Impact of Media on Major Choice: Survey of Communication Undergraduates

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Popular and news media sources may play a key role in influencing undergraduate choice of major, yet their unique impact has not been investigated. Most research has focused on the influence of unmediated salient referents, such as parents, on students' major choices. Therefore, we developed a scale to examine the role of media professionals and celebrities (mediated salient referents) and unmediated salient referents on career selection. Overall, we investigated the ways media exposure, technology use, mediated salient referents, and unmediated salient referents influenced variations in the likelihood students choose the media-related major of journalism through a survey of communication undergraduates (N =←2,401). Results showed mediated referents and news consumption positively predicted the choice of journalism as a major, while unmediated referents influenced students' selection of other communication-related majors.

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Media and communication technologies engulf modern lives, influence one's perceived view of the world, and mediate personal interactions with individuals and society. Despite the undeniable reach and pervasiveness of information and entertainment industries, vocational scholars have not fully explored the way media and communication technologies influence students' choices of college majors or careers. Other predictors of choice, such as demographics, beliefs about academic disciplines, individual motivations, personality traits, and the roles of family, friends, and mentors (i.e., salient referents) have been studied in higher education advising and counseling research. We explored the extent to which media exposure, information technology use, and prominent public personalities have an impact major choice. We reasoned that because of the possible sway of media and communications technology on their choice of study, college students in communications majors, such journalism, advertising, public relations, telecommunications, and speech communication, would offer initial insight needed for our study. We relied on a multimethod approach for measurement development and model-testing purposes, which included focus groups, expert feedback, and a large-scale survey of communication majors at three large U.S. communication programs ($N = 2{,}401$).

Literature Review

A major in communication continues to be a popular choice with undergraduates despite job market uncertainty. In 2012–2013, the most recent year of National Center of Education Statistics (NCES) (2016) data, 84,817 bachelor's degrees in communication fields were conferred in the United States, a slight increase (1.2%) over the previous year, and a 24.9% increase over the previous 10 years. In fact, since NCES started collecting data in 1970, communication major enrollments have always shown growth. Craig and Carlone (1998) warned that these NCES data need careful interpretation because of various specialized majors within the field. For example, for the first time in history, journalism programs have experienced fewer student enrollments than in the past. Becker, Vlad, and Simpson (2014) found 3.1% fewer students enrolled in journalism undergraduate programs in 2013 than had declared it as a major in 2010, the historical enrollment high point for the field. The diffusion of Internet and communication technologies over the past two decades has dramatically disrupted media industries, and hence, their traditional career paths. However, the number of students choosing communication majors continues to grow despite ambiguous career opportunities. With regard to these majors, the prevailing concerns for academic advisors and career counselors are summed in the question: How or why do students choose communications majors?

Choice of Major

While theory and research on determinants of career and vocational choice are available (e.g.,

Adams, Brunner, & Fitch-Hauser, 2008; Bowen, 2009; Fullerton & Kendrick, 2010; Grenby, Kasinger, Patching, & Pearson, 2009), studies of factors on choice of college major are less developed (Porter & Umbach, 2006). The few studies on choice of major generally fall into three areas: relationship between personality-environment fit and choice of major; the link between demographics (e.g., race, gender) and student perceptions and beliefs about a particular major choice; and the influence of salient referents such as parents, friends, high school teachers, college professors, and academic counselors on students' decisions.

Professionals in personality research frequently apply Holland's (1997) theory of vocational choice to test the way personalities predict choice of major. Holland's theory posits that personality types (i.e., realistic, investigative, artistic, social, enterprising, and conventional) inform vocational choice. In terms of choice of major, research supports the proposition that students choose academic environments compatible to their personalities. Smart, Feldman, and Ethington (2000) found that students seek out majors compatible with their personalities, but they also concluded that other factors, such as abilities and interest, affect student desires.

Our study focuses on majors in the communications discipline. In previous studies conducted on particular disciplines, authors have applied Holland's theory (1997), but they tended to measure demographics and major perceptions as predictors of major choice. Malgwi, Howe, and Burnaby (2005) looked at students' choice of specific business majors and found that, among women, interest in and aptitude for the subject emerged as the most important factors. Men considered the potential of a business major for career advancement, job opportunities, and salary. In another study, a major in information science was related to the perception about plentiful job opportunities and the influence of family members and professors (Zhang, 2007). Student-athletes show a predilection for majors closely associated with sports, health, or medicine (Mahoney, 2011), and foreign-born students at U.S. institutions were more likely to choose STEM majors and less likely to select social science majors (Nores, 2010).

