

## The Kids Are Alright II: Social Engagement in Young Adulthood as a Function of K-12 Schooling Type, Personality Traits, and Parental Education Level

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### Abstract

To examine the issue of socialization, a survey study of 112 18-25 year olds who were homeschooled (n=52), publicly schooled (n=51), or privately schooled (n=9) during K-12 was conducted. Information about extracurricular activities during K-12 and young adulthood was collected, the Big Five Inventory was completed, and information about leadership, political participation, and parents' levels of education was collected. ANOVAs revealed no difference in extracurricular participation during K-12 due to schooling type, but there were higher levels of volunteer activity and political participation among formerly homeschooled young adults, with large effect sizes. Former homeschoolers were higher in openness, conscientiousness, and agreeableness, and lower in neuroticism. There were no effects of parent's level of education, and no effect of personality traits on levels of participation in extracurriculars. These findings suggest that formerly homeschooled young adults have been adequately socialized so that they can fit in within their social milieu, and that their personalities may have been positively affected by their family's homeschool strategy.

**Keywords:** Homeschooling, socialization, extracurriculars, personality

### Introduction

HOMESCHOOLING, WHICH IS defined by the Department of Education as “school-age children (ages 5-17) in a grade equivalent to at least kindergarten and not higher than 12th grade who receive instruction at home instead of at a public or private school either all or most of the time” (US Department of Education, 2017a), nearly doubled between 1999 and 2012 (US Department of Education, 2017b). Because of the COVID-19 pandemic, all schoolchildren experienced some degree of learning from home for a period of time, and the rate of parents reporting that they were homeschooling their children increased from 5.4% in spring of the 2019-2020 school year to 11.1% in fall of the 2020-2021 school year (Eggleston & Fields, 2021). Many families will likely continue with homeschooling, even after the pandemic has ended (Prothero & Samuels, 2020).

Although most parents who consider homeschooling their children report that their top reason is the social situation at schools (McQuiggan, et al., 2017; Redford, et al., 2017), they are often unsure about whether they can accomplish socialization on their own. The term “socialization” can mean many things; for the purposes of the current study, we use the term to refer to participation in activities outside of the nuclear family, which may broaden a student’s experience, and affect their degree of social engagement in young adulthood.

As Kunzman and Gaither (2013) reported, most research into the benefits and deficits of homeschooling has focused on the social aspects – whether children have playmates, are

exposed to a variety of people, learn to get along with others, learn to appreciate diversity, and so on – suggesting that researchers are also concerned about parents’ ability to fully socialize their children. Many developmentalists believe that children’s identity development depends upon interaction with their peer group (e.g. Erikson, 1968; Fuligni, 2019; Harris, 2011). As Harris (2011) points out, the role of all parents is to seek out beneficial situations and foster desirable relationships for their children.

One way that parents who choose to homeschool ensure adequate opportunity for socialization with the peer group is through participation in extra-curricular activities. As Seiver and Pope (2021) reported in their survey of 18-25 year olds, those who were predominantly homeschooled during the kindergarten – 12<sup>th</sup> grade (K-12) years engaged in the same types of extracurricular activities and at the same rate as their traditional-school peers. This finding suggests that homeschool parents seek out opportunities for their children to engage with others just as much as parents of traditional-school children do. Most research on the subject reports that formerly homeschooled young adults engaged in more club activities (Seiver & Pope, 2021) and more volunteer work (Seiver & Pope, 2021; Galloway, 1998 as cited in Medlin, 2006; Ray, 2004) since turning 18 than formerly traditional-school young adults did. However, Hill and Den Dulk (2013) discovered that formerly homeschooled young adults were significantly less likely to volunteer than their religious private schooled or public schooled cohorts, and they attributed the difference to religious teachings. In contrast, Sikkik and

## Seiver and Pope

Skiles (2015) found that young adults who were homeschooled in a religious family were *less* likely to volunteer, but only if the researchers eliminated volunteering within the respondents' congregation. In other measures of civic engagement, Sikkik and Skiles found no differences based on type of schooling. Rubin, et al. (2002) argued that engagement in extracurricular activities is a good stand-in for measuring interpersonal skills, so in the current study, we will use participation in extracurricular activities in young adulthood as our measure of interpersonal skills.

Participation in extracurricular activities may be influenced more by individual personality traits than by schooling type. For example, Corrigall and Schellenberg (2015) found that openness to experience was associated with initiating and continuing in music lessons between the ages of 10 and 12. It is possible that formerly homeschooled young adults have different personality traits than formerly traditional-schooled young adults, and that could affect their participation in extracurriculars in young adulthood. Indeed, White, et al. (2009) found that formerly homeschooled college students were higher in openness, agreeableness, and conscientiousness than their traditional-schooled peers. Seiver and Pope (2021) provided support for this, by showing that in young adulthood, formerly homeschooled young adults reported participating in more prosocial extracurricular activities – namely, more participation in clubs and more volunteer work. Perhaps this higher rate of prosocial participation was a function of higher rates of openness to experience, or agreeableness, or conscientiousness. For the current study, we included the Big Five Inventory (John, et al., 1991; John, et al., 2008) to assess the personality traits of extraversion, openness to experience, conscientiousness, neuroticism and agreeableness, so that we could determine whether personality traits or schooling type was the best explanation for differences in extracurricular activities in young adulthood.

Medlin (2000) asserted that homeschooled children have better leadership skills than traditional-schooled children. In a nationwide sample of college students, Sutton and Galloway (2000) found that homeschoolers were more likely to take on leadership roles, and to stay in leadership roles longer, than their traditionally educated peers. Based on these findings, we predicted for the current study that previously homeschooled young adults would have had more experience in leadership roles.

