

ADOLESCENT VALUES, INTEREST IN EXTRACURRICULAR ACTIVITIES AND BONDING TO SCHOOL A Cross-sectional Descriptive and Correlational Analysis

William B. Hansen
Prevention Strategies

The goal of this article is to explore relations between adolescent values, interests in activities, and their bonding to school. This article presents survey research findings that examine 1,928 sixth- and seventh-grade students' responses to survey prompts about 15 terminal values adapted from Rokeach's (1973) theory of values, prompts about 11 activities they may be interested in, and questions about how attached they felt to school. The goal of analysis is to document the relative importance of each terminal value for this sample. In addition, relation between values, activities of interest, and bonding to school were estimated. All 15 values were ranked as important. Among the more highly ranked values for the sample were acceptance, independence, character, fitness, and achievement. Least important overall were faith, wealth, fame, creativity, and stewardship. Factor analysis resulted in 3 general categories that described activities of interest: interest in athletics, interest in the arts, and interest in technology. Students' bonding to school varied based on gender and grade, with females and younger students being generally more bonded to school. There were strong correlations between valuing fitness and having an interest in athletic activities ($r = .599$) and valuing education and having an interest in the arts ($r = .340$). Bonding to school was strongly correlated with only 2 values: education ($r = .435$) and character ($r = .335$). Having an interest in technology was not correlated with any of the 15 values or students' bonding to school. Results suggest that interventions and policies that wish to improve bonding to school might do well to take advantage of existing highly ranked positive values and provide an opportunity for students to engage in a wide array of activities of interest.

The adolescent decade is one in which a variety of psychosocial qualities develop (McLean & Syed, 2015). Young people set priorities

about what is important to them and align their self-image with these priorities (Rosenberg, 2015). They begin preferring and participating

• Correspondence concerning this article should be addressed to: William B Hansen, billhansen1949@gmail.com

Journal of Character Education, Volume 17(1), 2021, pp. 21–36
Copyright © 2021 Information Age Publishing, Inc.

ISSN 1543-1223
All rights of reproduction in any form reserved.

in a variety of voluntary activities both in group settings and individually. They develop a relationship with peers and institutions, primarily school, that can vary markedly in regard to how they view their association and attachment (Coleman, 1961). Each of these characteristics may ultimately affect the paths they follow to adulthood, including affecting such outcomes as using or not using substances (including alcohol, tobacco, and other drugs), the quality of their mental health, the quality of social relationships, and their ability to qualify for and retain employment. The purpose of this research is to provide an examination of students' values, activity interests, and bonding to school. The general question to be answered is the degree to which specific values, specific interests in activities, and bonding to school align in students' self-reports. Understanding the nature of these interrelations can inform strategies for promoting positive youth development and preventing dysfunctional behaviors.

Values

Values are cognitive schema that represent idealized states that all people implicitly understand (Bardi & Schwartz, 2003; Rokeach, 1973; Schwartz, 1992). Schwartz (1992, 2010, 2012) notes that people use values as the criteria by which they select and justify actions for themselves and others. Values are also a cohesive force, serving as the basis of personal identity (Hitlin, 2003), and can vary markedly in their importance to an individual (Bardi & Schwartz, 2003). Individuals prioritize values, with those most salient influencing choices and behavior (Rokeach, 1973). Although an individual's values are relatively stable and persistent, they do evolve as adolescents mature (Daniel & Benish-Weisman, 2017).

Rokeach (1973) proposed 18 idealized end states or "terminal values" that provide motivation for human behavior: *true friendship, mature love, self-respect, happiness, inner harmony, equality, freedom, pleasure, social*

recognition, wisdom, salvation, family security, national security, a sense of accomplishment, a world of beauty, a world at peace, a comfortable life, and an exciting life. In the Rokeach analysis, all values are recognized as positive; however, the values that drive behavior are those that are most salient to an individual. His classic methodology required participants to rank order their values. Research in which participants rated, as well as ranked, terminal values found that both methods produced outcomes that were equally reliable and valid (Rankin & Grube, 1980).

Relatively little research has been done using the Rokeach value system with adolescents. Hansen and his colleagues (Hansen, 2015; Hansen, et al., 2009) modified the Rokeach terms to be more appropriate for adolescents. The revised list of 15 values included: *acceptance, achievement, adventure, character, creativity, education, faith, fame, fitness, independence, inner strength, peace, stewardship, talent and wealth.*

Other research has also addressed adolescent values. For example, research has explored the relation between the value of health and teen substance use (Costa et al., 2017). Adolescents' responses to assessments about family responsibility, employment responsibility, individual responsibility, autonomy, civic responsibility, and hedonistic privilege were used to predict adult alcohol use and civic involvement (Finlay et al., 2015). The importance of being healthy, having friends, responsibility to family, having money, and doing well academically were examined as predictors of smoking and drinking (Nieh et al., 2018). These studies support the notion that values are integral to understanding behavior.

Extracurricular Activities

In school, attention is primarily given to formal educational topics: science, mathematics, and language. Instruction in these topics is at the core of most educational enterprises; performance is often the basis of judging

success and failure and is expected to be the basis for participation in postsecondary educational and employment pursuits. For our purposes, all other activities, whether sponsored formally or pursued individually, are considered extracurricular. These activities include: participating in sports (Darling, 2005; Darling et al., 2005; McNeal, 1995, 1998, 1999; Shubert et al., 2016; Shulruf et al., 2008); activities related to arts, such as music and drama (Beal & Crockett, 2010; Darling, 2005; Darling et al., 2005; McNeal, 1995, 1998, 1999; Shubert et al., 2016; Shulruf et al., 2008); out-of-school reading (Watkins & Edwards, 1992); clubs and vocational interest groups (Darling, 2005; Darling et al., 2005; McNeal, 1995); and participating in environmental activism and religion (Shubert et al., 2016).

There are gender differences in rates of participation in extracurricular activities. Researchers have noted that males are more likely to participate in athletic activities and that females are more likely to participate in non-sports-focused extracurricular activities (Darling, 2005; Feldman & Matjasko, 2005; McNeal, 1998; Watkins & Edwards, 1992).

