

**When “Journalism Kids” Do Better:
A Reassessment of Secondary and Post-Secondary Achievement and Activities**

Piotr S. Bobkowski

Sarah B. Cavanah

Article accepted for publication in *Journalism and Mass Communication Educator*

Keywords

academic achievement, journalism education, scholastic journalism, standardized tests

Abstract

Using data from the nationally representative Education Longitudinal Study of 2002, this study examined how journalism participation in high school relates to subsequent academic outcomes. The analysis statistically controlled for a host of correlates of academic achievement, isolating the associations between journalism participation and subsequent outcomes. Results indicated that students who take more journalism in high school score higher than their peers on standardized tests of English; are more likely to major in journalism or related fields; and when they do, have higher grades in college English. Students who participate in extracurricular journalism also see some of these gains.

Author Bios

Piotr S. Bobkowski (Ph.D., University of North Carolina at Chapel Hill, 2010) is an associate professor in the William Allen White School of Journalism and Mass Communications at the University of Kansas. His research focuses on the developmental role of media, on scholastic journalism, and data literacy. He teaches information literacy to journalism and strategic communication students.

Sarah B. Cavanah (Ph.D., University of Minnesota, 2016) is an assistant professor in the Department of Mass Media at Southeast Missouri State University. She teaches courses in public relations and mass communication, advises the student-run public relations firm, Riverfront PR, and researches the interactions between communities and information.

When “Journalism Kids” Do Better:

A Reassessment of Secondary and Post-Secondary Achievement and Activities

The notion that secondary school students who take journalism or participate in student media end up performing academically better than their peers who do not take journalism is well established in scholastic journalism education literature (Becker, Han, Wilcox, & Vlad, 2014; Bruschke & George, 1999; Dvorak, Bowen, & Choi, 2009; Dvorak & Choi, 2009; Dvorak, Lain, & Dickson, 1994; Morgan & Dvorak, 1994). Recent research has complicated this notion, however, by showing that before they enroll in journalism, high school journalists already achieve academically at a higher level than students who do not take journalism (Bobkowski, Cavanah, & Miller, 2017). Students who end up taking journalism tend to have greater self-efficacy in English, a higher English GPA, be more involved in their schools, and tend to be female, white, and come from higher socioeconomic backgrounds than non-journalists (Bobkowski et al., 2017). This suggests that even without taking journalism, high school journalists are likely to perform better academically than their non-journalist peers.

The unresolved question, then, is: Accounting for journalism students’ academic backgrounds, is journalism education uniquely related to academic activities or achievement? The present research draws on theories of motivation and vocational choice, and builds on prior data analyses, to refine the “journalism kids do better” assertion by proposing that journalism education can contribute to domain-specific academic success and specialization.

Literature Review

Self-determination theory (Deci & Ryan, 2000) and Holland’s (1997) theory of careers help conceptualize the relationship between high school journalism participation and subsequent educational activities and outcomes. According to self-determination theory (Deci & Ryan,

2000), individuals are motivated to engage in intrinsically rewarding activities while their motivation for activities with external contingencies (i.e., grades, compensation) is limited to instances in which such motivators are present. There is a reciprocal relationship between intrinsically motivated educational tasks and achievement, and studies have demonstrated that students perform better when they are intrinsically motivated to learn than when their motivation is less intrinsic (e.g., Fortier, Vellerand, & Guay, 1995; Oga-Baldwin, Nakata, Parker, & Ryan, 2017). Among college students, intrinsic motivation for a subject also has been linked with sustained interest and majoring in that subject (Harackiewicz, Barron, Tauer, & Elliot, 2002). Individuals can internalize activities that initially are motivated extrinsically so that with time, these tasks become intrinsically rewarding. Self-determination theory thus suggests that students who consistently perform better in high school English, journalism, and related subjects, likely are motivated intrinsically to pursue these subjects—even if they are initially motivated by good grades—and subsequently are likely to continue engaging in similar and related activities. It is likely, then, that students who take journalism in high school will perform well on standardized tests that assess skills and aptitudes that journalism fosters, and that they will continue engaging in journalism-related activities after high school.

