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More than Writing and Reporting: Examining the Overall Media Literacy of Today's Journalism Students

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The highly visible decline of print-based journalism in recent years is increasingly being matched by the dramatic growth of digital news operations and the establishment of new Web-based journalism enterprises. Aided by social media and mobile technologies, these developments are making news content omnipresent in the modern world. Yet, while this shift from traditional models of reporting and storytelling to new digital platforms is helping to keep journalism relevant in the 21st century, it has also created a new set of challenges for today's journalists, who are increasingly expected to possess a diverse mix of skills ranging from writing and reporting to multimedia production. Many journalism education programs have adapted to the changing field by introducing coursework associated with a variety of media literacy competencies. However such training is not universal. To investigate the extent to which journalism students are developing the overall media literacy competencies that are increasingly important, this study involved a survey of journalism students (N = 312) and an analysis of multimedia content on student newspaper Web sites (N = 128). Data indicate that many journalism students are developing only limited media literacy competencies, and that additional training, especially related to the creation of digital media, could be beneficial.

Adapting to the modern digital media landscape has not been easy for the field of journalism and the nearly 100,000 people employed by a news organization in the United States (Cohen, 2001; Doctor, 2010). Between 1991 and 2012, daily TV news viewership dropped from 68% to 55%, daily newspaper readership slipped from 56% to 29%, and daily radio news listening declined from 54% to 33%. Such declines have been especially dramatic among the younger population; just 13% of Americans under 30 read a newspaper either in print or digitally, and only 34% watch news on TV (Pew Research Center, 2012).

The audience fragmentation caused by new digital media options have led to significant financial pressures, and during the first decade of the 21st century, nearly 14,000 newspaper journalists—about 25% of the workforce—lost their jobs (Knight Commission, 2009; Pew Research Center, 2009). Those who have survived the painful cutbacks face an industry that is transformed (Adams, 2008; Greenwald, 2004;

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Henry, 1999) and that has gone digital. The increasing importance of new technologies and techniques in the "new ecology of journalism" (Knight Commission, 2009, p. 26) means that there is an ever evolving set of skills that journalists need to possess. The job of the modern journalist has changed; today's journalists are expected to do it all, ranging from researching a story to producing multimedia content (Kawamoto, 2003).

The changing expectations for journalists have led to an increased need for mid-career media training (Niles, 2010), and changes in the curriculum of college-level journalism programs. Not surprisingly, the Accrediting Council on Education in Journalism and Mass Communication (ACEJMC, 2012, 2013) now requires its 108 accredited programs to offer "demanding and current" instruction regarding "professional expectations of digital, technological and multimedia competencies."

This recognition stretches beyond the borders of the United States (Hans-Henrick, 2002). The United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2007) has outlined a model for media education in journalism programs, and the World Journalism Education Congress (2007) has stressed the need for media standards in journalism education. Indeed, specific media skills related to multimedia production and Web publishing are necessary for today's journalists and are important to address in journalism schools (Melki, 2009). Yet, teaching and learning how to use technology is not enough. Broader competencies also are necessary in order to contextualize these skills. It is in this regard that a media literacy perspective can be useful for journalism education.

Media Literacy for Journalism Students

As highlighted by Nichole Pinkard (2013), founder of the Digital Youth Network, "literacy has always been defined by the technology" (para. 1). While print-based technologies dominated the media landscape for the past half-millennium and resulted in a definition of literacy focused on alphabetic competencies, today's interactive and multimedia technologies mean that a broader definition of literacy is needed. Accordingly, multiple literacies have been identified (Brown, 1998; Mackey, 2002; New London Group, 1996) including media literacy.