Studies have long shown that participating in extracurricular activities is associated with positive effects. McNeal (1995) analyzed the *High School and Beyond* dataset from the National Center for Education Statistics (Jones, 1983). He reported that participating in sports was protective of dropping out. Similar findings have been noted by other researchers (Mahoney, 2000; Mahoney & Cairns, 1997; Mahoney et al., 2005). Research has found that participating in sports, clubs, and other extracurricular activities is associated with a significant positive effect on literacy scores (Shulruf et al., 2008) and math achievement (Bryan et al., 2012). Participating in extracurricular activities is associated with an increase in educational aspirations and expectations (Beal & Crockett, 2010; Holland & Andre, 1987) and psychological well-being (Darling, 2005; Gilman et al., 2004). In research designed to understand the relation between character profiles and extracurricular activities, Shubert and

her colleagues (2016) asked fourth- through 12th-grade students to identify their character strengths (being amazed, creative, forgiving, future-minded, generous, grateful, humble, joyful, a leader, purposeful, responsible and thrifty) and provide a list of out-of-school activities in which they participated. Students who ranked high in creativity, future-mindedness and leadership were engaged in sports. Those who rated themselves as joyful and generous were inclined to volunteer and participate in civic activities.

Bonding to School

Generally speaking, bonding to school refers to how well students connect with and feel an attachment to and acceptance within the school (Maddox & Prinz, 2003). Many conceptualizations have included multiple dimensions, distinguishing between such issues as attachment to a specific school, attachment to school personnel (teachers, coaches, counselors, custodians, administrators, and other personnel), and commitment to education vis-à-vis school. Hirschi (1969) viewed bonding as attachment to school, commitment to schooling, belief in school rules, and involvement in a variety of school activities.

Research has shown that there are several notable outcomes associated with bonding to school. These outcomes include: reduced alcohol and substance use (Catalano et al., 1996; Dever et al., 2012; Henry et al., 2012); reduced misconduct, crime, and delinquency (Henry et al., 2012; Jenkins, 1997; Liljeberg et al., 2011; Simons-Morton et al., 1999); improved mental health (Catalano et al., 2004; Kuperminc et al., 2001; Shochet et al., 2006); and improved academic performance (Bryan et al., 2012; Learner & Kruger, 1997; Marchant et al., 2001).

Several proponents of improving students' engagement and character (Berkowitz & Bier, 2007; National Research Council, 2003) note that bonding to school is an important component of successful education. Bonding to

school has been found to decline as students matriculate to higher grades (Oelsner et al., 2011; Simons-Morton et al., 1999). In response, there have been a number of interventions designed specifically to improve bonding to school (Durlak et al., 2010; Hawkins et al., 2001; Lochman & Wells, 2002; Oyserman et al., 2002; Wenzel et al., 2009). Many of these interventions address improving student-teacher relations and school climate.

Prior measurement strategies have focused on assessing each possible dimension of bonding to school with scales composed of multiple items. Many published approaches to measure bonding to school involve relatively large numbers of items, each assessing a specific hypothesized dimension of bonding to school. For example, Libbey (2004) notes that multiple measures with common themes have been used to assess bonding to school, including assessing a positive orientation to school, attachment to school, school commitment, school climate, and school connection. Bryan et al. (2012) assessed bonding to school by asking questions that assessed students' attachment to teachers, commitment to school and education, and attachment to school in terms of satisfaction, fairness, and safety. Noting that large numbers of items specific to bonding to school place a burden on students when completing surveys, Whiteside-Mansell et al. (2015) conducted a multiphase study in which they reduced measures in four concepts from 65 items to 20 items.

Relations Among Values, Extracurricular Activities, and Bonding to School

Each of the variables of interest in this article represent distinct psychosocial domains. Values are internal cognitive constructs that reflect how individuals prioritize their world. Students' extracurricular activities represent a behavioral domain (although, the focus is on interest in activities, which is affective in nature). Bonding to school is an affective construct that represents social relationships.

While distinct, there is reason to believe that there should be logical relations among them. Values are expected to drive behavior (Rokeach, 1973; Schwartz, 2010) and, as such, specific values should be related to specific behaviors. For example, having fitness as a priority should be reflected in voluntary participation in and an interest in fitness-related activities. Interest in participating in a variety of extracurricular activities, specifically including those that are sponsored by the school, should reflect an improved sense of belonging and attachment to school. Furthermore, there is evidence that nonacademic extracurricular activities contribute to success and bonding at school (Eccles et al., 2003).

I propose a model in which the development of values initially precedes the development of interests. Without longitudinal data, causation cannot be tested. Nonetheless, I expect that adolescents' values—what they think of as important—will precede the development of specific interests and serve as a primary prompt to the initial engagement in a variety of activities. When opportunities for involvement in activities present themselves, adolescents weigh the value of the activity against an internal construct that defines their inherent interest. Generally, it may be easier for adolescents to define their interests than their values. This notion may be true because interests involve the potential for action, which is easily defined, whereas understanding values require the ability to weigh cognitive and affective constructs that may be more challenging for individuals to assess and express. Values reflect deeply held convictions; however, adolescents may struggle to put those convictions into words.

Collectively, values and interests contribute to an adolescents' self-image. As students' personalities develop, values and interests are expected to emerge and solidify. Values and interests, and the way in which they match the institutional values and activities offered through school, help determine an adolescent's attachment to school. A school environment that provides opportunities for activity and

where students feel that their priorities are attended to and rewarded are likely to promote attachment and motivation. Furthermore, both values and interests emerge within a social context provided by the school specifically, and within a larger cultural, historical, and economic milieu generally.

METHOD

The purpose of this research was to explore the relations among the domains of values, extracurricular activities, and bonding to school. Prior research (Daniel & Benish-Weisman, 2017; Darling et al., 2005; Feldman & Matjasko, 2005; Jenkins, 1997; Kuperminc et al., 2001; Livazović & Matić, 2018; Oelsner et al., 2011; Simons-Morton et al., 1999; Warren Wray-Lake, 2017) has shown that values, interests, and bonding to school often differ based on age and gender. The variance attributable to each is examined.