In an often-cited study, Porter and Umbach (2006) extended Holland's (1997) theory by integrating it with other significant factors such as demographics (gender and race) and political orientation. Although they found personality a significant predictor, the authors pointed to numerous other factors that must be organized on the basis of theory, such as academic ability, demographics, political orientation, personality, and family.

The persuasiveness of salient referents, such as family members, appears to be the most consistent research finding on influence of major choice. For example, Downey, McGaughey, and Roach (2009) found that the role of parents, friends, teachers, or acquaintances working in the field was a major factor for management information system majors, but not computer science majors. With a similar finding, Zhang (2007) discovered that family members and professors were significant persons in choosing information science as a career path. School and private-lesson music teachers were cited as main influences on music education majors (Rickels et al., 2010). Salient referents are conceptualized as individuals with whom a student has made personal contact. Moreover, a prerequisite for their sway over a student choosing a college major seems to be a personal relationship; however, media exposure can influence individuals, at least in limited ways. For example, television advertising can create awareness for a product; however, whether or how it induces a purchase remains unclear. Most audiences have no direct contact or personal relationships with their favorite (or most hated) personality on television or radio or featured in print or online. Can mediated people, news anchors, newspaper reporters, radio personalities, social media celebrities, bloggers, be acting as salient referents?

Media Effects

A major line of communication scholarship concerns the social, psychological, and cultural effects of media. Bryant and Oliver (2009) provided a useful review on ways media, video game, and Internet use, consumption, or exposure inspire a range of social and behavioral outcomes. A noteworthy line of research on media effects stems from the cultivation perspective, which posits that the more time one spends watching television, the more likely he or she perceives the world as a reflection of portrayals on television (Morgan, Shanahan, & Signorielli, 2009). Studies reveal that an increase in media and technology use positively predicts students' choice of journalism as a major because the field attracts people interested in television and sports careers (Hanna

& Sanders, 2007; Peters & Cantor, 1982). The researchers of these studies did not investigate the role of salient referents; however, another demonstrated a link between young peoples' exposure to docu-soaps (reality television) and changes in perceptions of the characters' careers but did not examine whether perception affects the choice of a course of study (Van den Bulck & Beullens, 2007).

A related line of media-effects research focused on the phenomena of parasocial interactions and relationships. Some TV viewers and users of interactive media develop personal relationships with fictional characters, on-air personalities, or media celebrities (Hartmann, 2016). Studies show that parasocial relationships develop in ways similar to personal relationships unmediated by television or interactive media. For example, they can both deepen with more frequent exposure and over time (Hartmann, 2016). Despite similarities in the development of mediated parasocial and unmediated relationships, the research did not generalize to other relationship processes, such as leverage on decision making. We contend that media exposure and parasocial relationships may exert influence on a student's choice of major.

Media effects have been extensively studied in pedagogy research across disciplines in the context of K-12 and higher education. These investigations tended to focus on the effects of media use on student learning. For example, Kuznekoff and Titsworth (2013) discovered a connection between high mobile phone use and lower measures of student learning. In a related finding, frequency and attention to texting and social media on smart phones was found to interfere with learning in a way that smartphone music use did not (David, Kim, Brickman, Ran, & Curtis, 2015). These recent examples contribute to a long tradition of research linking media use to positive and negative learning outcomes. However, we uncovered no study in which investigators examined technology and media relationships with the topics students choose to learn (e.g., their majors).

Research Questions

For our study presented herein, we looked at the selection of communication-related majors to investigate the possible effects of media exposure, technology use, and both mediated and unmediated salient referents. As addressed in the literature review, influence of salient referents, such as family and teachers, on choice of major has been associated with other disciplines, but not communications. Moreover, researchers have attempted to predict choice of communications majors using other factors, but not media effects. For example, Wiltse (2006) found that enjoyment of writing was a significant predictor that distinguished journalism from communication and noncommunication majors. Crawford, Fudge, Hubbard, and Filak (2013) studied news media and strategic communication majors, and they discovered differences in personality, motivations, and beliefs about the two majors that explained their program of study choices. To our knowledge, no one has examined media effects and the two types of salient referent influence—mediated and unmediated. Therefore, this study fills a gap by asking: How does media exposure, technology use, and both mediated and unmediated salient referents influence communications students' major choice? The research questions were delineated as

RQ1. What is the effect of media exposure on choice of journalism as a major?