Because participation in youth voluntary associations has been correlated with more participation in political activities (McFarland & Thomas, 2006), and because Seiver and Pope (2021) found that formerly homeschooled young adults participated in more clubs than formerly traditional-schooled young adults did, we predicted for the current study that formerly homeschooled young adults would be more politically active than traditional-schooled young adults.

For the current study, we also considered the possibility that parental level of education could contribute to the rate of participation in extracurriculars at all ages. The current study was conducted in Washington state, where a parent must have completed at least 45 quarter credits (which is equivalent to one year) of college, or have completed a parent qualifying course at a technical or community college (Revised Code of Washington

28A.225.010(4)(b)) in order to homeschool one's children without the supervision of a professional teacher. Because of this requirement, it is possible that the average Washington state homeschooling parent has a higher level of education than the average Washington state parent of a traditional-school child. The data supports this concern: Eccles, et al. (2003) reported that 46% of the mothers in their traditional-schooled sample had no more than a high school diploma, and according to the National Center for Education Statistics (2016), in 2014, 30% of all 5-17 year old children had parents whose highest level of education was high school. Wise (2020) has argued that socioeconomic status (SES) may be a major confound in the research on homeschooling; level of parental education can serve as a stand-in for the concept of SES, and if homeschooling parents have a higher level of education, their families may enjoy a higher SES. The data support this interpretation: According to the National Center for Education Statistics (Redford, et al., 2017), 80% of homeschool families are non-poor, compared to 72% of traditional school families (NCES, 2020).

Socioeconomic status (SES) may be an important factor in determining extracurricular participation. It is possible that the differences Seiver and Pope (2021) found in volunteering and club participation were strictly a function of young adults continuing in activities that they had begun when they were children, and they had begun them as children because parents who had higher SES placed their children in more activities. Because Seiver and Pope (2021) found that there was a significant direct correlation between participation rates in the school years and participation rates in young adulthood, this interpretation will be explored in the current study.

For the current study, we predicted that neither personality traits nor parental level of education would determine participation in prosocial extracurriculars (i.e. clubs and volunteer work) in young adulthood, but that type of schooling during the K-12 years would. We also predicted that formerly homeschooled young adults would report having played a leadership role in their extracurricular activities at a higher rate than traditionally educated young adults, and that formerly homeschooled young adults would report a higher rate of political engagement.

## Method

### Respondents

RESPONDENTS WERE RECRUITED via online college and university class postings in the Puget Sound area, homeschool group chat boards in Washington state, and social media. A snowball recruitment technique was employed, in which each contact was asked to pass the survey's URL on to anyone who might qualify for the study. Contacts were encouraged to pass the URL outside of the Puget Sound area, in the hopes of recruiting respondents from a variety of locations. In the end, the sample consisted of 112 respondents aged 18-25 ( $M_{age}=20.13$ ,  $SE=.21$ ; 78 were female; 102 were from Washington state). They reported the type of schooling they predominantly experienced during the elementary years, the middle school years, and the high school years, and we determined their schooling type by using their most common response across the three age brackets. There were 52 Homeschooled ( $M_{age}=20.50$ ,  $SE=.31$ ; 36 were

## Social Engagement and Schooling Type

female; 44 were living in Washington state), 51 Public schooled ( $M_{age}=19.76$ ,  $SE=.29$ ; 38 were female; 38 were living in Washington state), and nine Private schooled ( $M_{age}=20.11$ ,  $SE=.82$ ; four were female; six were living in Washington state). The majority (78.6%) of respondents lived in Washington state during their K-12 education; one respondent each lived in Arizona, Colorado, Guam, Idaho, Kentucky, Massachusetts, Ohio, South Carolina, and West Virginia; two respondents lived in Florida and two in Utah; three lived in California.

### Materials

The survey was delivered via Survey Monkey.

The Big Five Inventory (John, et al., 1991; John, et al., 2008) was used to assess personality traits. The prompt “I see myself as someone who . . .” was presented at the top of the screen, and 44 Likert-type items assessing the five traits of conscientiousness (e.g. “. . . does a thorough job”), agreeableness (e.g. “. . . is helpful and unselfish with others”), neuroticism (e.g. “. . . is depressed, blue”), openness to experience (e.g. “. . . is original, comes up with new ideas”), and extraversion (e.g. “. . . is talkative”) were presented below. Response options were on a 5-point scale, ranging from “disagree strongly” to “agree strongly,” with higher scores indicating that the respondent is higher on that trait. Cronbach’s alpha were computed for each subscale for this sample, and each exceeded the .70 cutoff described by Nunally (1978): Conscientiousness,  $\alpha=.74$ ; agreeableness,  $\alpha=.81$ ; neuroticism,  $\alpha=.80$ ; openness to experience,  $\alpha=.74$ ; extraversion,  $\alpha=.85$ .

Extracurricular activities during the elementary school years (ages 5-11), the secondary school years (ages 12-17) and the young adult years (18+) were assessed with the prompt, “Please check any activity you were involved with or participated in for at least one year. Please check the age group you were when you participated in the activity. If you participated in an activity during more than one age group, please mark each age group.” The activities were grouped by category, and examples were provided for each category to facilitate recall. An “other” option was provided for each category, and a textbox was provided for respondents to indicate activities which had not been listed. The first column in the matrix was labeled “Age 5-11 years,” the next was labeled “Age 12-17 years,” the next was labeled “18+ years,” and the final column was labeled “Served a leadership role.”