Many different perspectives on the specifics of media literacy exist (Fedorov, 2003; Potter, 2010), but the central tenants are clearly articulated in the definition adopted by the National Association for Media Literacy Education (2007, 2011) as well as UNESCO (Silver, 2009). This definition states that media literacy involves a set of competencies associated with accessing, analyzing, evaluating, and communicating messages. Accessing media involves finding and selecting appropriate media to meet specific goals (Wulff, 1997; see also Koltay, 2011). Skills associated with media access range from basic competencies that are necessary for media use on a daily basis (Hobbs, 2011) to more advanced competencies that involve searching for quality data, information, or media for use when writing or creating a multimedia product. Analyzing and evaluating media can draw on a broad and sometimes overlapping mix of critical approaches (Kamerer, 2013) and involves the ability to deconstruct media and identify media context (Lewis & Jhally, 1998), author, target audience, purpose, point of view, and production techniques (Hobbs, 2004, 2011). Communicating mediated messages involves creating and sharing original media (Ascher & Pincus, 1984; Hobbs, 2004; Lund, 1998). Learning and applying media creation techniques leads to a greater awareness of the constructed nature of media and a more intuitive understanding of how professional media are similarly designed and manipulated (Kamerer, 2013).

Focusing on this broad set of competencies leads to much "more than just the development of certain skills" (Christ & Potter, 1998, p. 8). Instead, the mix of competencies associated with

media literacy can empower individuals with a greater understanding of the modern mediated world (Jeong, Cho, & Hwang, 2012), and with the ability to both communicate effectively across multiple convergent media (Jenkins, 2006) and become civically and politically engaged (Ashley, Maksl, & Craft, 2013; Hobbs, 2010; Lewis & Jhally, 1998; Masterman, 1997; Melki, 2009; Mihailidis, 2011; Salzburg Academy, 2008; United Nations Alliance of Civilizations, 2008).

While such media literacy competencies are clearly important for the public in general, the development of a broad, theoretical understanding of media and society—in tandem with practical media production skills—is especially important for journalism students (Mihailidis, 2006). Developing media literacy competencies can help journalism students to be fully aware of the implications of the constructed nature of journalism related to framing, gatekeeping, and agenda setting (Ashley, Maksl, & Craft, 2013), as well as the financial environment in which reporters operate (Bagdikian, 2004; Herman & Chomsky, 2002; Mihailidis & Hiebert, 2005).

Not surprisingly, some programs have been developed that strive to integrate broad media literacy objectives into a well-rounded journalism curriculum both in the United States and internationally (Mihailidis, 2009). Yet, despite the efforts of such innovative educators and institutions, and even though it might "seem obvious" (Mihailidis, 2006, p. 418) that media literacy should be integrated into journalism training, there is no evidence to suggest that well-rounded media literacy competencies are being developed by most journalism students across the country. While ACEJMC-accredited programs require at least some multimedia instruction, more than 300 other programs in the United States are not accredited (American Society of Newspaper Editors, 2012) and have a variety of curricular standards. Nor is there reason to believe journalism students are learning such competencies in other classes or as part of general education requirements.

Admittedly, some colleges and universities have added classes and, in a few instances, programs that address media literacy (Mihailidis, 2008; Schmidt, 2014). Similarly, some individual educators from a variety of disciplinary backgrounds have taken the initiative to integrate media literacy lessons into their classes, or teach media literacy as a "hobby subject" (Hobbs, 2007, p. 4). Yet, exposure to such instruction remains more the exception than the rule at most post-secondary institutions, and research shows that media literacy courses are rare at the university level (Mihailidis, 2006; Silverblatt et al., 2002; Stuhlman & Silverblatt, 2007; Wulff, 1997), and that media literacy skills are generally lacking among university students in general (Schmidt, 2013a; Schmidt, 2013b). Accordingly, while there is reason to believe that media literacy is important for journalists, the media literacy educational experience of journalism students is unclear.

Research Focus

This study is designed to investigate the extent to which today's journalism students possess and are learning about competencies associated with the different dimensions of media literacy. Accordingly, two research questions are posed.

RQ1. To what extent do journalism students perceive that they have learned about and developed media literacy competencies?