Sample

Students in six middle schools in Colorado participated in this research. Schools were recruited to participate in a trial of an experimental intervention that had the goal of increasing students' bonding to school through the creation of within-classroom teams that disaggregated at-risk students. The team-creation algorithm used values, interests, bonding to school, and social network connections of students to ensure students with low bonding scores were not grouped together. Groups that were formed consisted of students who shared values and interests and had some level of acquaintance but were not close friends.

Overall, 1,953 students were enrolled in these schools. Data were collected from 1,928 (98.8%) of students. Schools explained that missing data was primarily due to students having moved out of school since the time rosters were compiled. Of those students who provided data, 903 were enrolled in sixth grade and 1,025 were enrolled in seventh grade.

Males ($n = 961$, 49.8%) and females ($n = 967$, 50.2%) were roughly equally represented. Because data collection specifically called for race and ethnicity to be ignored in team creation, these data were not collected.

Measures

Three sets of measures were collected from students related to values, extracurricular activities, and bonding to school. Values included student self-reports about the importance of each of 15 Rokeach-based terminal values (adapted for adolescents): *acceptance, achievement, adventure, character, creativity, education, faith, fame, fitness, independence, inner strength, peace, stewardship, talent and wealth*. For each value, a brief definition of the value was provided. For example, *acceptance* was defined as "having friends, being cared about." Students rated items on a 5-point Likert-like scales with values of 1 (not important) to 5 (most important).

The approach to assessing extracurricular activities was not to request rates of participation but, rather, to assess interest. The rationale was that assessing rates of participation might depend on opportunities for involvement, which may be seasonal or tied to socioeconomic contexts and individual abilities. For example, the various team sports sponsored in school occur during different times of the years and often require a tryout. The result is that, in a typical school, not everyone can participate. Assessing interest, on the other hand, allows even those who are not able to participate to note their inclinations.

Students were presented with a list of 11 interests that represented potential behaviors or activities in which they might be engaged: *Playing sports or joining a sports team; Doing things to improve your fitness; Attending a sports event; Doing outdoor activities; Participating in plays or drama; Doing art, crafts, or hobbies; Reading books or magazines; Singing or playing a musical instrument; Doing things with animals; Thinking about fashion and style; Doing things with engines, machines, or*

technology; and *Playing computer, board, or fantasy games*. The list of interests was created ad hoc specifically for this project. The list included topics identified in prior research (as reviewed in the introduction) and additional topics thought to be relevant to adolescents. Students expressed interest in each of these activities by rating them from 1 (low interest) to 5 (high interest).

For the purposes of this study, the focus was on how well students felt an attachment to and acceptance within the school. Bonding to school consisted of ratings of six statements: *I feel like I belong at this school*; *I have no interest in school* (reversed); *The teachers at this school like me*; *I wish I went to a different school* (reversed); *I like the teachers at this school*; and *I am often bored at school* (reversed).

Data Collection

Data were collected by means of an online survey, *Network Genie* (Hansen, Reese, et al., 2009), that allowed both person-centered and social-network data to be collected. Among those for whom data were collected, there were no missing data. Data transmitted from the school to the research team were deidentified; students and schools were identified only by an ID number. Raw data are publicly available at 10.5281/zenodo.2838848.

Human Subjects

Two institutional review boards (Tanglewood Research and Colorado State University) judged this research as being exempt from requiring parental consent and student assent based on 45 CFR 46.101(b), Exemption 1. This exemption was confirmed by further special review by the National Institute of Health Office of Human Subjects Research that the National Institute on Drug Abuse required prior to funding. The research team received deidentified data, no questions were asked about illegal behaviors, and data were used to support normal classroom activities (i.e., the

creation of within-classroom teams for completing course work). School administrators also approved not requiring parental consent and student assent when they agreed to participate in the project.

Data Analysis Plan

For values items, means were calculated, disaggregated by grade and gender. Overall differences were tested using MANOVA followed by ANOVA when MANOVA significance was observed. When statistical differences between genders or grades was beyond .001, effect sizes (η^2) were calculated.

Unlike values, each of which are conceptualized as being intrinsically separate, prior research (McNeal, 1995, 1998, 1999), suggests that activities may be reduced to just a few underlying dimensions. I conducted an exploratory principal components analysis with varimax orthogonal rotation to identify the underlying factor structure of the 11 activities that might hold students' interest. The number of factors was determined using an eigenvalue cutoff of 1. Scores were calculated by averaging scores across items for each component. I then compared males' and females' and sixth and seventh graders' levels of interests.

Each Bonding to School item was scored from 0 to 10 and were averaged to form a single 11-point scale with low values indicating poor bonding and high values indicated strong attachment to school. The scale had acceptable internal consistency with a Cronbach's alpha of .791; all statements contributed to the scale. I calculated differences between genders and grades using *t* tests.

Scores for values were correlated with activity component scores and bonding scores.

RESULTS

Terminal Values

Average ratings given to each of the terminal values, disaggregated by grade and gender, are

presented in Table 1. The overall most important values included: Acceptance (*having friends, being cared about*); Independence (*having freedom to do what you want*); Character (*doing what is right; having self-respect*); Fitness (*physical health and strength*); and Achievement (*accomplishing difficult or important things*). The least important values included: Faith (*having religious thoughts and beliefs*); Wealth (*having money and what money can buy*); Fame (*having the attention and respect of others*); Creativity (*imagining, inventing, or building new things*); and Stewardship (*taking care of people and the earth*). In the middle were: Peace (*being in harmony with yourself and others*); Adventure (*exploring the world, doing new things*); Education (*gaining knowledge and understanding*); Talent (*developing special skills and abilities*); and Inner Strength (*being able to deal with life's challenges*). For each terminal value, the full range of response values (1 through 5) were used;

however, all ratings for terminal values were negatively skewed, with more high ratings than low ratings given for each. For each terminal value except Fame and Wealth, the modal response was 5. For Fame, the modal value was 4. For Wealth, the modal value was 3.