The categories were inspired by Eccles et al. (2003), and consisted of Volunteer: Church service projects, community service, Boy Scouts service project/community service, Girl Scouts service project/community service; Scholastic Extras: Student body, debate, science club, history club, robotics, honor groups, mock trial competition; Performance/Fine Arts: Art group, band, choir, drama production/class, dance/drill team/flag corps, orchestra; Sports Teams: Baseball/softball, basketball, football/rugby, soccer/lacrosse, swim team, wrestling/martial arts, track and field/cross country, ski team, gymnastics, tennis, hockey, archery, volleyball, cycling/BMX, skateboarding/surfing, climbing, horse related; Other Clubs: Girls Scouts of America, Boy Scouts of America, church youth group, young Republican/Democrat, chess club.

Respondents could select as many ages as was appropriate per row, and could also select the leadership choice. Civic

Engagement was measured with yes/no options for the following prompts: registered to vote; had voted in a local, state, or national election; had volunteered in a candidate’s campaign; had participated in a town hall meeting; had participated in a political protest.

To determine the type of schooling the respondent had experienced, these instructions and definitions were provided:

“Please indicate the age ranges you were:

- Homeschooled: No more than 10 hours per week of instruction at a public or private school
- Public schooled: At least 20 hours per week of instruction at a public school
- Private schooled: At least 20 hours per week of instruction at a private school

“If you experienced more than one type of schooling during an age range, please select the educational type that was the most common for you during those years.”

Beneath these instructions was a matrix with the types of schooling (homeschool, public school, private school, early college or Running Start) in the columns and the age ranges (5-10, 11-13, 14-15, and 16-17) in the rows. Respondents could select one schooling type per row.

On the demographics page were questions for sex (male or female), age (with a textbox to enter a two-digit number), and drop-down menus to select the state in which the respondent currently lives, where they predominantly lived between the ages of 13 and 17, and between the ages of 5 and 12. The final response matrix asked for the highest level of education each of their parents had achieved. One row was labeled “Mother,” and one was labeled “Father,” and the columns were labeled “High School,” “Some College, no degree,” “Technical School/Certificate Program,” “Associate Degree,” “Bachelor Degree,” “Master Degree,” and “Doctorate” One option could be selected for each row/parent.

### Procedure

The recruitment script, seeking young adults aged 18-25 years old, was posted in online college and university classes, on homeschool chat boards, and on other social media. The hyperlink to the survey was provided in the script, and respondents were encouraged to pass the hyperlink to others who were in the 18-25 year age range. Respondents completed the survey items in the order described in the Materials section.

### Results

THERE WAS NO significant relationship between the proportion of 16-17 year olds who attended early college/Running Start and type of schooling ( $\chi^2(2, N=112)=0.15, p>.05$ ): 37% of homeschooled, 39% of publicly schooled, and 33% of privately schooled 16-17 year olds attended early college. Because of this, only the responses for the age groups between 5 and 15 years of age were used in determining the schooling type.

The total number of activities per category per age group was calculated for each respondent. If a respondent selected “other” for a category, we assessed the textbox, and counted the number of activities that were listed there. Pearson’s correlations revealed that those who reported a higher number of

extracurricular activities when they were 5-11 years old ( $M_{5-11}=3.59$ ,  $SE=.32$ ) reported a higher number of activities when they were 12-17 years old ( $M_{12-17}=4.39$ ,  $SE=.29$ ), and those who reported more activities when they were 12-17 years old reported more activities when they were 18 years or older ( $M_{18+}=2.35$ ,  $SE=.22$ ). The correlation between the number of activities reported for the 5-11 age period and the 18 and over age period was not significant (see Table 1). For the remaining analyses involving activities, we collapsed the responses into only two age groups: 5-17 and 18+.

**Table 1**

*Pearson's correlations between the number of activities at each age category with the number of activities at each of the other age categories.*

|       | 12-17  | 18+    |
|-------|--------|--------|
| 5-11  | .634** | .152   |
| 12-17 |        | .450** |

\*\* Correlation is significant at the 0.01 level, one-tailed.

## Big Five Personality Traits

**Table 2**

*Pearson's correlations between the number of activities at each of the age categories and Big Five personality traits.*

|            | Extraversion | Agreeableness | Conscientiousness | Neuroticism | Openness |
|------------|--------------|---------------|-------------------|-------------|----------|
| Volunteer  | .5-17        | .002          | .186              | .253**      | -.223*   |
|            | 18+          | .016          | .247*             | .295**      | -.225    |
| Scholastic | 5-17         | .176          | -.019             | .128        | -.006    |
|            | 18+          | .105          | .031              | .083        | .052     |
| Artistic   | 5-17         | .155          | .012              | .056        | .053     |
|            | 18+          | -.112         | .013              | .107        | .033     |
| Sports     | 5-17         | .247**        | -.009             | .202*       | -.168    |
|            | 18+          | .114          | -.066             | .136        | -.145    |
| Clubs      | 5-17         | .171          | .153              | .287**      | -.268**  |
|            | 18+          | .023          | .184              | .182        | -.246    |
| Leadership |              | .242*         | .094              | .290**      | -.430**  |
| Political  |              | .209*         | .009              | .282**      | -.251**  |

\* Correlation is significant at the 0.05 level, one-tailed.

\*\* Correlation is significant at the 0.01 level, one-tailed.