RQ2. To what extent do journalism students demonstrate that they possess media literacy competencies?

Method

This study involved a survey of student newspaper staff members, as well as a content analysis of student newspaper Web sites.

Sample

In order to conduct both the survey and the content analysis, 641 college and university student newspapers with Web sites were identified by combining the membership list of the Associated College Press with other online directories. For the content analysis, a random sample was constructed by selecting every fifth newspaper Web site (N = 128). To improve consistency and ensure that all Web sites were analyzed during the same period, each newspaper Web site was saved to a disk using Inspyder's Web2Disk (version 4) software program during a three-day period. The saved Web sites were then viewed and analyzed in detail later.

For the survey, the email addresses of potential participants were obtained from the published staff directories of all 641 student newspapers, and email invitations to complete the questionnaire were sent to a random sample of 1,961 individuals. Responses were received from 331 participants, yet 19 were discarded because of excessive missing values. This left responses from 312 participants, indicating a response rate of 15.9%.

Measure

The questionnaire consisted of 70 items. To address the first research question, participants were asked to self-report their perceived media literacy competencies and the extent to which they felt their classes had prepared them to engage in activities associated with media literacy on a Likert-style scale ranging from strongly disagree (1) to strongly agree (7). Participants also were asked to report the extent to which they engage in activities associated with media literacy on a Likert-style scale ranging from never (1) to very frequently (7). To partially address the second research question, participants were asked to complete the news media literacy scale developed by Ashley, Maksl, and Craft (2013).

The questionnaire was tested in a trial study. Participants in the trial study were recruited from five universities that were excluded from the sample used in the study. During the trial study (N = 38), analysis using the Cronbach's alpha test indicated that there was good internal consistency with an alpha coefficient above .70 for all categories of items. During the study, analysis again indicated that there was good internal consistency for the perceived competencies category (α = .812), perceived involvement category (α = .904), perceived preparation category (α = .950), and news media literacy scale (α = .825).

A content analysis was used to further address the second research question and measure the demonstrated media literacy competencies of journalism students. First, Web sites were analyzed to determine if they were based on original student designs or templates provided by professional Web-hosting or content management companies. Next, each site was analyzed using an adapted form of a coding sheet developed by Zamith (2008) that measured key elements of dynamic Web design: hypertextuality, multimediarity, and interactivity (Alves & Weiss, 2004; Downes & McMillan, 2000; Schultz, 1999; Ward, 2002). Hypertextuality and interactivity are associated with the media access dimension of media literacy. Hypertextuality involves the extent to which articles include links to external Web pages, media content, original source material, or other current or archived articles. Interactivity involves the extent to which readers or visitors to the Web site have the option to provide comments, email the author or editors, contribute to a discussion forum, or otherwise interact with members of the public and staff. Multimediarity is associated with the mediated message communication dimension of media literacy and involves the extent to which Web sites include multimedia content such as images, text, audio, video, and animation.

Finally, the extent to which hypertext, multimedia, and interactive content was integrated into the overall Web site was rated on a

Likert-style scale ranging from no integration (1) to highly integrated (4).

Results

Perceived Media Literacy Competencies

Regarding the first research question, student participants reported perceptions related to each dimension of media literacy.

Accessing media.

Students reported feeling that their classes had prepared them for a mix of activities associated with media access (M = 5.45, SD = 1.41), that they were competent accessing media (M = 6.39, SD = .77), and that they were regularly involved in a mix of activities associated with media access (M = 5.61 SD = 1.81).

Data did not indicate that students perceived learning more about media access as they moved through their postsecondary education, and a one-way between-groups analysis of variance (ANOVA) indicated no differences in perceptions of media access preparation related to academic year at the $p < .05$ level: $F(3, 262) = 1.016$, $p = .386$.

Communicating mediated messages.