Holland's (1997) theory of careers likewise suggests that students whose interests match the journalistic environment may specialize in journalism in high school and college, and that such students may accrue positive academic outcomes. According to this theory, individuals' vocational interests and work environments can be classified using combinations of five descriptors (i.e., realistic, investigative, social, enterprising, artistic, conventional). For instance, an individual may express interest in work that is social, investigative, and artistic, and a number of environments within which specific occupations operate (e.g., reporters, librarians, nurse

practitioners) likewise exhibit these characteristics. Individuals strive for congruence between their interests and the characteristics of their occupational environments, and this congruence results in positive occupational outcomes like greater job satisfaction, dedication, and achievement. In educational settings, studies have shown that high school students' occupational interests predict the subjects these students study in college (Pinxten et al., 2015; Porter & Umbach, 2006), and that congruence between college students' interests and the subjects they study is related to positive academic outcomes. Students with higher congruence had higher first- and second-year college GPAs (Tracey & Robbins, 2006), and tended to finish college in less time than students whose interest-major congruence was lower (Allen & Robbins, 2010).

In all, self-determination and occupation theories suggest that the more students specialize in journalism in high school, the more likely they are to pursue journalism-related activities, and to perform well on such activities. We consider next these specific activities and academic outcomes.

Standardized English tests

Both the ACT and the SAT include sections measuring English proficiency that may be related to journalism education. Indeed, studies have found that students who worked on a high school publication scored higher on ACT English and Reading (Dvorak et al., 1994; Dvorak & Choi, 2009; Dvorak et al., 2009), and on SAT Verbal (Bruschke & George, 1999) than non-journalism students. The ACT is curriculum-based, assessing concepts and skills students learn in high school. The SAT measures aptitude more generally, assessing students' ability to comprehend, reason through, and express concepts (Fincher, 2006; College Blue Book, 2005). The 2004-05 versions of these tests, which match the standardized test scores used in this study's analysis, were as follows. The ACT included two English language components, ACT English

and ACT Reading. ACT English focused on elements of writing (i.e., punctuation, grammar, sentence structure), and on rhetorical conventions (i.e., strategy, style) (Dorans, 1999; Standardized Tests, 2008). ACT Reading measured reading comprehension (Standardized Tests, 2008). SAT Verbal assessed students' aptitude for understanding and examining college-level writing, focusing on "antonyms, analogies, sentence completions, and paragraph comprehension" (Fincher, 2006, p. 1096).

It is not clear if students' interest in high school journalism is related to an interest in writing specifically, to language-oriented activities more generally, or to both. Prior research showed journalism students performing better on all three English language components of the ACT and SAT. Scores on the three sections also were correlated at approximately $r = .80$, suggesting that the sections measure unique but highly related constructs (Dorans, 1999). We thus expect that:

H1: Students who take more journalism classes in high school score better than those who take fewer classes on (a) SAT Verbal, (b) ACT English, and (c) ACT Reading.

College enrollment

Although most research has not assessed the link between journalism participation and college enrollment, studies showing higher achievement among secondary school journalists imply that these students are more likely than non-journalists to attend colleges and universities. One study has shown that students who were involved in the newspaper or yearbook in the 10th grade were more likely than their peers to enroll in an elite college, but no more likely than their peers to enroll in a non-elite college (Kaufman & Gabler, 2004). It is unclear, however, why journalism students appeared to have this advantage. More generally, because the ACT and SAT are used to determine admission decisions in U.S. post-secondary institutions, the journalism

students who do better than their peers on these standardized tests may be more likely than others to be admitted to college. College admission decisions also are based on the quality of applicants' essays, with which journalism students may have an advantage, because they tend to be more confident about their writing than their peers (Bobkowski et al., 2017). Thus, we expect that:

H2: Students who take more journalism classes in high school are more likely than those who take fewer classes to (a) pursue postsecondary education, and (b) attend a four-year college.

College major

Self-determination and occupation theories suggest that once in college, journalism students may be more likely than their peers to continue engaging in journalism education by majoring in it or in a related field (Harackiewicz et al., 2002). In colleges that do not offer a journalism major, students may be able to specialize in journalism while majoring in more ubiquitous fields like communication studies or English. Research has shown that secondary-school journalists are ten times more likely than non-journalists to choose journalism or communication as a major (Dvorak, 1990). More than half of college journalism graduates (54.3%) recently reported that they decided on journalism while in high school, largely because of their participation in high school publications (Becker, Han, Wilcox, & Vlad, 2014). We predict, therefore, that:

H3: Students who take more journalism classes in high school are more likely than those who take fewer classes to major in (a) journalism, (b) communication studies, and (c) English.