There were significant overall differences in ratings of values based on gender (Wilks' $\lambda = .860$; $F(15,1910) = 20.686$, $p < .000$, $\eta^2 = 0.140$) and grade (Wilks' $\lambda = .972$; $F(15,1910) = 3.675$, $p < .000$, $\eta^2 = 0.028$). The gender $\times$ grade interaction was not significant. Given the overall significance of the MANOVA, individual ANOVAs were computed for each value. Because the sample size was large ($N = 1,928$), the criterion for rejecting no-difference cases was set at $p < .001$. Gender and Grade effect sizes (η^2) for differences that were statistically significant beyond .001 are presented in Table 1. There were only main effects and no statistically significant Gender $\times$ Grade interactions. There were observed differ-

TABLE 1
Average Ratings and Gender and Grade Effect Sizes* for 15 Adolescent Values

Value	Sixth		Seventh		Overall Rank	Partial η^2	
	Males	Females	Males	Females		Gender	Grade
Acceptance	4.39	4.63	4.28	4.63	1	0.039	—
Independence	4.41	4.48	4.44	4.44	2	—	—
Character	4.32	4.63	4.19	4.55	3	0.045	—
Fitness	4.43	4.37	4.36	4.21	4	—	—
Achievement	4.22	4.43	4.16	4.39	5	0.017	—
Inner Strength	4.22	4.43	4.16	4.37	6	0.016	—
Talent	4.22	4.36	4.21	4.25	7	—	—
Education	4.13	4.49	3.90	4.33	8	0.043	0.011
Adventure	4.19	4.30	4.12	4.18	9	—	—
Peace	3.90	4.37	3.87	4.20	10	0.042	—
Stewardship	3.96	4.40	3.78	4.15	11	0.044	0.013
Creativity	4.14	4.09	3.99	3.99	12	—	—
Fame	3.63	3.78	3.55	3.58	13	—	—
Wealth	3.47	3.24	3.73	3.25	14	0.021	—
Faith	3.32	3.72	3.13	3.49	15	0.018	0.006

Note: *Effect sizes (η^2) are shown only for ANOVA results with $p < .001$.

ences between males and females for nine terminal values. Males and females, respectively, had mean values of 4.33 and 4.63 (Acceptance), 4.19 and 4.41 (Achievement), 4.25 and 4.59 (Character), 4.01 and 4.40 (Education), 3.22 and 3.59 (Faith), 4.19 and 4.40 (Inner Strength), 3.89 and 4.28 (Peace), 3.87 and 4.27 (Stewardship) and 3.61 and 3.25 (Wealth). In each of these cases except for Wealth, females gave higher average ratings. Only three values differed significantly by grade. Grade differences favored younger students having made higher ratings. Sixth graders placed a higher value than seventh graders on Education (4.31 versus 4.11), Faith (3.52 versus 3.31) and Stewardship (4.18 versus 3.97). In all these analyses, the amount of variance accounted for by Gender or Grade was relatively small, less than 5%. Thus, despite small and noticeable differences, there was overall relative consistency for each subgroup's ratings.

Interests in Activities

Table 2 presents results of a principal components analysis. Three factors emerged

(activities contributing to each factor are shaded in the table). The first factor related generally to athletic activities. This domain included sports, fitness, and outdoor activities. The second factor related generally to artistic activities, music, drama, crafts, and literature. This factor also included doing things with animals, and fashion and style. The final factor related to technology included doing things with machines, and playing computer and other types of games.

Items contributing to factors were averaged, creating scales ranging from 1 to 5 for each factor. There were differences among the three factors in the shape of their distributions. Interest in Arts had an overall mean of 3.238 and was normally distributed ($\alpha = .641$. Skewness = $-.127$. Kurtosis = $.484$). Interest in Technology was similarly normally distributed with an overall mean of 3.083 ($\alpha = .546$. Skewness = $-.031$. Kurtosis = $-.882$). Interest in Athletics was skewed (Mean = 4.032. $\alpha = .795$. Skewness = $-.916$. Kurtosis = $.050$). Almost half (46.2%) of students had Interest in Athletics scores of 4.5 or greater.

TABLE 2
Factor Loadings From Principal Components Analysis for 11 Activities

Activity	Component		
	1	2	3
Playing sports or joining a sports team	0.837	-0.097	-0.082
Attending a sports event	0.806	-0.114	-0.078
Doing things to improve your fitness	0.778	0.078	-0.017
Doing outdoor activities	0.710	0.199	0.130
Participating in plays or drama	-0.101	0.681	-0.192
Doing art, crafts, or hobbies	0.052	0.634	0.099
Singing or playing a musical instrument	-0.105	0.592	0.063
Reading books or magazines	0.005	0.581	0.253
Doing things with animals	0.199	0.560	0.074
Thinking about fashion and style	0.090	0.522	-0.471
Doing things with engines, machines, or technology	0.131	0.023	0.817
Playing computer, board, or fantasy games	-0.161	0.230	0.697

There were significant overall MANOVA differences in interest factors based on gender (Wilks' lambda = .560, $F(3,1922) = 503.274$, $\eta^2 = 0.440$) and grade (Wilks' lambda = .977, $F(3,1922) = 14.820$, $\eta^2 = 0.023$). There was no overall gender $\times$ grade interaction. As was done for values, once the overall MANOVA was found to be significant, individual ANOVAs were computed for each type of activity. Ratings for activity dimensions are summarized in Table 3. When significance of $p < .001$ was observed, the effect size statistic (η^2) is presented. It should be noted that η^2 can be thought of as equivalent to R^2 and is an estimate of variance accounted for (Bakeman, 2005). There were definable differences between genders' interests in athletic activities, accounting for about a quarter of variance and favoring males (Mean = 4.16) over females (Mean = 3.91). Females (Mean = 3.64) were somewhat more interested in artistic activities than males (Mean = 2.83). Males were more interested than females in technology activities (3.49 and 2.68, respectively). There were statistically significant differences based on students' grade level; however, effect sizes were so small as to render differences to be trivial.