Data were mixed regarding student perceptions related to mediated message communication. Students reported perceiving that their classes had prepared them to engage in a mix of activities associated with creating print-based media, such as editing text (M = 5.40, SD = 1.65) and designing print layouts (M = 4.49, SD = 1.90). Yet, students reported feeling that their classes had done less to prepare them to engage in a mix of activities associated with creating digital media, such as editing video (M = 4.09, SD = 1.94) and designing original Web pages (M = 3.88, SD = 1.93). Additionally, while students reported feeling they were competent creating (M = 6.29, SD = .98) and sharing (M = 6.29, SD = .90) media overall, they reported engaging in activities associated with creating traditional print-based media, such as editing text (M = 5.60, SD = 2.07) and designing print layout (M = 4.61, SD = 2.56), much more than activities associated with creating digital media, such as editing video (M = 2.50, SD = 1.86) and designing original Web pages (M = 2.99, SD = 2.26).

Paired samples t-tests confirmed that the difference between the extent to which students perceived feeling prepared to participate in activities associated with creating traditional print-based media (M = 4.82, SD = 1.42) and activities associated with creating digital media (M = 4.32, SD = 1.60; $t(307) = 5.589$, $p < .001$, two-tailed) was significant, and that the difference between overall student involvement in activities associated with creating traditional print-based media (M = 4.61, SD = 1.70) and activities associated with creating digital media (M = 3.17, SD = 1.59; $t(310) = 11.399$, $p < .001$, two-tailed) was significant.

Data also suggest that students are not progressively developing stronger multimedia creation competencies as they move through their academic careers. ANOVA revealed no significant differences in perceived media creation preparation related to academic year at the $p < .05$ level, $F(3, 308) = 1.443$, $p = .231$.

Analyzing and evaluating media.

Student participants reported perceiving that their classes had prepared them for a mix of activities associated with media analysis and evaluation (M = 5.40, SD = 1.24), that they were competent analyzing and evaluating media (M = 6.23, SD = .94), and that they were regularly involved in a mix of activities associated with media analysis and evaluation (M = 5.64, SD = 1.56).

Again, ANOVA suggested that students do not learn more about media analysis and evaluation as they move through their classes, and revealed no significant differences regarding perceived analytical preparation related to academic year at the $p < .05$ level: $F(3, 262) = .934$, $p = .425$.

Demonstrated Media Literacy Competencies

Regarding the second research question, data were gathered regarding the extent to which students demonstrate that they possess competencies associated with each dimension of media literacy.

Accessing media.

To address student competencies associated with the media access dimension of media literacy, the hypertextuality and interactivity of Web sites was analyzed. Content analysis data indicate that the hypertextuality and interactivity of student Web sites was limited, and that students had limited involvement in activities that involved the application of competencies associated with media access.

Overall, just 51.6% (n = 66) of all student newspaper Web sites in the sample contained any hypertext links, and many types of content were only rarely linked to by newspaper Web sites (Table 1). The limited use of hyperlinks was common among both template-based Web sites and non-template Web sites; chi-square tests showed that other news articles were the only type of content that template-based Web sites linked to significantly more often than non-template Web sites (Table 2). Similarly, an independent samples t-test showed no significant difference in overall hypertext content integration between template-based Web sites (M = 1.16, SD = 1.04) and original non-template Web sites (M = .80, SD = .98; $t(126)$ = -1.975, p = .050, two-tailed).

The interacativity of Web sites is also associated with media access. While 98.4% (n = 126) of all Web sites included at least some type of email or social networking feature, many specific interactive features were only occasionally included in newspaper Web sites (Table 3). Further, several interactive elements were much more common on template-based Web sites; chi-square tests showed that template-based Web sites were significantly more likely than non-template Web sites to include an email newsletter, a discussion forum, a mobile app, the ability to share a story by email, and the ability to share a story by social media (Table 2). Further, an independent samples t-test showed that template-based Web sites (M = 5.86, SD = 2.37) had significantly better overall interactive content integration than non-template Web sites (M = 3.92, SD = 2.21; $t(126)$ = -4.775, p < .001, two-tailed).