Achievement in college

The congruence hypothesis of Holland's (1997) occupation theory suggests that students who specialize in journalism in high school and college will perform better in college than

students who have less congruence. Studies have shown that students with higher congruence between their high school interests and college majors had higher GPAs than those who had less congruence (Tracey & Robbins, 2006), and that students whose occupational interests matched their majors tended to graduate college quicker than those with less congruence (Allen & Robbins, 2010). Journalism-specific research also has shown that students who selected journalism as their major while still in high school had higher college GPAs and more internships than their peers (Becker, Han, Wilcox, & Vlad, 2014). This suggests the following:

H4: Students who take journalism in high school and who major in a journalism-related field will tend to (a) have a higher GPA in journalism-related classes, and (b) finish college in less time than other college students.

Method

Sample and Data. Data from the Education Longitudinal Study of 2002 (ELS:2002), which has tracked the academic trajectories of a cohort of students for more than a decade, was used in the analyses. ELS:2002 is one of five longitudinal studies launched since 1972 by the National Center for Education Statistics, U.S. Department of Education, to collect a variety of data on secondary-school students. ELS:2002 continues to be an active source of data for research in a variety of educational subfields (National Center for Education Statistics, 2019). Data collected in this survey includes students' journalism involvement in high school, extracurricular involvement, and English self-efficacy. ELS:2002 thus is the most recent and largest representative longitudinal dataset available for analysis of the relationship between high school journalism participation and achievement in high school and college, while controlling for possible confounding variables found in smaller, localized samples. At baseline, the stratified random sample consisted of 15,360 10th-grade students in 750 U.S. schools in spring 2002 (see

Ingels et al., 2014). The dataset includes baseline and three follow-up surveys, taken in 2004, 2006, and 2012, as well as high school and post-secondary transcript data. Access to restricted data for this analysis, including transcripts, was licensed by the Institute of Education Sciences. Because some variables contained non-trivial levels of missing responses, and because listwise deletion may have compromised the integrity of the dataset, Amelia II, a multiple imputation program, imputed iterations of the dataset for final analysis (Honaker & King, 2010).

Outcome Measures. *Standardized test scores* were reported in college transcripts and obtained from testing agencies (i.e., College Board and ACT). SAT Verbal ($M = 513.56$; $SE = 3.10$), ACT English ($M = 20.43$; $SE = .16$), and ACT Reading ($M = 21.47$; $SE = .15$) scores are used here. About one-third of the original sample took each of the tests (ACT: $n = 5,720$; SAT: $n = 5,780$).

Two dichotomous variables were used to characterize students' post-secondary education prior to June 2013. *Ever attended college* ($M = .84$; $SE = .01$) indicated whether students ever were enrolled in a post-secondary institution. *Four-year college* ($M = .56$; $SE = .01$) indicated whether students ever attended a four-year post-secondary institution.

For students who attended college, post-secondary transcripts indicated the major fields of study for all degrees earned. These were coded using the Classification of Instructional Programs (CIP; National Center for Education Statistics, 2010). Three dichotomous variables were used to indicate majors: *journalism* ($M = .02$; $SE = .002$), *communication studies* ($M = .02$; $SE = .002$), and *English* ($M = .02$; $SE = .002$). Journalism encompassed majors typically offered in journalism departments and schools (i.e., journalism, broadcast, public relations, advertising).

Postsecondary GPAs for courses in journalism ($M = 3.03$; $SE = .03$), communication studies ($M = 2.99$; $SE = .02$), and English ($M = 2.73$; $SE = .02$) were calculated using students'

postsecondary transcript data. For students who completed four-year degrees, *BA completion time* ($M = 55.16$; $SE = .32$) indicated the number of months between starting postsecondary education and the awarding of a bachelor's degree.

Independent Measures. *High school journalism credits* ($M = .14$; $SE = .01$) was the sum of Carnegie units in journalism and journalism-related classes that students earned in grades 9–12. One Carnegie unit is equivalent to the credit typically earned in a one-semester course. *Extracurricular journalism* ($M = .15$; $SE = .01$) indicated whether students participated in non-credit newspaper or yearbook in the 10th or 12th grade. *Journalism congruence* ($M = .01$; $SE = .001$) indicated that students earned more than one credit in journalism in high school, and that they majored in a journalism-related field in college.