To determine whether different schooling types were associated with different scores on the Big Five traits, a series of ANOVAs was run (see Figure 1). There was no significant difference in extraversion as a function of schooling type ( $F<1$ ). The degree of agreeableness varied as a function of schooling type ( $F(2, 95)=7.30$ ,  $MSE=246.90$ ,  $p=.001$ ,  $\eta^2=.133$ ). Tukey's post hoc analysis revealed that formerly homeschooled young adults scored highest ( $M=36.77$ ,  $SE=.88$ ) and publicly schooled scored lowest ( $M=32.09$ ,  $SE=.87$ ), and privately schooled scored in between, and not significantly different from, the other two ( $M=33.88$ ,  $SE=1.72$ ). The degree of conscientiousness varied as

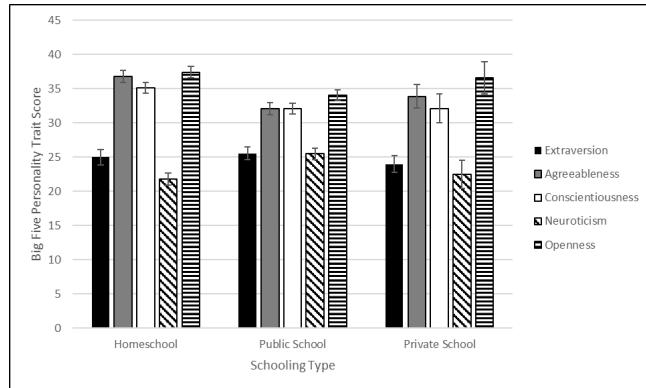
Pearson's correlations were computed among each of the Big Five traits, and each category of extracurricular activity (see Table 2). Extraversion was directly correlated with sports participation during K-12 ( $r(109)=.247$ ,  $p=.01$ ), with serving in a leadership role ( $r(109)=.242$ ,  $p=.01$ ), and with political participation ( $r(109)=.209$ ,  $p=.03$ ). Agreeableness was directly correlated with volunteerism during young adulthood ( $r(108)=.247$ ,  $p=.01$ ). Conscientiousness was directly correlated with volunteerism during K-12 ( $r(105)=.253$ ,  $p=.01$ ) and young adulthood ( $r(105)=.295$ ,  $p=.002$ ), sports during K-12 ( $r(105)=.202$ ,  $p=.04$ ), clubs during K-12 ( $r(105)=.287$ ,  $p=.003$ ), serving in a leadership role ( $r(105)=.290$ ,  $p=.003$ ), and political participation ( $r(105)=.282$ ,  $p=.004$ ). Neuroticism was inversely correlated with volunteerism during K-12 ( $r(107)=-.223$ ,  $p=.02$ ) and young adulthood ( $r(107)=-.225$ ,  $p=.02$ ), clubs during K-12 ( $r(107)=-.268$ ,  $p=.005$ ) and young adulthood ( $r(107)=-.246$ ,  $p=.01$ ), serving in a leadership role ( $r(107)=-.430$ ,  $p<.001$ ), and political participation ( $r(107)=-.251$ ,  $p=.009$ ). Openness was directly correlated with volunteerism during K-12 ( $r(105)=.302$ ,  $p=.002$ ), arts during K-12 ( $r(105)=.216$ ,  $p=.027$ ) and young adulthood ( $r(105)=.232$ ,  $p=.017$ ), and clubs during K-12 ( $r(105)=.247$ ,  $p=.011$ ).

a function of schooling type ( $F(2, 95)=3.72$ ,  $MSE=110.81$ ,  $p=.028$ ,  $\eta^2=.073$ ). Tukey's post hoc analysis revealed that formerly homeschooled young adults scored highest ( $M=35.14$ ,  $SE=.80$ ) and publicly schooled ( $M=32.11$ ,  $SE=.81$ ) and privately schooled ( $M=32.13$ ,  $SE=2.13$ ) scored lower, and not significantly different from each other. The degree of neuroticism differed as a function of schooling type ( $F(2, 95)=4.71$ ,  $MSE=155.45$ ,  $p=.011$ ,  $\eta^2=.090$ ). Tukey's post hoc analysis revealed that formerly publicly schooled young adults scored higher ( $M=25.49$ ,  $SE=.82$ ), and homeschooled ( $M=21.84$ ,  $SE=.89$ ) and privately schooled ( $M=22.50$ ,  $SE=2.08$ ) scored

lower, and not significantly different from each other. The degree of openness to experience differed as a function of schooling type ( $F(2, 95)=4.09$ ,  $MSE=131.42$ ,  $p=.02$ ,  $\eta_p^2=.079$ ). Tukey's post hoc analysis revealed that formerly homeschooled young adults scored higher ( $M=37.44$ ,  $SE=.88$ ), but not significantly different from privately schooled ( $M=36.63$ ,  $SE=2.35$ ), and publicly schooled ( $M=34.06$ ,  $SE=.79$ ) scored significantly lower than both.

**Figure 1**

Mean score on Big Five traits as a function of school type.



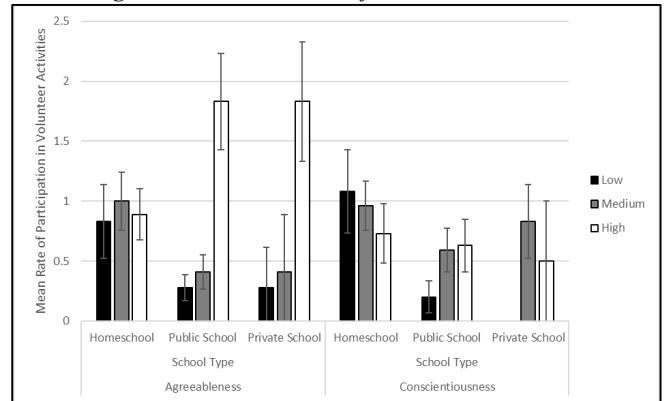
Note. Error bars show standard errors. On this inventory, the number of items that measure each trait varies. Minimum score on extraversion and neuroticism is 8, maximum is 40. Minimum score on agreeableness and conscientiousness is 9, maximum is 45. Minimum score on openness is 10, maximum is 50.