RQ2. What is the impact of Internet and information technology on choice of journalism as a major?

RQ3. What are the effects of salient referents on journalism major choice? What are the effects of unmediated versus mediated salient referents?

Method

On the basis of the research questions, we chose a large sample-survey method to advance our study. The survey provided data measuring for the four independent variables (media exposure, technology use, and two types of salient referents) and the single dependent variable (choice of journalism as a major). Because the independent variables were continuous and the dependent variable was dichotomous and nominal, a discriminant analysis was a suitable statistical method.

A Qualtrics survey was administered during a 6-week period in 2013 at three large, U.S. public universities in the Southeast, Midwest, and Mid-Atlantic regions, respectively. We employed several procedures to develop and refine the survey instrument:

1. We conducted 4 focus groups of undergraduate communication students at two

different large U.S. universities to determine student motivations for communication degrees.
2. A committee of experts (i.e., 6 international and national researchers and 3 doctoral students) reviewed the motivations and the questionnaire.
3. A pilot of the survey was conducted with students ($N = 104$) at a southeastern U.S. university in the fall semester of 2012. The pilot was used to test the validity and reliability of survey items.

As a result of these efforts, we dropped a salient referent item after conducting exploratory factor analysis on the pilot survey; that is, the item did not load onto any clearly defined factor such as unmediated referents (parents, teachers) or mediated referents (e.g., media figures from newspapers, broadcasts, or Internet channels). The final questionnaire required approximately 12 minutes to complete. See the Appendix for a summary of the survey instrument.

The survey garnered a 33.2% response rate for the individuals invited from three U.S. mass communication programs ($N = 2{,}401$) to take part in the survey. Respondents were recruited from five communication majors offered at the three universities: advertising, journalism, public relations, telecommunications, and speech, rhetoric or organizational communication. After deleting cases for missing data (with no systematic bias detected), the sample ($N = 2{,}107$) was comprised of 75% female, and 78% White, 9% Black or African American, 6% Asian, 4% Hispanic or Latino, 2% multiracial or other, and fewer than 1% Native American, Pacific Islander, or Alaskan Native students.

Operational Definitions and Descriptive Statistics

Media exposure. Four single-item variables measured media exposure. Students were asked to recall, using a 7-point Likert-type scale (1 = *never* to 7 = *several times a day*), the frequency with which they watched, listened to, or read the news before the age of 18 years and the time they presently spend accessing news. They also responded to items on the number of hours on an average day they consume video programming and participate in online pursuits. On average, respondents reported watching 2.3 hours of video daily and spent slightly more than 5 hours online per day (Table 1). They also reported a mean of 4.4 hours on news consumption before age 18 years and 5.0 hours today, which translates to a range between once a week (4) and several times (5) a week.

Internet and technology use. A 10-item index was developed to capture variance in Internet and technology use. Different from measuring consumption of media, the index serves as a proxy for participating in and producing media. Students selected all platforms in which they had engaged in the prior month. Some items represented very common technologies, while others were less common. Examples include participated in a social network, such as Facebook; posted information on a microblog, such as Twitter, Pinterest, or Tumblr; uploaded a video to a video-sharing site, such as YouTube; edited images in an editing program, such as Photoshop; created an audio podcast or produced an audio recording using a program, such as Audacity, Pro-tools, or Garageband; and created a web site using HTML/CSS (hypertext markup language/cascading style sheets). The index ranged from 0 to 10 technologies. On average, respondents used almost 5 of the 10 listed technologies within the past month (Table 1). Of the 10 Internet and technology behaviors examined, the percentage of students who had engaged in each activity ranged from 12% (created a web site using HTML/CSS) and 96% (Facebook use).