Bonding to School

Bonding to School scale values varied slightly between males and females and between sixth- and seventh-grade students (see Table 4). Generally, females were more bonded to school than males, with means on

the 0 to 10 scale of 7.628 compared to 7.047, respectively ($t = 8.296$, $df = 1,926$, $p < .001$). Younger students were more bonded to school than older students with means of 7.687 compared to 7.031, respectively ($t = 9.388$, $df = 1,926$, $p < .001$). Gender and grade each accounted for less than 5% of the observed variance.

Correlations Among Constructs

Table 5 presents correlation coefficients between each of the 15 terminal values and Interest in Athletics, Interests in Arts, Interests in Technology, and Bonding to School. All correlations greater than .075 were statistically significant at the $p < .001$ level. There are several relations that are notable, having biserial correlations greater than .300. As might be expected, valuing fitness was correlated with having an interest in athletics ($r = .599$). Valuing education was correlated with Bonding to School ($r = .435$) as was valuing character ($r = .335$). Interest in Arts was correlated with Stewardship ($r = .382$), Education ($r = .340$), Peace ($r = .303$), Creativity ($r = .302$), and Character ($r = .300$). Having an interest in technology was only correlated with Creativity ($r = .288$).

A separate set of correlations were calculated between the three interests in activities factors and Bonding to School. There was a correlation between Bonding to School and Interest in Arts ($r = 0.295$), a somewhat smaller correlation between Bonding to School and Interest in Athletics ($r = 0.130$), and no

TABLE 3
Average Ratings and Gender and Grade Effect Sizes* for Interests

Interest Category	Sixth		Seventh		Partial η^2	
	Males	Females	Males	Females	Gender	Grade
Athletics	4.14	3.99	4.17	3.84	0.257	0.018
Arts	2.93	3.74	2.75	3.55	0.124	0.011
Technology	3.57	2.83	3.41	2.55	0.017	—

Note: *Effect sizes (η^2) are shown only for ANOVA results with $p < .001$.

TABLE 4
Average Rating and Grade and Gender Effect Size of Bonding to School

	<i>Sixth</i>		<i>Seventh</i>		<i>Partial η^2</i>	
	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>	<i>Gender</i>	<i>Grade</i>
Bonding to School	7.39	7.98	6.75	7.31	0.036	0.045

TABLE 5
Correlations Between Values and Interests and Bonding to School*

<i>Terminal Value</i>	<i>Interest in Athletics</i>	<i>Interest in Arts</i>	<i>Interest in Technology</i>	<i>Bonding to School</i>
Acceptance	.161	.260	-.044	.179
Achievement	.272	.253	.009	.276
Adventure	.268	.258	.086	.159
Character	.203	.300	-.043	.335
Creativity	.027	.302	.288	.177
Education	.191	.340	.023	.435
Faith	.170	.187	-.022	.191
Fame	.223	.140	-.001	.061
Fitness	.599	.053	-.030	.149
Independence	.130	.110	.101	.019
Inner Strength	.237	.259	.003	.252
Peace	.164	.303	.002	.278
Stewardship	.201	.382	.019	.280
Talent	.263	.259	.078	.183
Wealth	.089	-.101	.122	-.084

Note: *All correlations greater than .075 were statistically significant at the $p < .001$ level.

correlation between Bonding to School and Interest in Technology ($r = 0.000$). The Arts-Bonding correlation was statistically stronger than the Athletics-Bonding correlation ($t = 5.49$, $df = 1925$, $p < .00001$).

DISCUSSION

Purpose

This research examined three domains relevant to the lives of adolescents: values, interest in activities, and bonding to school. The prior

research reviewed posits that each domain reflects facets of an adolescent's persona. Each domain addresses a key element that has the potential to contribute to an adolescent's well-being. The intent of this article was to explore gender and grade differences and identify linkages among elements in these domains. Among all three domains, I observed significant individual variability. I also observed patterns of interrelations that identify linkages between values, activities of interest and bonding to school. These findings have potential value for the design of policies and interventions.

Summary of Findings

For 12 of the 15 terminal values, students gave modal ratings of 5. On average, students rated no terminal value less than 3. This suggests that they viewed all terminal values to be at least somewhat important. As Rokeach (1973) noted, all values are generally viewed as positive states. The software used to collect these data did not allow for a ranking alternative. Although Rankin and Grube (1980) suggested that rating was equivalent to ranking, the latter method may have provided a better means for individuals to distinguish their priorities. Nonetheless, at the group level, there was sufficient variability to allow values to be distinguished from one another. Acceptance, independence, character, fitness, and achievement were all viewed as generally the most important terminal values.

As previous research suggests regarding interests in activities, three factors (interest in athletics, interest in arts, and interest in technology) were able to explain much of how students' interests were related to one another. Interest in doing outdoor activities loaded with other sports and fitness athletic interests. Doing things with animals and thinking about fashion and style loaded with interest topics that would otherwise mostly have to do with participating in artistic activities.

The skewness in interests in athletics support the commonly expressed notion that there is a definable subgroup of students, particularly males, who focus their attention on sports (Coleman, 1961). Having an interest in arts was more in line with being female, although not exclusively so, which was also expected from prior research. Regarding having an interest in machines, technology and computer, and board and fantasy, there was no practical difference between genders.

On the 0 to 10 Bonding to School scale, average students had scores ranging between 7 and 8. This range was true for both females and males and younger and older students. Females and younger students expressed more

commitment to school, which replicates previous findings (Dever et al., 2012; Liljeberg et al., 2011; Oelsner et al., 2011; Simons-Morton et al., 1999), although increasing connectedness trajectories have also been reported (Loukas et al., 2016). These findings suggest that there is clear room for improvement regarding students' feelings of being attached to and accepted by their school. Although many published strategies for improving bonding to school involve generally improving student-teacher relations, it is noteworthy that there may be other strategies to consider as well, for instance, aligning values and interests with opportunities for student involvement.