To examine whether school type interacted with those Big Five traits that were significantly correlated with extracurricular activities in young adulthood, leadership, and/or political participation, each of the Big Five traits was converted into discrete independent variables. First, the scores were split into quartiles, and then the middle two quartiles were combined into one group. This process resulted in the bottom 25% of scores being labeled "low" on the trait, the middle 50% of scores being labeled "medium," and the top 25% of scores being labeled "high" on the trait. A series of ANOVAs was computed on the DVs that were significantly correlated with a trait. Only the results that were significant at the  $p<.05$  level will be reported here.

The interaction between agreeableness and school type was significant for volunteering in young adulthood ( $F(4, 103)=2.90$ ,  $MSE=2.32$ ,  $p=.025$ ,  $\eta_p^2=.101$ ). Whereas formerly homeschooled young adults volunteered at roughly the same rate, whether they were low ( $M=.83$ ,  $SE=.31$ ), medium ( $M=1.00$ ,  $SE=.24$ ), or high ( $M=.89$ ,  $SE=.22$ ) in agreeableness (see Figure 2), formerly publicly schooled and formerly privately schooled young adults volunteered much more in young adulthood if they were high in agreeableness ( $M=1.83$ ,  $SE=.40$  and  $M=1.83$ ,  $SE=.50$ , respectively) than if they were low ( $M=.28$ ,  $SE=.11$  and  $M=.28$ ,  $SE=.33$ , respectively) or medium ( $M=.41$ ,  $SE=.14$  and  $M=.41$ ,  $SE=.48$ , respectively) in agreeableness.

**Figure 2**

Mean rate of participation in volunteer activities in young adulthood as a function of school type and level of agreeableness and level of conscientiousness.



Note. Error bars show standard errors; in some conditions, the bars are truncated because of high variability.

The interaction between conscientiousness and school type was significant for volunteering in young adulthood ( $F(4, 103)=3.06$ ,  $MSE=2.43$ ,  $p=.020$ ,  $\eta_p^2=.106$ ). Formerly homeschooled young adults volunteered more than formerly publicly or privately schooled young adults, whether the formerly homeschooled were low ( $M=1.08$ ,  $SE=.35$ ), medium ( $M=.96$ ,  $SE=.20$ ), or high in conscientiousness ( $M=.73$ ,  $SE=.25$ ; see Figure 2). In the medium category of conscientiousness, formerly privately schooled young adults volunteered more ( $M=.83$ ,  $SE=.31$ ) than formerly publicly schooled ( $M=.59$ ,  $SE=.18$ ), whereas formerly publicly schooled young adults volunteered more than formerly privately schooled young adults in the low category ( $M=.20$ ,  $SE=.13$  and  $M=.00$ ,  $SE=.00$  respectively) and in the high category ( $M=.63$ ,  $SE=.22$  and  $M=.50$ ,  $SE=.50$  respectively) of conscientiousness.

#### Parental Education

The categories of parental education were collapsed into four groups: High School ( $n=23$  for mother;  $n=22$  for father), Some College, Technical/Certificate, or Associate Degree ( $n=44$  for mother;  $n=35$  for father), Bachelor Degree ( $n=26$  for mother;  $n=26$  for father), Advanced Degree ( $n=15$  for mother;  $n=23$  for father). Four participants failed to provide their mother's level of education, and six failed to provide their father's.

Crosstabs revealed that there was no significant difference in the education level of mothers whose children were homeschooled versus those whose children attended public or private school ( $\chi^2(6, N=108)=6.71$ ,  $p>.05$ ). However, 29% of homeschool mothers had a bachelor's degree, whereas 15% of public school mothers, and 50% of private school mothers did. Advanced degrees were held by 15% of homeschool mothers, 8% of public school mothers, and 13% of private school mothers.

Crosstabs revealed that there was a significant difference in the level of education of fathers of homeschooled children versus those whose children were publicly or privately schooled ( $\chi^2(6, N=106)=18.16$ ,  $p=.006$ ). Most fathers of homeschooled

children had Some College, Technical/Certificate, or Associate Degree (26%) or a bachelor's degree (38%), whereas most fathers of publicly schooled children had a high school education (31%) or Some College, Technical/Certificate, or Associate Degree (38%), and fathers of privately schooled children had either Some College, Technical/Certificate, or Associate Degree (50%) or an advanced degree (50%).

A series of ANOVAs was computed, with mother's level of education and father's level of education as the independent variables, and the categories of extracurricular activities, leadership, and political participation as the dependent variables. The main effect of mother's level of education was significant for rate of volunteering in young adulthood ( $F(4, 92)=2.84, MSE=2.42, p=.029, \eta_p^2=.011$ ). Rates of volunteerism were higher among respondents whose mothers had a high school diploma ( $M=.52, SE=.17$ ), some college, technical/certificate, or associate degree ( $M=.95, SE=.16$ ), and bachelor degree ( $M=1.00, SE=.19$ ) than among those whose mothers had an advanced degree ( $M=.07, SE=.07$ ). A post hoc analysis of volunteering in young adulthood as a function of mother's education level and schooling type (homeschool, public school, and private school) was not significant ( $F<1$ ). There were no other significant main effects of mother's education, and there were no significant main effects of father's education on any of the dependent variables, with  $F<1$  for each. The interactions of mother's education and father's education were similarly non-significant, with  $F<1.30$  on each dependent variable.

#### Activities as a Function of Schooling Type and Sex

The number of activities per category per age group were analyzed in mixed analyses of variance (ANOVAs), in which age (5-17, and 18+) was a repeated measure and schooling type (homeschool, public school, and private school) and sex (male or female) were between subjects variables. The number of activities in the 18+ age period, which includes leadership and political participation, were also analyzed in between subjects ANOVAs, with schooling and sex as independent variables. All non-significant results are at the  $p>.05$  level.