Salient referents. On the basis of prior research and focus group findings, a series of survey items were included to examine the possible influence of personally known individuals (unmediated salient referents) and of media figures students may see, read, or hear (mediated salient referents). Participants were asked to choose on a 5-point scale the degree to which each affected choice of major (1 =←*no influence*; 5 =←*major influence*). An exploratory factor analysis with principal axis extraction and a promax rotation resulted in 2 factors along the mediated and unmediated lines: a 6-item subscale of unmediated salient referents ($\alpha = .76$) and a 5-item subscale of mediated salient referents ($\alpha =$←.86). Unmediated influences included family, friends, other students, a high school advisor or teacher, a college advisor, a college social organization, a college professor or instructor, and a job or internship supervisor or coworker. Mediated influences included media or communication professionals seen on TV news (e.g., CNN, Fox, CBS, local news), read in newspapers or magazines, or heard on the radio as well as authors of blogs or social media accounts and performers on niche programs or networks (e.g., National Geographic, Discovery Channel, Food Network, Travel Channel, ESPN).

Table 1. Descriptive statistics of variables

Variable	Mean	Scale Range	*SD*
Technology use (content creation)	4.92	0–10	1.84
Video programming consumption (hours)	2.29	0–20	1.92
Online use (hours)	5.06	0–24	2.76
News use before 18 years	4.42	1–7	1.44
Present news use	4.98	1–7	1.46

Major choice. The dependent variable was dichotomous: journalism or other communication major. The category *other communications major* contained all respondents who identified their majors as advertising; communication (speech, rhetoric, organizational communications, group communications, etc.); public relations; or telecommunications. Thirty-four percent of respondents identified as journalism majors; the others had declared other communication majors.

Results

To determine the influence of the predictor variables on choice of major, we conducted two discriminant analyses. The first demonstrated that the predictors were significantly related to an individual majoring in journalism or in another area of communications (i.e., advertising, public relations, telecommunication, or communication). Predictor variables included all four measures of media exposure (current exposure to news, exposure to news before the age of 18 years, hours of video watched per day, time spent online per day), technology use, and both types of salient referents (mediated and unmediated). A student's year in school was included as a control.

These variables combined to create a significant discriminant function: eigenvalue of .186; Wilks' lambda of 843, chi-square of 3,338.38 ($df = 8$, $p =$← .000). Table 2 reports the standardized canonical discriminant function coefficients, and Table 3 shows the structure matrix. The canonical function coefficient for the single function was .321 for nonjournalism majors and .578 for journalism majors. The classification analysis indicated that this model correctly predicted group membership 70.6% of the time.

Relating the canonical function coefficients for the journalism majors and nonmajors to the predictor variables indicated that journalism majors consume more news, consumed more news in the past, produce more media content, and were influenced to a greater degree by mediated referents. Nonjournalism majors were distinguished only by the strength of the unmediated referents.

In another analysis, we sought to determine whether the same predictors for journalism majors could differentiate among the nonjournalism majors as well. Five dependent variable categories of major were included in the analysis: journalism, advertising, public relations, telecommunication, and other communication. The predictor variables combined to create 3 of 4 significant discriminant functions (Table 4). The classification analysis indicated that this model correctly predicted group membership 42.8% of the time.

Table 5 presents the standardized canonical discriminant function coefficients and the canonical coefficient for each major by each function. We compared these coefficients with the coefficients for the predictor variables to determine the

Table 2. Standardized canonical discriminant function coefficients

Predictors	Function 1
Mediated referents	.776
Unmediated referents	.498
Technology use	.191
University year	.062
Present news consumption	.202
Video programming consumption	.060
Online use	.075

Table 3. Structure matrix

Predictors	Function 1
Present news use	.663
Mediated referents	.660
Past news consumption	.550
Technology use	.306
Video programming consumption	.111
University year	.088
Unmediated referents	.039
Online use	.011

Table 4. Eigenvalues and Wilks' lambda for second analysis

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.201	77.4	77.4	.409**
2	.046	17.6	95.0	.209**
3	.010	3.8	98.8	.098*
4	.003	1.2	100.0	.056

Note. Functions 1–4: Wilks' lambda: .786; chi square: 476.924, $df = 32$. Functions 2–4: Wilks' lambda: .944; chi square: 114.054, $df = 21$. Functions 3–4: Wilks' lambda: .987; chi square: 25.514, $df = 12$. Function 4: Wilks' lambda: .997; chi square: 6.294, $df = 5$.
$p < .001$**. $p < .01$*.

variables that best discriminate among major. As in the first analysis, we found that majoring in journalism was related to amount of news consumed, amount of news consumed before age 18 years, and mediated referents. Not surprisingly, these journalism-related predictors were negatively related to the four nonjournalism majors. The second function, which had the strongest weighting from the number of video hours watched per day, was positively related to majoring in telecommunications and negatively related to majoring in public relations. The third function was strongly related to only one predictor, with a negative relationship to the Internet and technology use index, and it was not strongly related to any major; however, it had the strongest relationship with majoring in advertising. The negative coefficient indicates a positive relationship between technology use (e.g., producing media content) and majoring in advertising. Similar to advertising, it had a relationship to telecommunication. The positive coefficient indicates a negative relationship between one of the technology-use measures, producing media content (not shown), and majoring in telecommunication.