The relatively strong observed relations between values and activities of interest were, for the most part, a reflection of what common sense might have predicted. Valuing fitness correlated with having an interest in athletic, fitness, and outdoor activities. Having an interest in the arts was correlated with valuing education. However, there were also some correlations that were less predictable. For instance, there were notable correlations between stewardship, character, creativity, and peace and an interest in the arts that were not anticipated.

The factor that involved interest in the arts (music, drama, crafts), reading, and the other topics (animals, fashion and style) was a relatively strong correlate of bonding to school. This relation was a stronger relation than was observed between interest in athletics (including outdoor activities) and bonding to school. These areas are highlighted by schools as a means of engaging students.

It was fortunate that all students within schools completed the survey. In much cross-sectional research, there is almost always a subgroup of students who are not surveyed. It is often assumed that selectivity results in a bias favoring positive responding and those less involved are more likely to not complete surveys or skip items. This bias for selectivity was not present in this study.

Implications for Programmatic Intervention and Policy

These findings have interesting implications for designing values-oriented interventions. It may not be possible to meaningfully change values (Grube, 1982; Grube et al., 1994), but it may be possible to align interventions so that there is an opportunity to capitalize on existing values. At least for the population of students who participated in this research, any interventions might benefit if they were aligned with acceptance, independence, character, fitness, and achievement. For most students, these values could easily form the basis of strategies for promoting positive youth development. For example, promoting and reinforcing the development of character (doing what is right and having self-respect) as a value might, as suggested in the correlation analysis, further promote bonding to school. Because character is already valued, remediation may not be needed. That is, an intervention that targets improving students' desire to do what is right and build their self-respect may not be needed. Highlighting and rewarding evidence of character to make its importance to students generally may be sufficient to bring it to the fore.

Individuals' values tend to be highly idiosyncratic, inherently limiting the potential of group-based interventions. To the extent possible, it may be informative to understand an individual student's highly rated values. A student who values creativity may respond to different opportunities than a student who values some other quality. Nearly all school sponsor extracurricular activities. Policies should continue to allow for extracurricular sponsored activities that address a wide range of interests, allowing them to be formally sponsored and should be expanded when possible. Orchestra, band, chorus, and team sports are not the only ways in which schools can encourage extracurricular participation. For example, it is not clear the degree to which technology-related interests are supported with extracurricular activities. Formally acknowledging values and

interests in any form is likely to improve bonding to school.

Limitations

Results represented the schools being studied. There does, however, remain the constant selectivity bias that the schools only represent a select set of all possible schools and that measurement is specific to a particular locale and historical period. Findings cannot be assumed to generalize to all middle school adolescents or to older and younger adolescents.

There are other limitations. As noted, measuring values using a ranking rather than rating system may provide a different and more individually focused assessment of terminal values. There was a clear positivity bias for most terminal values, that may have limited our ability to model value-activity and value-bonding relations.

Future Research

Future research may wish to first replicate and then explore why such relations exist. It is of interest that no terminal value was strongly associated with an interest in machines, technology, or playing computer, board or fantasy games. It is also noted that there was no relation observed between an interest in these activities and bonding to school. This finding leaves few clues that can be pursued in understanding what might drive an interest in technology or the potential role it may play in promoting an attachment to or acceptance at school. This topic is one that is clearly of interest for further research and examination.

Future researchers and theoreticians may wish to consider alternative strategies for measuring values. Specifically, it will be worth asking questions such as, "Given a specific activity, what values may be aligned with it?" There may be alternative ways of thinking about values that prior research has not adequately considered.

Acknowledgment: This project was funded in part by a grant from the National Institute on Drug Abuse, grant number 5R34-DA032829.

REFERENCES

- Bakeman, R. (2005). Recommended effect size statistics for repeated measures designs. *Behavior Research Methods*, 37(3), 379–384. <https://doi.org/10.3758/BF03192707>
- Bardi, A., & Schwartz, S. H. (2003). Values and behavior: Strength and structure of relations. *Personality and Social Psychology Bulletin*, 29(10), 1207–1220. <https://doi.org/10.1177/0146167203254602>
- Beal, S. J., & Crockett, L. J. (2010). Adolescents' occupational and educational aspirations and expectations: Links to high school activities and adult educational attainment. *Developmental Psychology*, 46(1), 258–265. <https://doi.org/10.1037/a0017416>
- Berkowitz, M. W., & Bier, M. C. (2007). What works in character education. *Journal of Research in Character Education*, 5(1), 29–49.
- Bryan, J., Moore Thomas, C., Gaenzle, S., Kim, J., Lin, C. H., & Na, G. (2012). The effects of school bonding on high school seniors' academic achievement. *Journal of Counseling & Development*, 90(4), 467–480. <https://doi.org/10.1002/j.1556-6676.2012.00058.x>
- Catalano, R. F., Kosterman, R., Hawkins, J. D., Newcomb, M. D., & Abbott, R. D. (1996). Modeling the etiology of adolescent substance use: A test of the social development model. *Journal of Drug Issues*, 26(2), 429–455. <https://doi.org/10.1177/002204269602600207>
- Catalano, R. F., Oesterle, S., Fleming, C. B., & Hawkins, J. D. (2004). The importance of bonding to school for healthy development: Findings from the Social Development Research Group. *Journal of School Health*, 74(7), 252–261. <https://doi.org/10.1111/j.1746-1561.2004.tb08281.x>
- Coleman, J. S. (1961). *The adolescent society*. Free Press.
- Costa, F. M., Jessor, R., & Donovan, J. E. (2017). Value on health and fitness in adolescent behavioral health. In R. Jessor & S. L. Jessor (Eds.), *Problem behavior theory and adolescent health* (pp. 477–493). Springer.
- Daniel, E., & Benish-Weisman, M. (2017). Value development during adolescence: Dimensions of change and stability. *Journal of Personality*, 87(3), 1–13. <https://doi.org/10.1111/jopy.12420>
- Darling, N. (2005). Participation in extracurricular activities and adolescent adjustment: Cross-sectional and longitudinal findings. *Journal of Youth and Adolescence*, 34(5), 493–505. <https://doi.org/10.1007/s10964-005-7266-8>
- Darling, N., Caldwell, L. L., & Smith, R. (2005). Participation in school-based extracurricular activities and adolescent adjustment. *Journal of Leisure Research*, 37(1), 51–76. <https://doi.org/10.1080/00222216.2005.11950040>
- Dever, B. V., Schulenberg, J. E., Dworkin, J. B., O'Malley, P. M., Kloska, D. D., & Bachman, J. G. (2012). Predicting risk-taking with and without substance use: The effects of parental monitoring, school bonding, and sports participation. *Prevention Science*, 13(6), 605–615. <https://doi.org/10.1007/s11121-012-0288-z>
- Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *American journal of Community Psychology*, 45(3–4), 294–309. <https://doi.org/10.1007/s10464-010-9300-6>
- Eccles, J. S., Barber, B. L., Stone, M., & Hunt, J. (2003). Extracurricular activities and adolescent development. *Journal of Social Issues*, 59(4), 865–889. <https://doi.org/10.1046/j.0022-4537.2003.00095.x>
- Feldman, A. F., & Matjasko, J. L. (2005). The role of school-based extracurricular activities in adolescent development: A comprehensive review and future directions. *Review of Educational Research*, 75(2), 159–210. <https://doi.org/10.3102/00346543075002159>
- Finlay, A. K., Wray-Lake, L., Warren, M., & Maggs, J. (2015). Anticipating their future: Adolescent values for the future predict adult behaviors. *International Journal of Behavioral Development*, 39(4), 359–367. <https://doi.org/10.1177/0165025414544231>
- Gilman, R., Meyers, J., & Perez, L. (2004). Structured extracurricular activities among adolescents: Findings and implications for school psychologists. *Psychology in the Schools*, 41(1), 31–41. <https://doi.org/10.1002/pits.10136>
- Grube, J. W. (1982). Can values be manipulated arbitrarily? A replication that controls for regression effects. *Personality and Social Psychology*

