PERCEPTIONS, PRACTICES, AND GUIDING PRINCIPLES OF PRE-SERVICE TEACHERS IN THE QUEST FOR NEWS AND INFORMATION ACROSS INFORMAL MEDIA

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Abstract: The means to access and produce news through social/informal media is ubiquitous. Factors such as the abundance of information coupled with heavy reliance of information and news browsers on the Internet raise dilemmas of trust and credibility. Additionally, the news ecology of today is characterized by rapid news dissemination and subsequent opinion sharing about news stories; hence, finding the true piece of information may be a tedious endeavor. Today more than ever before, the 21st century citizen needs news and information literacy skills to collect, analyze, and synthesize credible information in order to exercise good citizenry. This survey study targeted 124 preservice teachers from a mid-southwest university in Texas, USA, to explore the defining traits of their online news media literacy knowledge and experiences while questing for information. Results revealed a lack of knowledge about news media and information literacy. A disconnect between preservice teachers' beliefs and practices was discerned, especially amid what we refer to as the influencing powers of media and news consumption. Additionally, exploration of responses to survey items revealed three underlying themes of perceptions, practices, and guiding principles which inform the individual's personal media ecology.
Keywords: preservice teachers, news media literacy skills, social media, personal media ecology

Introduction

The rapidly changing media landscape has made access to means of production and communication immediate, virtually at one's fingertips. Social media users are estimated to reach 2.67 billion by 2018 (Statista, 2017). We are likely witnessing a point in human history where people hunger for information more than ever before and encounter information more than needed. Information overload! Postman (2008) commented, "We have transformed information into a form of garbage and ourselves into garbage collectors" (p. 76). In this age of informal/social media (Facebook, YouTube, Instagram, Snapchat, Twitter, etc.), our understanding and critical thinking skills are contingent upon how far we understand how various informal media platforms work. Schmidt et al., (2017) analyzed news attitudes of 376 million Facebook users over 6 years and found that users are selective and restrictive in consuming the news as a result of their preferences. Online news is attractive for its accessibility and aesthetics. According to Bohn and Short (2009) the average American spends roughly 11.8 hours a day questing for information with 11.2 hours spent on digital media. Today, to be informed and constantly connected is to be alive.

Informal/social media played a tremendous role in shaping online communities based on opinion and shared interest (Flangin & Metzger, 2008), along with factors such as the presence of friends and family which influence news consumption and sharing (Weeks & Holbert, 2013). Social media has also enabled the general public to limitlessly access a myriad of news sources with the capability to voice their opinions, raw thoughts (Flangin & Metzger, 2008), produce, and disseminate content. When it comes to news, college students were found to use social media, primarily Twitter, as their source of breaking news (Tandoc Jr & Johnson, 2016). The digital age has scattered news and content across multiple media (Chock, Wolf, Chen, Schweisberger, & Wang, 2013); hence, sifting through information in its multimodality, to find the true piece of information, requires a serious skill. The fluidity of information movement and aesthetics used by social media and news aggregators make news appealing to the users (Lee & Chyi, 2015), but they also raise the dilemmas of source reliability, trust, and believability (Cooke, 2017).

Literature Review

The Millennials' News Consumption Profile

The infamous Millennials were born during the burst of the computer and technology era. "Millennial [s] [have] been connected to digital media resources and the Internet for much, if not all, of their lives" (Schmidt, 2012, p. 55). Compared to other generations, the Millennials have different educational and social tactics when it comes

to seeking information and news. In a survey study conducted by the Pew Research Center, 81% of Americans access news online compared to only 12% twenty years ago. In addition, 84% of individuals aged 18-29 access news through some form of social media (Mitchell, Gottfried, Barthel, & Shearer, 2016). Another Pew report (Gottfried and Shearer, 2016) found that of social media users, 64% get news from one site, mostly Facebook, and 26% use two social media platforms. In the same report, 63% and 62% of Instagram and Facebook users respectively reported that they receive news accidently while doing other social activities; however, Reddit, Twitter, and LinkedIn roughly share the same portion of users who purposefully seek news and those who acquire news by chance.

Key findings from another survey study (Mitchell, 2016) of the same center described the "modern news consumer" to equally trust the online news produced by major news organizations and that shared by family or friends. Although 62% of Americans acquire news from Facebook, the number of users who actually trust the news remains shallow and placed at 4% (Fletcher, Radcliffe, Levy, Nielsen, & Newman, 2014; Mitchell, 2016). This, however, is not typical to the U.S. population per se. Moeller, Powers, and Roberts (2012) posited that college students from all over the world, to a certain extent, use social media to find information with some sort of mobile devices. Furthermore, it is universally acknowledged that young people prefer to seek news online rather than print (Fletcher, Radcliffe, Levy, Nielsen, & Newman, 2014).