The design of the quantitative analysis technique restricts the ability to make causal claims. For example, the direction of causality between news consumption and choosing journalism remains unclear. Although journalism majors consume more news at present, the data neither discern the degree to which this behavior is associated with the decision to major in journalism nor indicate whether the intake of news resulted from class assignments. The measure of news consumption before age 18 years was included to tap interest in journalism before starting college, but reliance on behavioral self-reports is associated with other types of limits on interpretation. Despite the limitations, this study supports the proposition that media consumption relates to the choice of journalism as a college major.

Table 5. Canonical correlations for second analysis

Factor	Function			
Predictors	1	2	3	4
Mediated referents	.775	.222	.177	.167
Unmediated referents	.482	.326	.047	.208
Technology use	.135	.291	–.797	.320
University year	.081	.577	.293	.047
Previous news use	.149	.370	.427	.461
Present news use	.503	.616	.458	.377
Video programming consumption	.040	.567	.277	.045
Online use	.054	.027	.106	.801
Major Choice				
Journalism	.580	.031	.028	.008
Advertising	.469	.006	.162	.039
Public relations	.180	.313	.090	.003
Telecommunications	.254	.363	.131	.051
Other communication major	.570	.185	.005	.194

Discussion

Do media exposure, technology use, and both types of salient referents influence choice of college major? With respect to RQ1, the extent to which media exposure influences choice of major, the findings suggest that greater exposure to news before and after age 18 years was related to majoring in journalism and not related to other communication majors. However, on the cultivation-like effects of video exposure and time spent online, the results were mixed. In regard to RQ2, the use of technology for content participation and creation appeared as a factor for students choosing journalism. Finally, RQ3, which addressed the role of salient unmediated or mediated referents showed that mediated referents such as news anchors and journalists seen on television, were related to choice of journalism, but there was a negative relationship with choices of other communication majors. Conversely, unmediated referents such as parents, teachers, and job supervisors, influenced all communication majors except those who chose journalism.

Of all the findings, the most meaningful result demonstrates that majoring in journalism can be predicted by news consumption habits and mediated referents. The analysis was less successful at predicting communication major selection other than journalism, most likely because the predictor variables we utilized in this study focused primarily on factors that were expected to sway journalism students in their major selection.

In a surprising result, the relationship between mediated referents and choice of journalism was strong compared to that of other communication majors. Perhaps students who follow media personalities—writers, anchors, television and radio news reporters, bloggers, and especially niche media professionals—are more influenced to major in journalism than by any other factor, including parents. Perhaps journalism majors are predisposed to receive less support from sources of authority, such as teachers and parents. An interesting follow-up study might expose the extent that journalism students perceive support from authority figures on the basis that journalism majors rely on mediated sources for career and life guidance. Perhaps students who pursue other communication majors received more feedback from parents, friends, and teachers informing them of the challenges of placement in newspaper and television careers. In addition, the findings suggest that journalism majors use technology to produce media content to a greater extent than other communication majors. Thus, journalism majors may envision their selected career as a venue for creative expression.

Conclusions and Implications

Through this study, we sought to determine the effects of media, information technology, and salient referents (people who influence students) on choice of major. In addition to answers to the research questions, the work offers two contributions to the literature base. First, until this study, salient referents meant only individuals known personally to a student (i.e., unmediated). This study brings another dimension to the salient referent construct: mediated referents. Unlike past publications, this study suggests that students may be swayed by persons who they do not personally know in their choice of major. Perhaps some students are equally or more influenced by parasocial relationships with media figures, which we labeled as *mediated salient referents* in this study. In fact, our research suggests that unmediated salient referents had little impact on journalism as a career choice, which counters the research demonstrating salient referents as reliable predictors. In a second contribution, this is the first research study to bridge the previously unexplored intersection of choice of major and media exposure or information technology use. We are unaware of any other study making the connection between these behaviors to majors.

