP/504	–	–	−0.18	.00
High school				
Sense of community	4.54	1.48	.81***	.44
Test taking confidence	4.39	1.47	.11*	.01
Interest in schoolwork	3.58	1.57	.24***	.09
Sense of autonomy × School type	3.48	1.32	.06**	.02
Disciplinary fairness	5.22	1.30	.15***	.02
Current profession	–	–	.09	.00
Gender	–	–	−.12	.00
Public versus private school	–	–	−.12	.00
IEP/504	–	–	−.16	.00

Note: Elementary school liking scores were transformed due to non-normality.
*$p < .05$.; **$p < .01$.; ***$p < .001$.

3.5 | School funding model and school liking (H5)

At all school levels, attending a private school predicted higher school liking than attending a public school, although the relation was only significant in middle school.

3.6 | Recollection of school liking among Montessori alumni (H1d)

As can be seen in Figures 1 and 2, participants who attended a Montessori school at any level remembered liking school overall ($M = 5.49$, $SD = 1.96$) significantly more than those who only attended conventional schools ($M = 4.59$, $SD = 1.63$), $B = .50$, $p = .002$, $\eta_p^2 = .02$, controlling for current profession, gender, whether a participant ever had an IEP/504, and whether a participant ever attended a private school.

3.7 | Predictors of school liking comparing the Montessori with the conventional elementary subsample (H6 and H7)

As previously mentioned, due to limitations of the Montessori sample size at the middle and high school levels, we only directly compared responses of participants who attended a conventional elementary school ($n = 508$) and those who attended a Montessori elementary school ($n = 110$). Therefore, in these analyses, the conventional school group includes some participants who attended a Montessori preschool or who later attended a Montessori middle or high school, and the Montessori group ($Montessori_E$) includes only participants who attended a Montessori school *during elementary school*.

Regarding H1d (at the elementary school level), the subset of Montessori alumni who attended Montessori elementary remember liking elementary school significantly more ($M = 5.65$, $SD = 1.17$) than alumni of conventional elementary schools ($M = 5.03$, $SD = 1.60$; $B = 5.59$, $p = .002$, $\eta_p^2 = .02$, controlling for current profession, gender, public/private school attendance, and IEP/504 status; recall that elementary school liking scores were transformed for analyses due to non-normality). To further examine potential differences on each of the independent variables, we ran multiple linear regressions comparing the $Montessori_E$ samples' mean responses and the mean responses of the conventional sample at the elementary school level. For all of these analyses, we controlled for current profession, gender, and public/private school attendance and IEP/504 status during elementary school.

There were no differences for autonomy (H6a). Using the Bonferrroni adjustment for multiple comparisons, there were two significant differences: $Montessori_E$ alumni reported a greater interest in their schoolwork (H6c), $B = 1.35$, $p < .001$, $\eta_p^2 = .08$; $M = 5.22$, $SD = 1.79$; $M = 3.76$, $SD = 1.56$ and a stronger sense of community (H6d), $B = .77$, $p < .001$, $\eta_p^2 = .04$; $M = 5.99$, $SD = 1.81$; $M = 5.04$, $SD = 1.25$, in their elementary schools.

With regard to administrative emphases, even using the Bonferroni adjustment, H7a-e were all supported. $Montessori_E$ alumni reported lower emphasis on grades and class rank, $B = -1.81$, $p < .001$, $\eta_p^2 = .09$; $M = 2.25$, $SD = 1.92$; $M = 4.33$, $SD = 1.87$, on punishment, $B = -1.74$, $p < .001$, $\eta_p^2 = .10$; $M = 2.41$, $SD = 1.80$; $M = 4.17$, $SD = 1.76$, on rewards, $B = -1.74$, $p < .001$, $\eta_p^2 = .09$; $M = 2.83$, $SD = 2.28$; $M = 5.04$, $SD = 1.70$, and on standardized tests, $B = -0.93$, $p < .001$, $\eta_p^2 = .03$; $M = 2.97$, $SD = 1.92$; $M = 4.29$, $SD = 1.85$. $Montessori_E$ alumni also reported a greater emphasis on studying topics of personal interest, $B = 1.90$, $p < .001$, $\eta_p^2 = .12$; $M = 5.84$, $SD = 1.45$; $M = 3.77$, $SD = 1.77$.