News and Participatory Media

The other facet of digital media and news literacy is news production—motivated by the availability and easy access to means of production. This phenomenon so called "crowdsourcing" (Frechette, 2016), or "prosumers" (Seizov, 2016), where individual spectators use their own devices to record and share their stories, has taken momentum in the connected world. To live is to photograph and be photographed (Kember & Zylinska, 2012). The recent Florida high school shooting has shown examples of civic journalism wherein "professionals fail, the crowd will deliver" (Seizov, 2016, p. 171) with photographs, recorded text messages, and videos. Schmidt (2012) remarked in his survey study that college students receive less training in mediated message production, and that digital natives may be "native only to a very limited subset of technologies" (p. 56). It follows, therefore, that both news producers and consumers (media users/prosumers) need to learn about the principles of mediated message construction and decoding (Seizov, 2016). An ideal functioning of democracy requires informed citizens about news production and economy. A recurrent theme of conversation is the clash between unreliable news, citizen journalism, media literacy, and democracy (Cooke, 2017; Figueira & Oliveira, 2017; Mihailidis & Viotty, 2017; Miller, 2010).

Producing media and investigating its credibility used to be the primary role of a journalist. Today, new media has empowered the individual citizen to take on the role of watchdogging and gatekeeping of his/her own news and information. The transformation of information in networked media ecologies has expanded the scope of news workers to include almost every user of social media. James Potter (2005) alarmed that "news is not a reflection of actual events; it is a construction of news workers who are subjected to many influences and constraints" (p. 101). Equally important, the impact of social media on any society, be it positive or destructive, rests not only upon the Web 2.0 technologies, but on the social media literacies of its users as well (Rheingold, 2008).

Trust and Credibility of News

We need news! Seeking information is entertaining, especially when using mobile technologies. However, the age of information surplus has brought dilemmas to the front: fake news or disinformation. Over a decade ago, Colbert (2005) introduced the term "truthiness" with an intention to warn the public of media users from gobbling information that appeals to one's emotions and not to one's reason. Today, in the post-truth era, news travels in a blink of an eye and mainly for click-profit. The problem is not just about the news being fake. It is a multifaceted issue of sharing without verification, the constant fear of missing news and information, echo chambers, confirmation bias, and lack of news literacy skills on the part of media users (Waldrop, 2017). How to combat fake news may be out of the scope of this research, but it is important to consider the initiatives put together by media organizations and different researchers using machine learning solutions (for more information, see Figueira & Oliveira, 2017).

Educational and teacher professional development could tremendously help the students and the community to be evaluative of the media they consume. Designing courses and material that sustains critical thinking and open-questioning of information can help bring about well-informed citizens with sharp skills to spot erroneous information (as an example of a news literacy curriculum, see Fleming, 2014). Without a solid news literacy education curriculum, social media platforms would eventually be able to see and assess the world for us. To civically participate in a modern society requires the ability to independently select and assess credible news

(Silverblatt, 2008). Not only that, but also being able to critically reflect on "the expertise or viewpoints of people contributing to the information [we] are accessing . . . the design of applications, databases, search algorithms, and web pages" (Stoddard, 2014, p. 1-2). This was substantiated in a study conducted by Damico and Panos (2016) which examined the news literacy skills of 66 preservice teachers and how they assessed different websites on climate change—a truly controversial topic. The findings showed a lack of critical evaluation skills and only a slight change of the students' opinion by the end of the study.

Another Influence of Trust

Reading news online and across social media has no guarantee of truth. The authority of the text is hard to investigate, and critical consumption is one core of social media literacy (Rheingold, 2010). Research has shown that college students are less likely to independently assess the news source credibility (Ashley, Lyden, & Fasbinder, 2012; Damico & Panos, 2016; Dyer, 2017). In her study, Elia Powers (2016) found that U.S. college students from various disciplines tend to outsource the prophecy of finding and evaluating news to people in their digital network, and alarmingly, often to the detriment of their own critical thinking. Among her key takeaways, students tend to allocate quick credibility judgement to branded news companies. An opinion leader (Powers 2014; Rogers, 2003) or an authority of trust (Francke, Sundin, & Limberg, 2011) could be a family member, a friend, a colleague, or other individual with influence. Opinion leaders exercise a substantial influence when it comes to news credibility assessment. In another research, Anspach (2017) suggested that social media users better endorse news shared, liked or commented by their friends, even if it sometimes counters their political attitudes. This finding could be a positive factor in supplying balanced news; however, it would require the beliefs and attitudes to be equally distributed among one's social media friends. In short, the provision of news and the verifiability could be greatly influenced by machine algorithms or by human opinion leaders. It is, however, important for individuals to reach a level where they take in hand the mission of investigating the facts independently from the social and technological conducting/influencing powers.