- Bulletin*, 8(3), 528–533. <https://doi.org/10.1177/0146167282083021>
- Grube, J. W., Mayton, D. M., & Ball-Rokeach, S. J. (1994). Inducing change in values, attitudes, and behaviors: Belief system theory and the method of value self-confrontation. *Journal of Social Issues*, 50(4), 153–173. <https://doi.org/10.1111/j.1540-4560.1994.tb01202.x>
- Hansen, W. B. (2015). All stars: A conceptual history. In L. M. Scheier (Ed.), *Handbook of adolescent drug use prevention: Research, intervention strategies, and practice* (pp. 197–216). American Psychological Association. <https://doi.org/10.1037/14550-000>
- Hansen, W. B., Bishop, D. C., & Bryant, K. S. (2009). Using online components to facilitate program implementation: impact of technological enhancements to all stars on ease and quality of program delivery. *Prevention Science*, 10(1), 66–75. <https://doi.org/10.1007/s11121-008-0118-5>
- Hansen, W. B., Reese, E. L., Bryant, K. S., Bishop, D., Wyrick, C. H., & Dyreng, D. I. (2009). *Network genie user manual*. Tanglewood Research.
- Hawkins, J. D., Guo, J., Hill, K. G., Battin-Pearson, S., & Abbott, R. D. (2001). Long-term effects of the Seattle Social Development Intervention on school bonding trajectories. *Applied Developmental Science*, 5(4), 225–236. https://doi.org/10.1207/S1532480XADS0504_04
- Henry, K. L., Knight, K. E., & Thornberry, T. P. (2012). School disengagement as a predictor of dropout, delinquency, and problem substance use during adolescence and early adulthood. *Journal of Youth and Adolescence*, 41(2), 156–166. <https://doi.org/10.1007/s10964-011-9665-3>
- Hirschi, T. (1969). A control theory of delinquency. *Criminology theory: Selected classic readings*, 289–305.
- Hitlin, S. (2003). Values as the core of personal identity: Drawing links between two theories of self. *Social Psychology Quarterly*, 118–137. <https://doi.org/10.2307/1519843>
- Holland, A., & Andre, T. (1987). Participation in extracurricular activities in secondary school: What is known, what needs to be known? *Review of Educational Research*, 57(4), 437–466. <https://doi.org/10.3102/00346543057004437>
- Jenkins, P. H. (1997). School delinquency and the school social bond. *Journal of Research in Crime and Delinquency*, 34(3), 337–367.
- Jones, C. (1983). *High school and beyond, 1980 sophomore cohort first follow-up (1982): Data file user's manual*. The National Center for Education Statistics.
- Kuperminc, G. P., Leadbeater, B. J., & Blatt, S. J. (2001). School social climate and individual differences in vulnerability to psychopathology among middle school students. *Journal of School Psychology*, 39(2), 141–159. [https://doi.org/10.1016/S0022-4405\(01\)00059-0](https://doi.org/10.1016/S0022-4405(01)00059-0)
- Lerner, D. G., & Kruger, L. J. (1997). Attachment, self concept, and academic motivation in high school students. *American Journal of Orthopsychiatry*, 67(3), 485–492. <https://doi.org/10.1037/h0080249>
- Libbey, H. P. (2004). Measuring student relationships to school: Attachment, bonding, connectedness, and engagement. *Journal of School Health*, 74(7), 274–283. <https://doi.org/10.1111/j.1746-1561.2004.tb08284.x>
- Liljeberg, J. F., Eklund, J. M., Fritz, M. V., & af Klinteberg, B. (2011). Poor school bonding and delinquency over time: Bidirectional effects and sex differences. *Journal of Adolescence*, 34(1), 1–9. <https://doi.org/10.1016/j.adolescence.2010.03.008>
- Lochman, J. E., & Wells, K. C. (2002). The Coping Power program at the middle-school transition: Universal and indicated prevention effects. *Psychology of Addictive Behaviors*, 16(4S), S40. <https://doi.org/10.1037/0893-164X.16.4S.S40>
- Loukas, A., Cance, J. D., & Batanova, M. (2016). Trajectories of school connectedness across the middle school years: Examining the roles of adolescents' internalizing and externalizing problems. *Youth & Society*, 48(4), 557–576. <https://doi.org/10.1177/0044118X13504419>
- Maddox, S. J., & Prinz, R. J. (2003). School bonding in children and adolescents: Conceptualization, assessment, and associated Variables. *Clinical Child and Family Psychology Review*, 6(1), 31–49. <https://doi.org/10.1023/A:1022214022478>
- Mahoney, J. L. (2000). School extracurricular activity participation as a moderator in the development of antisocial patterns. *Child Development*, 71(2), 502–516. <https://doi.org/10.1111/1467-8624.00160>
- Mahoney, J. L., & Cairns, R. B. (1997). Do extracurricular activities protect against early school dropout? *Developmental Psychology*, 33(2), 241. <https://doi.org/10.1037/0012-1649.33.2.241>