Control Measures. The following variables were included as controls in the regression models because prior research indicated that they predict journalism participation in high school and achievement in college (Bobkowski et al., 2017; Chase, Hilliard, Geldhof, Warren, & Lerner, 2014; Pike & Saupe, 2002; Westrick, Le, Robbins, Radunzel, Schmidt, 2015). Student-level demographics included *gender* ($M = .53$; $SE = .01$; 1 = female), a dichotomized measure of *race/ethnicity* ($M = .62$; $SE = .01$; 1 = white, non-Hispanic), and *socioeconomic status* (SES) ($M = .09$; $SE = .02$). SES was a standardized scale constructed by ELS:2002 from household income, parents' education, and parents' occupations.

In regression models predicting high school outcomes, control variables included baseline standardized *English self-efficacy* ($M = .09$; $SE = .01$), transcript-reported grade 9–12 *English GPA* ($M = 2.79$; $SE = .02$), and standardized *baseline aptitude* ($M = .19$; $SE = .02$). In regression models predicting college outcomes, these three variables were replaced with a

composite SAT score ($M = 1005.18$; $SE = 5.04$); this variable included ACT score equivalents for students who only took the ACT.

School activities ($M = 2.16$; $SE = .03$) was the tally of non-athletic and non-journalism school activities, and *school sports* ($M = 1.09$; $SE = .02$) was the number of interscholastic sports in which students participated at baseline. School-level demographics comprised an indicator of *high school sector* ($M = .91$; $SE = .01$; 1 = public), and *school socioeconomics* ($M = -.31$; $SE = .02$), which averaged the socioeconomics of each school's respondents (e.g., Engberg & Wolniak, 2010).

Analysis. A multilevel regression approach was used in the analyses because ELS:2002 comprised nested data (individual students clustered within schools) (Hayes, 2006). The between-schools variance components were statistically significant, indicating that the multilevel regression approach was appropriate.

Results

The first set of hypotheses predicted that increased participation in journalism was related to higher scores on standardized English tests. As the extracted regression coefficients and their associated p -values show in Table 1 (models 1a-c; full regression models are presented in a Supplementary File), this hypothesis was supported for both curricular and extracurricular journalism. The more for-credit journalism classes that students took, the higher they tended to score on the SAT Verbal, ACT English, and ACT Reading tests. While the overall averages for these tests were 515, 20, and 22, respectively, students who took more than a semester of journalism before the 12th grade averaged 538, 22, and 23 on these tests. Likewise, the more times that students indicated participating in extracurricular journalism, the higher they tended to score on the tests (558, 23, 23, respectively). The regression models controlled for a series of

socioeconomic, academic, and school variables, suggesting that journalism classes and participation contributed uniquely to these students' English test scores.

Hypotheses 2a-b were not supported (see models 2a and 2b in Table 1). Students who took more journalism classes, and those who participated in extracurricular journalism, were no more likely than their peers who took fewer or no journalism classes, or who did not participate in extracurricular journalism, to engage in postsecondary education or to attend a four-year college.

Among students who engaged in postsecondary education, the more high school journalism classes these students took, the more likely they were to major in journalism, communication studies, or English (see models 3a-c in Table 1). Among students with no high school journalism experience, only 2% majored in journalism, 2% in communication studies, and 2% in English. Among students with more than one semester of high school journalism, these rates were 5% for journalism, 4% for communication studies, and 5% for English. Among those with more than two semesters of journalism, they were 7% for journalism, 6% for communication studies, and 6% for English. Students who participated in extracurricular journalism were more likely than their peers to major in English, but were not more likely to major in journalism or communication studies. Hypothesis 3, therefore, was supported for for-credit journalism, and supported only for majoring in English for extracurricular journalism. Additional analyses also showed that neither for-credit nor extracurricular high school journalism was related to the likelihood of majoring in any other fields, including business, education, psychology, and social studies.

Students who "specialized" in journalism by taking more than one semester of for-credit journalism in high school, and by majoring in a journalism-related field in college, tended to

have a higher GPA in college English than their peers who did not specialize in journalism. The average English GPA among students who specialized in journalism was 3.19, and 2.70 among those who did not specialize. This supported H4c (see model 4c in Table 1). Journalism specialization was not related with having higher GPAs in journalism or communication studies classes, or with the amount of time it took students to complete a bachelor's degree (see models 4a-b, d in Table 4).