**Volunteerism.** There was no significant main effect of sex, or interaction between sex and any other variable, so it was dropped from the remaining analyses.

The main effect of age was significant ( $F(1, 106)=22.51, MSE=30.66, p<.001, \eta_p^2=.175$ ). The reported rate of volunteerism was higher during the 5-17 age range ( $M=2.04, SE=.15$ ) than during the young adult age range ( $M=.72, SE=.09$ ). Age did not interact with any other variables. The main effect of schooling was significant ( $F(2, 106)=3.41, MSE=6.78, p=.037, \eta_p^2=.060$ ). Tukey's b post hoc tests revealed that the privately schooled respondents reported significantly fewer volunteer activities ( $M=.94, SE=.35$ ) than publicly schooled ( $M=1.17, SE=.16$ ), which was lower than the homeschooled ( $M=1.67, SE=.19$ ) rate. There were no significant interactions.

The between subjects analysis of the 18+ responses showed that the main effects of sex ( $F<1$ ) and of schooling ( $F(2, 106)=1.25, MSE=1.10, p>.05, \eta_p^2=.023$ ) were not significant, nor was the interaction of sex and schooling ( $F<1$ ).

**Scholastic Activities.** There was no significant main effect of sex or interaction between sex and any other variable, so it was dropped from the remaining analyses. The main effect of age was marginally significant ( $F(2, 106)=2.86, MSE=2.47, p=.09, \eta_p^2=.026$ ). The reported rate of participation in scholastic extracurricular activities was higher during the 5-17 age period ( $M=.88, SD=1.36$ ) than during the young adult period ( $M=.40, SE=.08$ ). Age did not significantly interact with any other variables. There were no other significant main effects or interactions, and the between subjects analysis of the 18+ activities produced no significant main effects or interactions.

**Artistic Activities.** There was a significant main effect of sex on reported number of artistic activities ( $F(1, 106)=7.09, MSE=17.79, p=.009, \eta_p^2=.063$ ). Females ( $M=1.24, SE=.15$ ) reported participating in more artistic activities than males ( $M=.51, SE=.15$ ) did. The main effect of age was significant ( $F(2, 106)=24.71, MSE=34.80, p<.001, \eta_p^2=.189$ ), with a higher rate of participation in artistic activities in the 5-17 period ( $M=1.70, SE=.18$ ) than in the young adult period ( $M=.34, SE=.06$ ). The main effect of schooling was not significant.

The interaction of age and sex was significant ( $F(1, 106)=7.55, MSE=10.64, p=.007, \eta_p^2=.046$ ). The participation rates for females ( $M=2.10, SE=.24$ ) was nearly triple that of males ( $M=.76, SE=.19$ ) during the K-12 years, but by young adulthood, the rates were more similar and much lower ( $M_{Females}=.37, SE_{Females}=.08; M_{Males}=.26, SE_{Males}=.10$ ). There were no other significant interactions, and the between subjects analysis of the 18+ activities produced no significant main effects or interactions.

**Sports.** There was no significant main effect of sex or interaction between sex and any other variable, so it was dropped from the remaining analyses. The main effect of age was significant ( $F(1, 106)=49.63, MSE=139.47, p<.001, \eta_p^2=.319$ ). A higher rate of sports participation was reported in the K-12 period ( $M=2.72, SE=.26$ ) than in the young adult period ( $M=.62, SE=.09$ ). There were no other significant main effects or interactions.

The between subjects analysis of the 18+ activities revealed a nearly significant main effect of sex ( $F(1, 106)=3.35, MSE=2.72, p=.07, \eta_p^2=.031$ ). Males reported higher rates ( $M=0.79, SD=.18$ ) of athletic participation in young adulthood than females ( $M=0.54, SE=.11$ ) did. There were no other main effects or interactions.

**Club Activities.** There was no significant main effect of sex or interaction between sex and any other variable, so it was dropped from the remaining analyses. The main effect of age was significant ( $F(1, 106)=25.35, MSE=18.22, p<.001, \eta_p^2=.193$ ). A higher rate of club participation was reported in the K-12 period ( $M=1.18, SE=.12$ ) than in the young adult period ( $M=0.27, SE=.05$ ). There was a significant main effect of schooling type ( $F(2, 106)=6.76, MSE=6.37, p=.002, \eta_p^2=.113$ ), and a Tukey's b post hoc analysis revealed higher rates of club activity among homeschooled respondents ( $M=1.01, SE=.13$ ) than among publicly schooled respondents ( $M=.46, SE=.09$ ). Privately schooled respondents reported a rate ( $M=.56, SE=.36$ ) that was

between, and not significantly different from, the others. There were no other significant main effects or interactions.

The between subjects analysis of the 18+ rates of club participation revealed a significant main effect of schooling ( $F(1, 106)=4.61$ ,  $MSE=.988$ ,  $p<.012$ ,  $\eta_p^2=.08$ ). Tukey's b post hoc analysis clarified that the formerly homeschooled respondents reported significantly higher rates of club participation ( $M=.44$ ,  $SE=.08$ ) than the formerly privately schooled ( $M=.22$ ,  $SE=.15$ ) or the formerly publicly schooled ( $M=.10$ ,  $SE=.04$ ), which were not significantly different from each other. There were no other significant main effects or interactions.

**Leadership.** There was no significant effect of sex, or interaction with sex, so it was dropped from the remaining analyses. The main effect of school type was non-significant ( $F(2, 106)=2.17$ ,  $MSE=4.29$ ,  $p=.12$ ,  $\eta_p^2=.04$ ). There were no other main effects or interactions.