- Mahoney, J. L., Larson, R. W., Eccles, J. S., & Lord, H. (2005). *Organized activities as contexts of development: Extracurricular activities, after-school and community programs*. Erlbaum Associates.
- Marchant, G. J., Paulson, S. E., & Rothlisberg, B. A. (2001). Relations of middle school students' perceptions of family and school contexts with academic achievement. *Psychology in the Schools*, 38(6), 505–519. <https://doi.org/10.1002/pits.1039>
- McLean, K. C., & Syed, M. U. (Eds.). (2015). *The Oxford handbook of identity development*. Oxford Library of Psychology. <https://doi.org/10.1093/oxfordhb/9780199936564.001.0001>
- McNeal, R. B. (1995). Extracurricular activities and high school dropouts. *Sociology of Education*, 62–80. <https://doi.org/10.2307/2112764>
- McNeal, R. B. (1998). High school extracurricular activities: Closed structures and stratifying patterns of participation. *The Journal of Educational Research*, 91(3), 183–191. <https://doi.org/10.1080/00220679809597539>
- McNeal, R. B. (1999). Participation in high school extracurricular activities: Investigating school effects. *Social Science Quarterly*, 80(2), 291–309.
- Nieh, H.-P., Wu, W.-C., Luh, D.-L., Yen, L.-L., Hurng, B.-S., & Chang, H.-Y. (2018). Will personal values predict the development of smoking and drinking behaviors? A prospective cohort study of children and adolescents in Taiwan. *Journal of Health Psychology*, 23(7), 982–992. <https://doi.org/10.1177/1359105316681063>
- National Research Council. (2003). *Engaging schools: Fostering high school students' motivation to learn*. National Academies Press.
- Oelsner, J., Lippold, M. A., & Greenberg, M. T. (2011). Factors influencing the development of school bonding among middle school students. *The Journal of Early Adolescence*, 31(3), 463–487. <https://doi.org/10.1177/0272431610366244>
- Oyserman, D., Terry, K., & Bybee, D. (2002). A possible selves intervention to enhance school involvement. *Journal of Adolescence*, 25, 313–326. <https://doi.org/10.1006/jado.2002.0474>
- Rankin, W. L., & Grube, J. W. (1980). A comparison of ranking and rating procedures for value system measurement. *European Journal of Social Psychology*, 10(3), 233–246. <https://doi.org/10.1002/ejsp.2420100303>
- Rokeach, M. (1973). *The nature of human values*. Free Press.
- Rosenberg, M. (2015). *Society and the adolescent self-image*. Princeton University Press.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. P. Zana (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–65). Elsevier.
- Schwartz, S. H. (2010). Basic values: How they motivate and inhibit prosocial behavior. In M. Mikulincer & P. R. Shaver (Eds.), *Prosocial motives, emotions, and behavior: The better angels of our nature* (pp. 221–241). American Psychological Association. <https://doi.org/10.1037/12061-012>
- Schwartz, S. H. (2012). An overview of the Schwartz theory of basic values. *Online Readings in Psychology and Culture*, 2(1). <https://doi.org/10.9707/2307-0919.1116>
- Shochet, I. M., Dadds, M. R., Ham, D., & Montague, R. (2006). School connectedness is an underemphasized parameter in adolescent mental health: Results of a community prediction study. *Journal of Clinical Child & Adolescent Psychology*, 35(2), 170–179. https://doi.org/10.1207/s15374424jccp3502_1
- Shubert, J., Metzger, A., Wray-Lake, L., & Syvertsen, A. K. (2016). Exploring associations of character profiles and out-of-school time activities among children and adolescents. *Journal of Character Education*, 12(2), 11–27.
- Shulruf, B., Tumen, S., & Tolley, H. (2008). Extracurricular activities in school, do they matter? *Children and Youth Services Review*, 30(4), 418–426. <https://doi.org/10.1016/j.childyouth.2007.10.012>
- Simons-Morton, B. G., Crump, A. D., Haynie, D. L., & Saylor, K. E. (1999). Student-school bonding and adolescent problem behavior. *Health Education Research*, 14(1), 99–107. <https://doi.org/10.1093/her/14.1.99>
- Watkins, M. W., & Edwards, V. A. (1992). Extracurricular reading and reading achievement: The rich stay rich and the poor don't read. *Reading Improvement*, 29(4), 236–242.
- Wenzel, V., Weichold, K., & Silbereisen, R. K. (2009). The life skills program IPSY: Positive influences on school bonding and prevention of substance misuse. *Journal of Adolescence*, 32(6), 1391–1401. <https://doi.org/10.1016/j.adolescence.2009.05.008>

Whiteside-Mansell, L., Weber, J. L., Moore, P. C., Johnson, D., Williams, E. R., Ward, W. L., Robbins, J. M., & Phillips, B. A. (2015). School bonding in early adolescence: Psychometrics of the Brief Survey of School Bonding. *The Journal of Early Adolescence*, 35(2), 245–275. <https://doi.org/10.1177/0272431614530808>