Communicating Mediated Messages

To address student competencies associated with the media communication dimension of media literacy, the multimediarity of Web sites was analyzed. Content analysis data indicate that the multimediarity of student Web sites was limited, and that students had limited involvement in activities that involved the application of competencies associated with mediated communication.

Table 1
Hypertextuality of Student Newspaper Web Sites

Hyperlinked Content	Non-template Web Site		Template Web Site		All Newspapers	
	%	*n*	%	*n*	%	*n*
Related Article	39.4	28	52.6	30	45.3	58
Archives	0.0	0	1.7	1	0.8	1
Original Source	0.0	0	0.0	0	0.0	0
Chronology	0.0	0	0.0	0	0.8	1
Video	7.0	5	8.7	5	7.8	10
Infographic	0.0	0	0.0	0	0.0	0
Other News	30.9	22	52.6	30	40.6	52
Slideshow	2.8	2	0.0	0	1.6	2

Table 2
Differences in Dynamic Content between Template and Non-template Web Sites

Category of Web Site Element	Web Site Element	Non-Template Web Site		Template Web Site		χ^2	*p*	phi
		n	%	*n*	%			
Hypertext	Link to Other News Article	22	30.99	30	52.63	6.141	0.013	0.219
Multimediarity	Images	62	87.32	56	98.20	5.236	0.022	0.202
	Slideshow	21	29.57	27	47.36	4.270	0.039	0.183
Interactivity	Email Newsletter	11	15.49	27	47.37	21.972	< 0.001	0.347
	Share by Email	24	33.80	43	75.44	15.390	< 0.001	0.414
	Share by Social Media	38	53.52	44	77.19	9.507	0.002	0.414
	Discussion Forum	43	60.56	49	85.96	10.092	0.001	0.281
	Mobile App	2	2.82	9	15.79	6.774	0.009	0.230
Immediacy	Potential to Update	36	50.70	49	85.96	17.621	< 0.001	0.371
	Article had been Updated	5	7.04	36	63.16	45.731	< 0.001	0.598
	Date and Time Identified	19	26.76	41	71.93	25.904	< 0.001	0.450

Note: Only elements for which there were a significant difference at the $p < .05$ level were included on this table.

Table 3
Interactivity of Student Newspaper Web Sites

Interactive Content	Non-template Web Site		Template Web Site		All Newspapers	
	%	*n*	%	*n*	%	*n*
Email Contact	92.9	66	94.7	54	93.7	120
Facebook	69.0	49	77.1	44	72.6	93
Twitter	57.5	41	68.4	39	62.5	80
LinkedIn	1.4	1	1.7	1	1.5	2
Google+	1.4	1	1.7	1	1.5	2
YouTube	16.9	12	28.0	16	21.8	28
Other Social Network	11.2	8	12.2	7	11.7	15
Flickr	1.4	1	5.2	3	3.1	4
Tumblr	4.2	3	1.7	1	3.1	4
Email Newsletter	15.4	11	47.3	27	29.6	38
RSS Feed	38.0	27	47.3	27	42.1	54
Share by Email	33.8	24	75.4	43	52.3	67
Share by Social Media	53.5	38	77.1	44	64.0	82
Poll / Survey	14.0	10	15.7	9	14.8	19
Online Forum	60.5	43	85.9	49	71.8	92
Chat Room	0.0	0	0.0	0	0.0	0
Online Letters to Editor	1.4	1	5.2	3	3.1	4
Blog / Wiki for Users	8.4	6	10.5	6	9.3	12
Email Updates	0.0	0	5.2	3	2.3	3
Mobile Updates	0.0	0	1.7	1	1.5	2
Smartphone App	2.8	2	15.7	9	8.5	11