The implications for journalism and other communication majors include opportunities for interesting follow-up studies. Future researchers might investigate whether negative relationships with unmediated salient referents predict major choice. Prospective students who do not get support from within their social circle may look to mediated channels for guidance and inspiration. However, active participation with and consumption of media channels do not translate to job security because consumption does not necessarily translate to literacy. Therefore, future research on the relationships of literacy levels to major choice might yield interesting results valuable to advisors.

The findings suggest that the curriculum should be updated to gain relevance with students living digital lives. Data from our survey indicated that most journalism students participate in online programming and with others through social media; they reported using more than one half the technologies listed. However, other communication majors may need instruction and encouragement in developing digital media skills.

For advisors, the results suggest some simple strategies. First, advisors might encourage students to explain the elements of news and entertainment media that sparked their career interests. They may recommend the ubiquitous number of sources in video, print, and social media to explore.

Second, with an understanding that unmediated sources may influence journalism majors, advisors might query the extent that persons of authority or in the media drive the decisions. By gauging the way students developed perceptions of their ideal career path, advisors learn more about the advisee and gain insight that may lead to greater understanding of students pursuing the field. For example, advisors may ascertain the extent that creative expression inspired a career selection and hence identify appropriate careers, in addition to journalism, that the student might want to explore.

Advising administrators, especially those in a college of communication or media studies, may want to use a variant of our survey to learn more about the students seeking a communication degree. Administrators in other departments can modify our survey instrument to better fit specifics of the disciplines in their units.

Finally, we encourage internship supervisors, prospective employers, and public policy makers that the media influences students in a way not recognized before: choice of major. If communication majors are being influenced by media exposure and information technology use, are students in other disciplines also pursuing degrees on the basis of unmediated sources in the media? We are aware of an institution that added a forensic science major in response to demand from fans of the many crime-scene investigation television programs; anecdotes suggest that many students abandon the major once they learn that real forensic science is not nearly as glamorous or fast paced as it on television shows. This situation contributes to the argument that future research should be directed on the way media affects choice of different majors, including journalism.

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Appendix. Summary of survey instrument

1. To what extent did these program types or people affect your choice of major (Likert scale)?
   - My family (1)
   - My friends (2)
   - Other students (3)
   - A high school adviser or teacher (4)
   - A college adviser (5)
   - A college social organization (i.e., fraternity, sorority) (6)
   - A college professor or instructor (7)
   - A job or internship supervisor or co-worker (8)
   - Media or communication professionals I've seen on TV news (i.e., CNN, Fox, CBS, local news) (9)
   - Media or communication professionals I've read in newspapers or magazines (10)
   - Media or communication professionals I've heard on the radio (11)
   - Media or communication professionals whose blogs or social media I follow (12)
   - Media or communication professionals I know personally (13)
   - Media or communication professionals featured on niche programs or networks (e.g., National Geographic, Discovery Channel, Food Network, Travel Channel, ESPN, etc.) (14)
2. How often did you watch, listen to or read the news before the age of 18?
   - Never (1)
   - Less than once a month (2)
   - A few times a month (3)
   - At least once a week (4)
   - Several times a week (5)
   - At least once a day (6)
   - Several times a day (7)
3. How often do you presently watch, listen to or read the news?
   - Never (1)
   - Less than once a month (2)
   - A few times a month (3)
   - At least once a week (4)
   - Several times a week (5)
   - At least once a day (6)
   - Several times a day (7)
4. How many hours of video programming do you watch on average day?
5. How many hours do you spend online on an average day?
6. In the past month, have you done the following while using the Internet? (CHECK AS MANY AS APPLY):
   - Participated in an online forum on a specific niche topic (1),
   - Wrote in an online diary or blog (2)
   - Participated on a social networking site such as Facebook (3)
   - Posted information on a microblog such as Twitter, Pinterest, or Tumblr (4)
   - Uploaded a video to a video-sharing site such as YouTube (5)
   - Uploaded a photo to a photo-sharing site such as Facebook or Flickr (6)
   - Created a website using HTML/CSS (7)
   - Edited images in an image editing programs such as Photoshop (8)
   - Edited video in a video editing program such as iMovie or Final Cut (9)
   - Created an audio podcast or produced an audio recording using a program such as Audacity, Protools or Garageband (10)