Discussion

In a period of decreasing per-pupil allocations in public schools (Leachman & Mai, 2014) and declining trust in the institution of journalism (Mitchell, Gottfried, Barthel, & Shearer, 2016), many high school journalism teachers and supporters consider their programs to be in danger of cuts or elimination (e.g., Hu, 2013). This puts increasing pressure on researchers to understand what benefits high school journalism programs may provide to students, the mechanisms behind any benefits, and which students are reaping the rewards of any benefits. This study builds on the findings related to the latter (Bobkowski et al., 2017) by adding insight into the former.

This study gives us the clearest picture yet of the educational outcomes associated with high school journalism participation by using a large, longitudinal data set that allows for the control of various factors that have confounded previous attempt to isolate the effects of journalism education (e.g., Dvorak et al., 1994). With statistical controls in place, our analyses show that journalism positively accounts for some academic outcomes. We propose that self-determination and occupational specialization explain why students who engage in journalism in secondary school do well on English-related standardized tests, major in journalism or related fields, and do well in college English. Students who are motivated to take journalism in high

school because of their demonstrated aptitude for English and writing (Bobkowski et al., 2017), observe a slight improvement in English-related standardized test scores over similar students who do not take journalism. Continued positive outcomes in English, combined with internal motivation to engage in rewarding activities, likely motivate these students to pursue a journalism or a related major in college at a higher rate than students without high school journalism experience. Consistent with Holland's (1997) theory of careers, continuing their specialization in journalism, communication, or English in college, these students observe higher-than-average grades in English classes.

In addition to the continually reinforced motivation to specialize in journalism and related activities, the experiential nature of journalism also may facilitate academic gains. Experiential learning allows students to capitalize on their previous knowledge and skills to facilitate their own learning while engaging the community and addressing "real" issues in a team setting (Gosen & Washbush, 2004). It is perhaps through such practice-based, higher-order learning that journalism yields gains on standardized tests and college achievement. Given the process-based nature of the journalism learning environment, future research may focus on non-academic outcomes, and identify better metrics than standardized tests, for assessing the value of journalism participation. These could include fostering civic knowledge and engagement (Bobkowski & Miller, 2015; Clark & Monseratte, 2011), or fostering the "soft skills" increasingly connected to workplace success, such as communication skills, flexibility, responsibility, and teamwork (Robles, 2012), all of which are included in the experience of producing journalism.

The experiential nature of high school journalism also may explain why both students who take journalism for course credit and those who participate through extracurricular activities

see improvement in English-related standardized test scores. Student autonomy is a crucial aspect of educational environments that foster intrinsic motivation (Deci & Ryan, 2000). Such autonomy is practiced in many journalism classrooms by allowing students to actively make decisions on the production and final presentation of media products independent of the adviser (e.g. JEA's "Model Guidelines," n.d.). In the process of producing journalism, students must use verbal, writing and English mechanics skills, but for goals determined by the students themselves. Thus, the very aspect that can make journalism an attractive candidate for program cuts — its lack of status as a core course — may make it an ideal setting for reinforcing core skills in ways that show up in standardized assessments. The presence of a set, stated and programmatic pedagogical approach, more likely to be found in core subject classrooms than in journalism classes and clubs, may be less important for student outcomes than the motivation and authenticity that journalism's experiential approach offers. This theoretically-predicted role of autonomy in student journalist outcomes deserves further research, as is the educator's role in its creation and support.

While journalism's connection to English-related outcomes and specialization are evident in the data, journalism's scope may be too limited to increase high school journalists' chances of attending a four-year college. College enrollment depends on a complex set of factors beyond academic preparation, including socioeconomics, and parent and peer aspirations (Engberg & Wolniak, 2010). Whatever benefits stem from engaging in journalism-focused experiential learning may be too narrow to significantly increase students' overall chances of attending college.