Table 4
Multimediarity of Student Newspaper Web Sites

Multimedia Content	Non-template Web Site		Template Web Site		All Newspapers	
	%	*n*	%	*n*	%	*n*
Images	87.3	62	98.2	56	92.2	118
Slideshow	29.5	21	47.3	27	37.5	48
Infographic	1.4	1	0.0	0	0.8	1
Audio	5.6	4	1.7	1	3.9	5
Video	42.2	30	56.1	32	48.4	62

While images were quite common, and were present in 92.2% (n = 118) of all student newspaper Web sites, most other multimedia content was included much less frequently (Table 4). Multimedia content was especially lacking on Web sites that were not based on templates. Chi-square tests revealed that template-based Web sites were significantly more likely than non-template Web sites to include images and slideshows (Table 2), and an independent samples t-test showed that template-based Web sites (M = 2.04, SD = .86) had significantly better overall multimedia content integration than non-template Web sites (M = 1.66, SD = 1.01; $t(126) = -2.207$, $p = .029$, two-tailed).

Analyzing and evaluating media.
The news media literacy scale was used to measure student competencies associated with analyzing and evaluating media. Data indicated that students possessed limited media analysis and evaluation competencies (M = 5.75, SD = .64). Participants scored highest on items involving truth in journalism (M = 6.69, SD = .74) and news influence (M = 6.40, SD = .85), but lowest on items involving perceived drama in news coverage (M = 4.40, SD = 1.51), and audience perception of news (M = 4.82, SD = 1.53) (Table 5).

Discussion

Regarding the first research question, journalism students reported perceiving that they possessed strong competencies, were frequently involved with, and had learned about the media access and analysis dimensions of media literacy. However, perceptions were mixed regarding mediated message communication. Students reported that they possessed strong competencies, were frequently involved with, and had learned about traditional print-based media creation activities. Yet, students reported weaker competencies, infrequent involvement with, and minimal classroom instruction regarding new digital media.

Regarding the second research question, results of the news media literacy scale indicated that students possess limited media analysis and evaluation competencies. Additionally, content analysis data show that dynamic Web content was very limited on many student newspaper Web sites. The limited nature of dynamic Web content was particularly apparent on original Web sites, which had inferior design and less integration of hypertext, multimedia, and interactive content than Web sites based on pre-designed templates. Because adding dynamic content to original Web sites is more difficult and requires more skill than adding such content to template-based Web sites, this finding further indicates that students possess only limited mediated message communication and access competencies.

These findings suggest that students may overestimate their abilities associated with media access and analysis but are accurately accessing

Table 5
Ashley, Maksl, and Craft News Media Literacy Scale

Item Topic	Responses	
	M	*SD*
Ownership	5.31	1.57
Audience-Driven Story Selection	5.62	1.25
Ability to Self-Select News Media Based on Beliefs	5.84	1.30
Attention to Stories that Confirm Personal Beliefs	5.98	1.08
Different Ways of Perceiving a News Story	6.27	0.97
News Influence	6.40	0.85
Influence of Political Reporting	5.92	1.10
News Stories Designed to Attract Attention	5.75	1.27
Production Techniques Used to Gain Audience Attention	4.82	1.53
Production Techniques Used to Influence Audience	5.64	1.27
Framing of Photographs Influences Importance	5.86	1.05
News Stories Add Drama	4.40	1.51
Photogenic Stories Affect Prominence of Coverage	5.77	1.09
Conflict Stories Affect Prominence of Coverage	6.02	0.93
Truth in Journalism	6.69	0.74
Average	5.75	0.64

the limited nature of their own competencies associated with communicating digital and multimedia messages. Accordingly, many journalism students would likely benefit both from additional media literacy-related instruction, as well as from an increased emphasis on applying media competencies in a practical setting. Because competencies associated with creating digital and multimedia content are increasingly important for journalists but are also still underdeveloped in journalism students, these should be given a special emphasis in the classroom. All who are involved in the educational process can play a role in achieving this goal.