3.8 | Qualitative results: what participants reported liking most and least about school

3.8.1 | Liked most

For the entire sample, the most common answer for what participants liked most about school was "seeing my friends" (50.8% of respondents), followed by "learning" (26.4%), "participating in extracurricular activities" (14.6%), "teachers" (6%), and "other" (2.2%; see Figure 3). Of the 14 participants who selected "other" (2.2%), six wrote in two or more of the provided answers, two reported they were undecided, one wrote they did not like school at all, and the remaining five wrote miscellaneous answers like, "[School] got me out of the house," "Getting new clothes

TABLE 3 Administrative emphases and school liking

Level and emphasis	*M*	*SD*	*B*	η_p^2
Elementary school				
Standardized tests	4.06	1.92	.85*	.01
Studying topics of personal interest	4.13	1.89	2.45***	.10
Grade/Class rank	3.96	2.03	−1.04**	.01
Punishment	3.85	1.88	−.96**	.01
Rewards	4.64	2.00	1.01**	.02
Current profession	–	–	−2.92	.01
Gender	–	–	5.28***	.04
Public versus private school	–	–	.05	.00
IEP/504	–	–	.42	.00
Middle school				
Standardized tests	4.610	1.760	−.04	.00
Studying topics of personal interest	4.110	1.690	.41***	.16
Grade/Class rank	4.760	1.720	−.06	0.00
Punishment	4.660	1.770	−.01	.00
Rewards	3.990	1.900	.17***	.03
Current profession	–	–	−.04	.00
Gender	–	–	.05	.00
Public versus private school	–	–	−.37**	.01
IEP/504	–	–	−.19	.00
High school				
Standardized tests	5.10	1.69	.02	.000
Studying topics of personal interest	4.66	1.65	.47***	.18
Grade/Class rank	5.63	1.39	−.04	.00
Punishment	5.00	1.61	−.04	.00
Rewards	3.80	1.96	.18***	.04
Current profession	–	–	−.37*	.01
Gender	–	–	.17	.00
Public versus private school	–	–	.23	.00
IEP/504	–	–	−.15	.00

Note: Elementary school liking scores were transformed due to non-normality.
*$p < .05$.; **$p < .01$.; ***$p < .001$.

to start the school year," and "Doing better than my peers." A Chi-square test of independence revealed a significant relation between school type and what participants liked most about school, X^2 (4) = 30.05, $p < .001$. Forty percent of former Montessori students selected "learning" as what they liked most about school, compared to roughly 20% of conventional students.

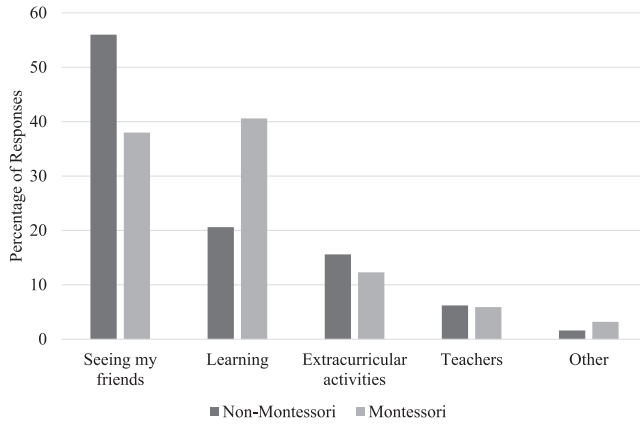

FIGURE 3 What participants liked most about school. The Montessori group here includes all participants who attended a Montessori school at any level.

3.8.2 | Liked least

The question about what participants liked least about school was open-ended. About 15% ($n = 95$) of responses were left blank or were uninterpretable (e.g., "co", "xx"), leaving 535 responses for analysis. These responses were sorted into five broad categories: the social environment (40.4%), academic factors like not liking specific subjects (34.8%), organizational rigidity (20.0%), the physical environment (2.1%), and miscellaneous (2.8%); interrater reliability was high and reported in Section 2. A Chi-square test of independence showed no significant relation between school type and the broad categories for what participants liked least.