There is still much more work to do than has been done in understanding how and why journalism education works, and for whom. Perhaps looming largest over the field is the reliance

on national standardized tests to provide outcome measures. While it incorporates most — if not all — of the “core skills” assessed on these tests, journalism is not, and likely never will be, a core skill. Studies with relatively small samples and/or case studies give indications that journalism participation can foster greater civic knowledge, engagement and pride (Clark & Monserrate, 2011; Marchi, 2012; Neely, 2015; Tuggle, Sneed, & Wulfemeyer, 1999) and build technology self-efficacy, particularly in lower SES students (Plopper & Conaway, 2013). Applying self-determination and occupational theories in this study of a large data set hints at the possibility of effects on concepts such as motivation, autonomy and eventual job satisfaction. What is missing from the field are studies that directly measure these concepts across samples large enough to control for the numerous other variables that impact such outcomes. To better understand and explain the role of journalism education to others, research should strive to better measure the concepts and test these hypotheses.

References

- Allen, J., & Robbins, S. (2010). Effects of interest-major congruence, motivation, and academic performance on timely degree attainment. *Journal of Counseling Psychology, 57*(1), 23–35. doi: 10.1037/a0017267
- Becker, L. B., Han, J. Y., Wilcox, D., & Vlad, T. (2014). The effects of pre-university study of journalism on entry to the job market. *Journalism & Mass Communication Quarterly, 91*(2), 344–356. doi:10.1177/1077699014527458
- Bobkowski, P. S., Cavanah, S. B., & Miller, P. R. (2017). Who are the “journalism kids”? Academic predictors of journalism participation in secondary schools. *Journalism & Mass Communication Educator, 72*(1), 68–82. doi:10.1177/1077695815622770

- Bobkowski, P. S., & Miller, P. R. (2016) Civic implications of secondary school journalism: Associations with voting propensity and community volunteering. *Journalism & Mass Communication Quarterly*, 93(3), 530-550. doi:10.1177/1077699016628821
- Burschke, J. & George, M. H. (1999). Verbal skills and the value of scholastic journalism. *Journalism & Mass Communication Educator*, 54(3), 65–72.
doi:10.1177/107769589905400305
- Chase, P. A., Hilliard, L. J., Geldhof, G. J., Warren, D. J. A., & Lerner, R. M. (2014). Academic achievement in the high school years: The changing role of school engagement. *Journal of Youth and Adolescence*, 43, 884-896. doi:10.007/s10964-013-0085-4
- Clark, L. S., & Monserrate, R. (2011). High school journalism and the making of young citizens. *Journalism*, 12(4), 417–432. doi:10.1177/1464884910388225
- College Blue Book, The. (2005). Taking standardized admissions tests. *The College Blue Book: Distance learning programs* (32nd ed., vol. 6, pp 35-39). Detroit, MI: Macmillan Reference USA, Gale Virtual Reference Library.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268.
- Dvorak, J. (1990). College students evaluate their scholastic journalism courses. *Journalism & Mass Communication Educator*, 45(1), 36–46. doi:10.1177/107769589004500105
- Dvorak, J., Bowen, C. P., & Choi, C. (2009). Minority journalism student academic comparisons between those with and those without high school print media experience. *Journalism & Mass Communication Educator*, 64(3), 258–272. doi:10.1177/107769580906400303
- Dvorak, J., & Choi, C. (2009). High school journalism, academic performance correlate. *Newspaper Research Journal*, 30(3), 75–89.

- Dvorak, J., Lain, L., & Dickson, T. (1994). *Journalism kids do better: What research tells us about high school journalism*. Bloomington, IN: ERIC Clearinghouse on Reading, English, and Communication: EDINFO Press.
- Dorans, N. J. (1999). Correspondence between ACT and SAT I scores (College Board Report No. 99-1). New York, NY: College Board Publications. Retrieved from: <https://www.ets.org/Media/Research/pdf/RR-99-02-Dorans.pdf>
- Engberg, M. E., & Wolniak, G. C. (2010). Examining the effects of high school contexts on postsecondary enrollment. *Research in Higher Education, 51*, 132–153.
doi:10.1007/s11162-009-9150-y
- Fincher, C. (2006). SAT. In N. J. Salkind (ed.), *Encyclopedia of human development* (vol. 3) (pp. 1096-1102). Thousand Oaks, CA: SAGE Reference, Gale Virtual Reference Library.
- Fortier, M. S., Vellerand, R. J., & Guay, F. (1995). Academic motivation and school performance: Toward a structural model. *Contemporary Educational Psychology, 20*, 257-274.
- Gosen, J., & Washbush, J. (2004). A Review of Scholarship on Assessing Experiential Learning Effectiveness. *Simulation & Gaming, 35*(2), 270–293. doi:10.1177/1046878104263544
- Harackiewicz, J. M., Barron, K. E., Tauer, J. M., & Elliot, A. J. (2002). Predicting success in college: A longitudinal study of achievement goals and ability measures as predictors of interest and performance from freshman year through graduation. *Journal of Educational Psychology, 94*(3), 562-575. doi:10.1037/0022-0663.94.3.562
- Hayes, A. F. (2006). A primer on multilevel modeling. *Human Communication Research, 32*, 385–410. doi:10.1111/j.1468-2958.2006.00281.x

- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd. ed.). Lutz, FL: Psychological Assessment Resources.
- Honaker, J., & King, G. (2010). What to do about missing values in time series cross-section data. *American Journal of Political Science*, *54*, 561–581. doi:10.1111/j.1540-5907.2010.00447.x
- Hu, W. (2013, May 27). At school papers, the ink is drying up. *New York Times*. Retrieved from: nytimes.com
- Ingels, S. J., Pratt, D. J., Alexander, C. P., Jewell, D. M., Lauff, E., Mattox, T. L., . . . Christopher, E. (2014). *Education Longitudinal Study of 2002 (ELS:2002) Third Follow-Up Data File Documentation* (NCES 2014–364). Washington, DC: US Government Printing Office.
- Journalism Education Association (n.d.) Model guidelines. Retrieved from: jea.org
- Kaufman, J., & Gabler, J. (2004). Cultural capital and the extracurricular activities of girls and boys in the college attainment process. *Poetics*, *32*, 145–168. doi:10.1016/j.poetic.2004.02.001
- Leachman, M., & Mai, C. (2014). Most states still funding schools less than before the recession. *Center on Budget and Policy Priorities*, *16*. Retrieved from: <https://www.cbpp.org/research/most-states-still-funding-schools-less-than-before-the-recession>
- Marchi, R. (2012). From disillusion to engagement: Minority teen journalists and the news media. *Journalism*, *13*(6), 750–765. doi:10.1177/1464884911431379
- Mitchell, A., Gottfried, J., Barthel, M., & Shearer, E. (2016, July 7). The modern news consumer: News attitudes and practices in the digital era. Retrieved from: journalism.org

- Morgan, L., & Dvorak, J. (1994). Impact of journalism instruction on language arts in Alaskan schools. *Journalism Educator*, 49(3), 15–19. doi:10.1177/107769589404900302
- National Center for Education Statistics. (2010). *Classification of instructional programs: CIP 2010*. Available at nces.ed.gov/ipeds/cipcode/Default.aspx?y=55
- National Center for Education Statistics. (2019). *Bibliography Search Tool*. Retrieved from: nces.ed.gov/bibliography
- Neely, J. C. (2015). Plugging in: Possibilities for connecting teens and communities through scholastic and nonscholastic youth media websites. *Youth & Society*, 47(4), 565–585. doi:10.1177/0044118X13483776
- Oga-Baldwin, W. L. Q., Nakata, Y., Parker, P., & Ryan, R. M. (2017). Motivating young language learners: A longitudinal model of self-determined motivation in elementary school foreign language classes. *Contemporary Educational Psychology*, 49, 140-150.
- Pike, G. R., & Saupe, J. L. (2002). Does high school matter? An analysis of three methods of predicting first-year grades. *Research in Higher Education*, 43(2), 187-207.
- Pinxten, M., De Fraine, B., Van Den Noortgate, W., Van Damme, J., Boonen, T., & Vanlaar, G. (2015). “I choose so I am”: A logistic analysis of major selection in university and successful completion of the first year. *Studies in Higher Education*, 40(10), 1919–1946. doi: 10.1080/03075079.2014.914904
- Plopper, B. L. & Conaway, A. F. (2103). Scholastic journalism teacher use of digital devices and social networking tools in a poor, largely rural state. *Journalism & Mass Communication Educator*, 68(1), 50–68. doi:10.1177/1077695812472895
- Porter, S. R., & Umbach, P. D. (2006). College major choice: An analysis of person-environment fit. *Research in Higher Education*, 47(4), 429–449.