Students can work together on more collaborative reporting assignments. When students with traditional reporting skills partner with other students with media production skills, both can learn from each other and create collaborative multimedia news packages.

Newspaper advisors can encourage the development of original student newspaper Web sites, and the creation of more multimedia content. While shifting away from professionally designed templates and content management systems may initially reduce the visual appeal of the newspaper Web site, doing so will provide students the opportunity to develop important Web design skills. Simply uploading text into a template that will automatically format the content does little to encourage students to learn about publishing for the Web. Because hands-on, experiential learning is a central purpose of student newspapers, having such quality experiences are much more important than having polished, but not original, Web sites that foster very minimal learning.

Educators can integrate audio and video reporting into basic newswriting classes. While basic classes might remain primarily focused on text-based skills associated with writing and editing, it is necessary to begin to introduce students to different methods of storytelling early in their educational careers. If students begin to learn about multimedia reporting early, it will be easier for them to integrate these competencies into their reporting later as well.

Journalism departments and programs can build partnerships with information technology education programs. Higher education has long been accused of operating in silos in which different disciplines lack the flexibility or motivation to communicate with each other. However, the rapidly changing nature of media—and the need for journalists to possess technology-related skills—means that it will be increasingly necessary for educators to develop stronger partnerships with information technology departments and draw on the expertise of individuals outside the field of journalism to help the next generation of students learn more about the technologies that more senior journalism instructors may lack experience with.

Academic and professional organizations can develop more explicit standards for media literacy instruction in journalism programs. Clearly, curriculum decisions are made at the university, college, and department levels by faculty members and administrators who understand the unique needs of their academic program and students. However, some guidelines already exist, and programs accredited by the ACEJMC are required to subscribe to a set of best practices. Yet, these guidelines requiring "demanding and current" instruction are very broad (ACEJMC, 2012). While such open-ended guidelines can offer flexibility in an ever-changing media environment, they can also leave room for confusion regarding what current professional expectations entail. Many educators would likely benefit from having regularly updated and clearly articulated standards that explain what specific technologies and competencies are most important to address.

Limitations

Combining both questionnaire and content analysis data made it possible to gain a well-rounded perspective regarding the extent to which journalism students are learning about and engaging

in media creation activities. Yet, there were some limitations associated with this design. First, this study involved analyzing the content posted on student newspaper Web sites, but did not measure content posted to social networking Web sites also maintained by the newspaper, including Facebook and Twitter pages. Accordingly, the rate of social media integration may have been greater than was measured in this study. Second, the questionnaire was distributed to a sample of students who work at student newspapers, yet other journalism students who were not currently working at their student newspaper were not included in this sample. Accordingly, this sample may have overrepresented the most engaged students on campus, and caused inflated ratings of student competencies.

Directions for Future Research

This study demonstrates the usefulness of scales designed to directly measure competencies associated with the different dimensions of media literacy. An existing scale addresses news media literacy (Ashley, Maksl, & Craft, 2013), and other scales (Arke & Primack, 2009; Duran et al., 2008) also have been developed to directly measure media analysis competencies in different educational contexts. Further, existing measures allow for analyzing competencies associated with mediated message communication and media access when conducting a content analysis (Schultz, 1999; Zamith, 2008). Yet, no measurement scale has been designed to directly measure all dimensions of media literacy together comprehensively. Accordingly, this suggests the need for new media literacy measures designed for students in higher education. The development of such new scales that address all dimensions of media literacy together will allow for more efficient and precise research, and enable better comparison between different studies.

Conclusion

Journalism education has started to adjust to the changing nature of the profession and the modern media landscape, and some journalism students, especially at leading journalism schools and programs, have the opportunity to develop important new media production competencies. However, significant gaps in this training remain, and many journalism students still are comfortable only with the most traditional skills associated with print-based reporting. Accordingly, there is a continuing need to expand the best practices of journalism education and encourage the expansion of digital media training for journalism students everywhere.

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