4 | DISCUSSION

This study set out to examine how much adults recall liking school and what features predict school liking. We examined these factors for three different levels (elementary, middle, and high school) and for different school types (Montessori and conventional). Although there are other studies of school liking, we know of no studies that examined school liking with the same participants across all major school levels, examined the relations of a large set of school features with school liking, or that compared conventional school alumni with alumni of an alternative school system. Liking school is important in its own right, for societal well-being. Because liking school predicts school success, the results regarding school features associated with school liking, and how much conventional versus Montessori alumni liked school, also have implications for school reform.

4.1 | Summary of results

Overall, participants remembered liking school about as much as they liked running errands with their parent as a child—not as much as a getting a treat, but more than scraping their knee. Liking was highest in elementary school and lowest in middle school. Middle school liking might be lower because early adolescence is a time of considerable developmental significance marked by biological and cognitive changes (Wigfield et al., 2005), which could make middle school especially challenging. People who went to private schools reporting liking school more at each level, perhaps because private schools are less bound to state curricula and exams, and therefore can adjust

more to individual student needs. People who work in education also reported liking school more, which is not surprising. Next, we consider the predictors of school liking, then the findings regarding Montessori, a common alternative model that has many features we expected might predict school liking.

4.1.1 | Student characteristics

In terms of student characteristics, we found support for only one of our hypotheses, in that women remembered liking school more than men; this was only significant in elementary school and overall. This finding aligns with previous research showing girls, especially at younger ages, are more engaged in and like school more (e.g., Furrer & Skinner, 2003; Ramey et al., 1998; Skinner et al., 2008; cf Ladd et al., 2000). Some have suggested that girls' earlier maturation enables them to adjust better to the expectations of school at younger ages; another possibility is that more elementary school teachers are female, and the gender-alignment allows girls to form stronger relations with their teachers than boys do, which then influences liking. There were no significant differences between adults who qualified for FRPL and those who did not, between people of color and White people, nor people who had an IEP/504 and those who did not. It is possible that the sample was not sufficiently diverse in any of those characteristics to capture a difference.

4.1.2 | Academic environment features

The next set of analyses concerned academic and social characteristics that predicted school liking. In terms of the academic environment, a higher sense of autonomy predicted school liking in middle and high school. We had predicted that this would be the case, as autonomy is an aspect of self-determination, self-determination predicts intrinsic motivation and well-being (Ryan & Deci, 2000), and we tend to like what we are doing when we are intrinsically motivated and feel good. This is particularly important in middle school and beyond, and yet conventional middle schools often reduce student autonomy (relative to what they experienced in elementary school); this has been referred to as poor stage-environment fit between middle school psychology and conventional school models (Eccles & Roeser, 2009). There was also a significant interaction between Montessori attendance and autonomy in high school, with Montessori alumni reporting feeling lower levels of autonomy in high school. This should not be interpreted as a comparison of autonomy levels across school types in high school, because most of the Montessori participants attended conventional high schools. Rather, it might indicate that Montessori alumni rated the autonomy of their (typically conventional) high school lower than do people who never attended a Montessori school. This might be due to their having experienced greater autonomy earlier, while attending Montessori school.

Greater interest in schoolwork also predicted higher school liking, and this relation was significant at all school levels. Being interested translates into being engaged, and engagement predicts better performance. It is not surprising that people who found their schoolwork more interesting also liked school better.

Test-taking confidence was also a significant predictor of liking school, but only in high school. This might reflect that idea that tests take on more importance in high school, and that being confident in one's abilities on tests thus translates into a sense of self-determination (Ryan & Deci, 2000).

4.1.3 | Social environment features

For social environment, greater sense of community strongly predicted school liking at all levels. A large body of work supports the importance of a strong sense of community for thriving in school (Darling-Hammond et al., 2019),

and it makes sense that it would predict school liking at all levels. The other aspect of the social environment that we examined, disciplinary fairness, was a significant predictor of school liking only in high school. It may be the case that this is due to maturation, and that in high school students become more discerning regarding whether a disciplinary response is a fair one. By contrast, younger children might be more prone to accept adult authority, reflecting an earlier stage of moral development.