- Tracey, T. J. G., & Robbins, S. B. (2006). The interest-major congruence and college success relation: A longitudinal study. *Journal of Vocational Behavior, 69*, 64–89.
doi:10.1016/j.jvb.2005.11.003
- Tuggle, C. A., Sneed, D., & Wulfemeyer, K. T. (1999). Teaching media studies as high school social science. *Journalism & Mass Communication Educator, 54*(4), 67–76.
doi:10.1177/107769589905400407
- Robles, M. M. (2012). Executive perceptions of the top 10 soft skills needed in today's workplace. *Business Communication Quarterly, 75*(4), 453–465.
- Westrick, P. A., Le, H., Robbins, S. B., Radunzel, J. M. R., & Schmidt, F. L. (2015). College performance and retention: A meta-analysis of the predictive validities of ACT scores, high school grades, and SES. *Educational Assessment, 20*(1), 23-45.
doi:10.1080/10627197.2015.997614
- Standardized Tests. (2008). In W. A. Darity, Jr. (Ed.), *International encyclopedia of the social sciences* (2nd ed., vol. 8) (pp. 95-98). Detroit, MI: Macmillan Reference USA, Gale Virtual Reference Library.

Table 1

Regression coefficients from mixed effects models predicting academic achievement and activities from journalism participation and specialization.

	<i>B (SE)</i>	<i>p</i>
1a. SAT Verbal (<i>n</i> = 4,860)		
Journalism credits	4.31 (1.84)	.020
Extracurricular journalism	5.36 (2.00)	.007
Wald χ^2 (<i>df</i> = 12) = 7663.16		< .001
1b. ACT English (<i>n</i> = 4,940)		
Journalism credits	.42 (.10)	< .001
Extracurricular journalism	.26 (.12)	.033
Wald χ^2 (<i>df</i> = 12) = 7277.14		< .001
1c. ACT Reading (<i>n</i> = 4,940)		
Journalism credits	.28 (.11)	.011
Extracurricular journalism	.33 (.14)	.018
Wald χ^2 (<i>df</i> = 12) = 5305.52		< .001
2a. Postsecondary education (<i>n</i> = 7,100)		
Journalism credits	-.01 (.17)	.979
Extracurricular journalism	-.07 (.22)	.750
Wald χ^2 (<i>df</i> = 10) = 195.24		< .001
2b. Four-year college (<i>n</i> = 7,050)		
Journalism credits	.04 (.07)	.581
Extracurricular journalism	-.10 (.08)	.240
Wald χ^2 (<i>df</i> = 10) = 961.14		< .001
3a. Journalism major (<i>n</i> = 7,280)		
Journalism credits	.48 (.09)	< .001
Extracurricular journalism	.28 (.15)	.053
Wald χ^2 (<i>df</i> = 10) = 40.93		< .001
3b. Comm. studies major (<i>n</i> = 7,280)		
Journalism credits	.34 (.09)	< .001
Extracurricular journalism	-.08 (.15)	.614
Wald χ^2 (<i>df</i> = 10) = 75.88		< .001
3c. English major (<i>n</i> = 7,280)		
Journalism credits	.28 (.10)	.004
Extracurricular journalism	.53 (.12)	< .001
Wald χ^2 (<i>df</i> = 10) = 152.52		< .001
4a. Journalism GPA (<i>n</i> = 1,370)		
Journalism specialization	.16 (.14)	.267

	Wald χ^2 ($df=9$) = 142.67	< .001
4b. Comm. studies GPA ($n = 4,430$)		
Journalism specialization	.04 (.13)	.781
Wald χ^2 ($df=9$) = 513.34		< .001
4c. English GPA ($n = 6,580$)		
Journalism specialization	.30 (.12)	.014
Wald χ^2 ($df=9$) = 1323.41		< .001
4d. Bachelor's completion time ($n = 4,330$)		
Journalism specialization	-2.77 (2.01)	.168
Wald χ^2 ($df=9$) = 508.79		< .001

Source: Education Longitudinal Study of 2002, Restricted Data.

Note: 1a-c and 4a-d are ordinary least square regression models. 2a-b and 3a-c are logistic regression models. All models controlled for gender, race, socioeconomic status, school activities, school sports, high school sector, and school socioeconomics. Models 1a-c controlled for baseline English self-efficacy, English GPA, and baseline aptitude. Models 2-4 controlled for a composite SAT score.