**Political Participation.** There was no significant effect of sex, or interaction with sex, so it was dropped from the remaining analyses. The main effect of school type was significant ( $F(2, 106)=4.14$ ,  $MSE=5.43$ ,  $p=.02$ ,  $\eta_p^2=.07$ ). Tukey's b post hoc analyses revealed that formerly homeschooled respondents reported the highest rate of political participation ( $M=1.50$ ,  $SE=.21$ ), formerly privately schooled respondents reported the lowest ( $M=.44$ ,  $SE=.44$ ), and formerly publicly schooled respondents were in between ( $M=.96$ ,  $SE=.15$ ), and not significantly different from either of the other two groups.

## Discussion

THE CURRENT STUDY sought to extend the findings from Seiver and Pope (2021), which found that there were no differences between formerly homeschooled and formerly traditionally-schooled young adults in rates of extracurricular participation during the K-12 years, but that the formerly homeschooled participated in more clubs and volunteer work in young adulthood. We confirmed those results, and explored the possibility that trait differences and/or level of parental education could account for differing rates of participation in extracurricular activities in young adulthood better than type of K-12 schooling could.

Some personality traits were correlated with participation in certain extracurriculars in young adulthood: Higher extraversion was associated with more leadership and political participation; higher agreeableness was associated with more volunteer work; higher agreeableness was associated with more volunteer work, leadership, and political participation; lower neuroticism was associated with more leadership and political participation; higher openness was associated with participation in artistic activities. In addition, formerly homeschooled young adults were significantly higher in agreeableness and conscientiousness than formerly publicly or privately schooled young adults, were significantly higher in openness to experience than formerly publicly schooled, and were significantly lower in neuroticism than formerly publicly schooled young adults. However, only agreeableness and conscientiousness interacted with volunteerism in young

adulthood, and mostly affected the rates for formerly publicly and privately schooled young adults; formerly homeschooled young adults displayed consistently higher rates, regardless of degree of agreeableness or conscientiousness. There was no interaction of schooling type and personality traits on rates of club participation, leadership, or political participation, so we can reject the hypothesis that formerly homeschooled young adults report higher rates of participation in club activities and political engagement due to differences in personality traits.

Our findings regarding openness to experience, agreeableness, and conscientiousness support those reported by White, et al. (2009). In addition, we found lower levels of neuroticism among formerly homeschooled young adults than among formerly publicly schooled, which White, et al. had predicted but not found. The finding of higher levels of openness to experience helps to dispel the typical concerns that homeschooled children are averse to new experiences. The consistent findings that formerly homeschooled young adults are more open to experience than their traditionally-educated peers may help to explain Cheng's (2014) finding that formerly homeschooled students at a Christian college displayed greater political tolerance than their traditional-school peers.

The hypothesis that higher levels of parental education could account for differences in rates of participation in extracurricular activities was dispelled by this study. Our concern that homeschool parents might have higher levels of education than traditional-school parents was partly supported; the base rates of bachelor's degrees among homeschool parents was greater than among public school parents, but much lower than the rate among private school parents. The key analysis revealed that neither the parent's level of education, nor the interaction of the two parents' levels of education had an effect on the rate of participation in extracurriculars at any age. This outcome is similar to Ray's (2015) finding that parental certification to teach was unrelated to their middle-school child's academic performance, whether in a homeschool setting or a public school setting. While level of parental education is not a perfect measure of SES, it is one component of that. Given that there was no significant difference in the rate of participation in extracurricular activities in the K-12 years, and the fact that parental education was not a main effect and did not interact with any other factors, suggests that we cannot attribute the higher rates of club activity in formerly homeschooled young adults to their parents' SES.

The results confirmed the finding from Seiver and Pope (2021) that formerly homeschooled young adults participate in more club activities than formerly publicly or privately schooled peers. Although there was no difference between the schooling types in rate of participation in club activities during the K-12 years, in young adulthood, the difference was significant.

Although formerly homeschooled respondents reported higher rates of volunteerism during the K-12 years than formerly publicly schooled or privately schooled students, there was no difference between groups in young adulthood. This outcome contradicts the findings from Seiver and Pope (2021), and is difficult to explain. The average rates of participation in volunteerism were quite comparable to those posted in Seiver and Pope, and thus the lack of significance must be due to variability within the sample in the current study.

## Seiver and Pope

This study failed to provide support for Sutton and Galloway's (2000) finding that formerly homeschooled young adults are more likely to report having taken a leadership role than their traditionally educated peers. While the averages suggest that formerly homeschooled respondents engaged in more leadership roles, the large standard errors resulted in non-significance.

Formerly homeschooled young adults were more civically engaged, as measured by being registered to vote, voting in the last election, attending a town hall meeting, campaigning for a candidate, and/or participating in a political protest, than their privately schooled peers, and equally as engaged as their publicly schooled peers. Political participation reflects the type of socialization that Kunzman and Gaither (2013) defined as forming one's own values and interacting with members of society. Being at least as engaged as the traditional-school respondents supports the interpretation that formerly homeschooled respondents were adequately socialized during their K-12 years.

The main concern about homeschooling has always been whether children would be adequately socialized if they are deprived of classroom interactions with their peers. The current study suggests that, more than personality traits or parental SES, the type of schooling that a child experienced during the K-12 years determines the amount of community engagement displayed during the young adult years. Ballard et al. (2019) argue that civic engagement is beneficial to one's overall health and one's future SES. To discover that formerly homeschooled young adults are more engaged in the types of activities that Eccles, et al. (2003) characterized as "prosocial" implies that these young adults have been adequately socialized so that they can fit in within their social milieu.