4.1.4 | Administrative emphases

Support for the hypothesized relations among administrative emphases and school liking was significant at the elementary school level for all five factors, but not always in the expected direction. Elementary school liking was predicted by *higher* emphasis on standardized tests and rewards. In fact, greater emphasis on rewards for positive or desirable behavior was associated with higher school liking at every level. This finding was surprising, because in general extrinsic rewards are associated with a reduced sense of self-determination and therefore well-being (Deci & Ryan, 2011). In retrospect at least, people remember liking school more when they also recall the school rewarding positive behavior. It would be interesting to know if, for example, the adults who reported this stronger association also recall doing well in school.

Emphasis on punishment and on grades and rank both predicted lower school liking as expected, but only in elementary school. It is surprising that these emphases were not negative predictors of liking middle and high school. At all school levels, recalling the school as emphasizing topics of personal interest predicted liking school. This is consistent with the finding that being interested in one's schoolwork predicts school liking.

4.1.5 | School type

School liking overall was higher for participants who had ever attended a Montessori school. This finding makes sense in that the Montessori model both in its pedagogy and in other research has been associated with higher levels of most of the factors that were positively related to school liking. When looking at elementary school specifically, several hypothesized relations were supported for school type. Participants who attended a Montessori elementary school ($Montessori_E$) remembered having greater interest in their schoolwork and sense of community in their elementary schools, as compared to participants who attended conventional elementary schools. Moreover, $Montessori_E$ participants reported lower emphasis on class rank, punishment, rewards, and standardized tests, but a greater emphasis on studying topics of personal interest. The $Montessori_E$ participants also remembered liking elementary school significantly more. It is surprising that the $Montessori_E$ participants did not report a significantly greater sense of autonomy in elementary school because of Montessori's emphasis on free choice and independence. Conventional school students are assigned most of their schoolwork, whereas Montessori students can choose what to work on. Either this does not translate into autonomy, or sense of autonomy is so context-dependent that it is difficult to compare across contexts.

4.1.6 | Qualitative results

Participants' least favorite aspect of school was the social environment (especially bullies) followed by the academics and the organizational rigidity. This showed little variation by subsample. However, what participants liked most and least about school differed between Montessori and conventional students. Seeing friends was the best part of school for most (56%) of the conventional sample; a much smaller portion (38%) of the Montessori sample selected the same option. This might suggest that Montessori schools do not have a positive social climate,

and it is the case that 25% of the Montessori sample (compared to 15.1% for conventional) said that the social milieu was what they liked least about school. On the other hand, other research shows that Montessori schools have a more positive social climate than other schools (Lillard & Else-Quest, 2006; Rathunde & Csikszentmihalyi, 2005a; 2005b), and Montessori students are more socially attuned (Denervaud et al., 2020; İman et al., 2017), have more developed theory of mind (Lillard & Else-Quest, 2006; Lillard et al., 2017), and report higher well-being in adulthood, with duration of Montessori attendance significantly predicting adult social engagement (Lillard et al., 2021). The present finding regarding social climate might be the result of participants needing to specify *something* as "least well liked," and conventional alumni having more strongly disliked features that Montessori schools lack (like tests and grades).

Montessori students were also significantly more likely than conventional participants to select "learning" as what they liked most about school even after they left Montessori school, and interest in schoolwork was consistently higher across time for the Montessori participants. Selection factors might explain these differences: Parents who choose to send their children to Montessori schools might teach their children to value school more, provide more educational support, or continue to select schools based on specific criteria. Another explanation could be that exposure to the Montessori method and philosophy has a lasting impact on one's attitude towards education and learning. The latter explanation is supported by research demonstrating that early school adjustment can predict important later outcomes like educational attainment (Magnuson et al., 2016) and that school enjoyment as early as age six predicts later educational achievement as accurately as socioeconomic background and gender do (Morris et al., 2019). Further research following children who were randomly assigned to Montessori preschool and later attended other types of school would help address whether the effect is due to selection or the program itself.

These data suggest Montessori students might have a more positive subjective experience in school than conventional students. Previous research has demonstrated positive academic outcomes for Montessori students (e.g., Ansari & Winsler, 2014, 2020; Brown & Lewis, 2017; Culclasure et al., 2018; Denervaud et al., 2019; Dohrmann et al., 2007; Lillard & Else-Quest, 2006; Lillard et al., 2017; Mallett & Schroeder, 2015; Snyder et al., 2021). Considering the relation between school liking and academic achievement observed in conventional school students, Montessori alumni's higher school liking scores might explain, at least in part, their higher academic achievement.