## References

- Ballard, P. J., Hoyt, L. T., & Pachucki, M. C. (2019). Impacts of adolescent and young adult civic engagement on health and socioeconomic status in adulthood. *Child Development*, 90(4), 1138-1154.
- Cheng, A. (2014). Does homeschooling or private schooling promote political intolerance? Evidence from a Christian university. *Journal of School Choice*, 8(1), 49-68.
- Corrigall, K. A., & Schellenberg, E. G. (2015). Predicting who takes music lessons: Parent and child characteristics. *Frontiers in Psychology*, 6, 282.
- Eccles, J. S., Barber, B. L., Stone, M., & Hunt, J. (2003). Extracurricular activities and adolescent development. *Journal of Social Issues*, 59(4), 865-889.
- Eggleson, C., & Fields, J. (2021). *Census Bureau's Household Pulse Survey shows significant increase in homeschooling rates in fall 2020*. United States Census Bureau. <https://www.census.gov/library/stories/2021/03/homeschooling-on-the-rise-during-covid-19-pandemic.html>
- Erikson, E. H. (1968). *Identity: Youth and crisis* (No. 7). WW Norton & Company.
- Fuligni, A. J. (2019). The need to contribute during adolescence. *Perspectives on Psychological Science*, 14, 331-343.
- Harris, J. R. (2011). *The nurture assumption: Why children turn out the way they do*. Simon and Schuster.
- Hill, J. P., & Den Dulk, K. R. (2013). Religion, volunteering, and educational setting: The effect of youth schooling type on civic engagement. *Journal for the Scientific Study of Religion*, 52(1):179-197.
- John, O. P., Donahue, E. M., & Kentle, R. L. (1991). The Big Five Inventory--Versions 4a and 54. Berkeley, CA: University of California, Berkeley, Institute of Personality and Social Research.
- John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 114-158). Guilford Press.
- Kunzman, R., & Gaither, M. (2013). Homeschooling: A comprehensive survey of the research. *Other Education: The Journal of Educational Alternatives*, 2(1), 4-59.
- McFarland, D. A., & Thomas, R. J. (2006). Bowling young: How youth voluntary associations influence adult political participation. *American Sociological Review*, 71(3), 401-425.
- McQuiggan, M., Megra, M., & Grady, S. (2017). Parent and family involvement in education: Results from the National Household Education Surveys program of 2016; first look. <https://nces.ed.gov/pubs2017/2017102.pdf>
- Medlin, R. G. (2000). Homeschooling and the question of socialization. *Peabody Journal of Education*, 75, 107-123. DOI: 10.1080/0161956X.2000.9681937
- Medlin, R. G. (2006). Homeschooled children's social skills. *Home School Researcher*, 17(1), 1-8.
- National Center for Education Statistics (2016). *The condition of education*. [https://nces.ed.gov/programs/coe/pdf/Indicator\\_CCE/coe\\_ce\\_2016\\_05.pdf](https://nces.ed.gov/programs/coe/pdf/Indicator_CCE/coe_ce_2016_05.pdf)
- National Center for Education Statistics (2020). *Characteristics of children's families*. [https://nces.ed.gov/programs/coe/indicator\\_cce.asp](https://nces.ed.gov/programs/coe/indicator_cce.asp)
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.
- Prothero, A., & Samuels, C. A. (2020). *Home schooling is way up with COVID-19. Will it last?* Education Week. <https://www.edweek.org/policy-politics/home-schooling-is-way-up-with-covid-19-will-it-last/2020/11>
- Ray, B. (2015). African American homeschool parents' motivations for homeschooling and their Black children's academic achievement. *Journal of School Choice*, 9(1), 71-96.
- Revised Code of Washington. Attendance mandatory—Age—Exceptions. RCW 28A.225.010(4)(b).
- Redford, J., Battle, D., & Bielick, S. (2017). *Homeschooling in the United States: 2012; NCES 2016-096*. National Center for Education Statistics: Institute of Education Sciences. <https://nces.ed.gov/pubs2016/2016096rev.pdf>
- Rubin, R. S., Bommer, W. H., & Baldwin, T. T. (2002). Using extracurricular activity as an indicator of interpersonal skill: Prudent evaluation or recruiting malpractice? *Human Resource Management*, 41(4), 441-454.
- Seiver, J. G., and Pope, E. A. (2022). The kids are alright I: Social engagement in young adulthood as a function of K-12

- schooling type. *Home School Researcher*, 36(4), 1-10.  
<https://www.nheri.org/archives/>
- Sikkik, D., & Skiles, S. (2015). Homeschooling and young adult outcomes: Evidence from the 2011 and 2014 Cardus education survey.  
<https://www.cardus.ca/research/education/reports/homeschooling-and-young-adult-outcomes-evidence-from-the-2011-and-2014-cardus-education-survey/>
- Sutton, J. P. & Galloway, R. S. (2000). College success of students from three high school settings. *Journal of Research and Development in Education*, 33, 137-146.
- United States Department of Education Digest of Education Statistics (2017a). *Fast facts: Homeschooling*.  
<https://nces.ed.gov/fastfacts/>
- United States Department of Education Digest of Education Statistics (2017b). *Number and percentage of homeschooled students ages 5 through 17 with a grade equivalent of kindergarten through 12th grade, by selected child, parent, and household characteristics: Selected years, 1999 through 2016*.  
[https://nces.ed.gov/programs/digest/d17/tables/dt17\\_206.10.asp](https://nces.ed.gov/programs/digest/d17/tables/dt17_206.10.asp)
- White, S., Moore, M., & Squires, J. (2009). Examination of previously homeschooled college students with the Big Five model of Personality. *Home School Researcher*, 25(1), 1-7.
- Wise, R. (2020). *What does the research say about the impact of homeschooling on academics and social skills?* Education and Behavior: Research-based Strategies for Children.  
<https://educationandbehavior.com/what-does-research-say-about-homeschooling/> \*