4.2 | Practical implications

These results suggest that students' attitudes towards school could be improved through practices that are known to raise interest like increasing student autonomy (Patall et al., 2010), and increasing student interest by increasing choice and perhaps by making more explicit connections between course material and students' personal lives (Hidi & Renninger, 2006). Additionally, the importance of having a sense of strong community at school cannot be overstated. At each time point, for both the Montessori and conventional samples, a strong sense of community best-predicted school liking. This finding is consistent with previous research demonstrating that school climate, school attachment, sense of belonging at school, and school safety are all highly related to outcomes like motivation, attendance, behavior, and achievement (Coker et al., 2018; Furrer & Skinner, 2003). Factors that improve sense of community, like looping, peer learning, and omitting tests and grades, could be influential. Improving school liking for current students is a worthwhile effort given school liking's positive association with important outcomes like academic achievement and participation (Ladd, 2000; Ladd & Dinella, 2009), and is important for societal well-being in its own right.

4.3 | Limitations and future directions

The main limitation of this study is that it is retrospective; one would ideally study current students longitudinally. While research has demonstrated that adults provide reliable retrospective reports on emotionally-laden issues

(Baldwin et al., 2019; Nivison et al., 2021), retrospective accounts on school liking have not been studied. Thus, a longitudinal study exploring school liking and its contributing factors concurrently with students' progress through school would likely provide richer and more reliable data.

Additionally, we did not collect demographic information about the specific schools attended, to get information about such factors as school size, surrounding neighborhood, graduation rate, student demographics, teaching staff, and myriad other features that could meaningfully influence school liking. Future research should investigate if and how these characteristics relate to variables associated with school liking. For example, school size might influence the sense of community within a school, or experienced teaching staff might relate to disciplinary fairness as more experienced teachers tend to have strong classroom management skills (Darling-Hammond, 2019). The retrospective nature of the study also prohibited us from gauging the role of Student–teacher relationships specifically in defining students' sense of community at school, but these are known to be vital (Furrer & Skinner, 2003).

Additionally, some study constructs were measured with one or two items. Although the items were highly inter-correlated in our study, ideally constructs are measured with more items. The decision to reduce measures was made to reduce participant fatigue that can stem from repeatedly answering the same questions. Participants had to respond many items several times, overall and for each level. For this reason, we used fewer items for each construct, but future work might take the present results as a starting point and use more items to measure constructs of interest.

With regard to the sample, although race was unrelated to school liking, White people were overrepresented in the Montessori group (80.9% White; vs. 71.2% White in the overall sample; and 76.3% White in the population; US Census Bureau, 2019). Public Montessori schools serve a greater proportion of students of color than public schools overall (Debs,), and a more diverse sample would likely better represent these students. Similarly, a lack of diversity in our sample overall may explain why we did not observe differences in school liking by race—we may have lacked power to detect such a difference. Finally, the Montessori middle and high school samples were too small for direct comparison to conventional students during those levels. Montessori middle and high schools are less prevalent than preschools and elementary schools (Hilty et al., 2021). However, targeting people who attended Montessori middle and high school would allow for this analysis.

5 | CONCLUSION

The unique contributions of this study are (1) showing how a wide range of school features predict recalled school liking, (2) examining data for all school levels using a single sample of participants, and (3) comparing recalled school liking and its predictors across conventional and Montessori schools. With the limitations in mind, the study suggests that adults generally remember tepid levels of school liking across all of school, but that when adults recollect their schools as emphasizing personal interest, rewards for positive behavior, community, and (in middle and high school) autonomy, they also reported liking school more. Disciplinary fairness and test-taking confidence were important predictors in high school. These relations should be confirmed with current students, but they provide an entry point for future research into how students' subjective experiences in school can be improved—a worthwhile endeavor not only for promoting children's well-being but because of school liking's relation to academic achievement, as well. Montessori alumni reported liking school more, and Montessori schools have many of the features that predict higher school liking, which might explain positive academic and well-being outcomes of Montessori students. The results of this study also suggest avenues and reasons for school reform.

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