Theoretical Perspective

Social Impact Theory

The premise of the social impact theory is the likelihood that individuals will respond to social influence increases under any of three potential conditions: strength, immediacy, and number (Latané, 1981). More specifically, *strength* refers to how important the influencing group is to an individual, *immediacy* includes how close the group is to the individual at the time of influence (space and time), and *number* denotes how many are in the influencing group (Latané, 1981). Therefore, individuals are most influenced by friends and family who are close to them and with whom they have more immediate contact, versus large groups where an individual is less affected by thoughts and opinions of others. This theory was developed in a time when social media did not exist; however, applying the principles in the context of social media is considerably powerful and far-reaching. In terms of social media, strength is enhanced through connections with friends, family, and colleagues with whom an individual has a relationship and values their opinions. Social media, indeed, allows immediacy of connectedness at the touch of a finger, as well as the opportunity to reach numerous people in an influencing group (Penn, 2017).

Methodology

Purpose of Study

The purpose of this survey research was to draw a comprehensive picture of pre-service teachers' online news media literacy skills. In this survey research, our goal was to explore how pre-service teachers perceive their news literacy skills as users of multiple Web 2.0 technologies, their guiding principles while browsing media content, and their practices across multiple media platforms to which access is ubiquitous.

Research Questions and Design

A descriptive survey research design was selected to explore news and media literacy beliefs and experiences of pre-service teachers. Specifically, the survey was developed to collect both quantitative and qualitative information to address the following research questions: (a) What are the perceptions of pre-service teachers regarding their news media literacy competencies?; (b) What are the news media literacy practices among pre-service teachers across social media?; and (c) What are the pre-service teachers' guiding principles regarding browsing and disseminating news across social media?

Participants

The population central to this study were pre-service teachers attending a university in southeast Texas, who were enrolled in an introductory course for future educators. Participants included 124 students in the college of education seeking teacher certification in a variety of program areas and grade levels of K-12. All students in the courses were invited to participate and the professor of the course administered the survey to all groups during their class period. All students present during the class period chose to participate.

Of note, the population surveyed is reflective of the students enrolled in the educator preparation program within the university, which includes a significantly greater number of female students, and is also consistent with representation among different ethnic groups. Expanding this further, the National Center for Education Statistics (2012) reported teacher demographics in the United States as: female (76.3%), male (23.7%), White (82%), Black (7%), Hispanic (8%), Asian (2%) and more than one race (1%). Please refer to Table 1 for descriptive data of the participants.

Table 1

Descriptive Statistics of Preservice Teachers

Participants N = 124	Age	Ethnicity	Academic Major
Male, *n* = 7	18-21, *n* = 66	White, *n* = 75	Teaching grades EC-6, *n* = 116
Female, *n* = 116	22-25, *n* = 47	Black, *n* = 13	Teaching grades 4-8, *n* = 6
	26-29, *n* = 5	Hispanic, *n* = 21	Computer engineering, *n* =2
	30-33, *n* = 1	Asian, *n* = 9	
	24-over, *n* = 5	Biracial, *n* = 6	

Instrumentation

The survey used in this study was researcher-developed and piloted with three classes of pre-service teachers enrolled in different teacher education courses. More specifically, a total of 64 participants completed the pilot survey. The survey included a Likert scale from 1(strongly disagree) to 4 (strongly agree) with 5 as an option for not applicable. In addition, the survey included four open-ended questions. Based on the analysis of responses to the pilot study, the survey items were reorganized according to themes. In addition, some items were deleted or reworded to determine consistency among responses on specific topics. The second survey was piloted with a second group of 22 pre-service teachers; data were analyzed, and minor revisions to the survey were made before administering it to the 124 participants in the study.

Participant responses to survey items regarding news and media literacy experiences were analyzed to determine potential clusters based on the factor structure. Varimax orthogonal factor rotations were executed to determine correlations among variables, factor clustering, and factors to eliminate in order to maximize each scale. The (K1) or eigenvalue-greater-than-one rule (Kaiser, 1958) and the .05 percentage of variance were implemented to establish which variables would be included in each cluster. The minimum cutoff value of .3, as recommended by Lambert and Durand (1975) was used to determine pattern coefficients. The Varimax factor rotations yielded three factors for survey items. Factor 1 revealed an eigenvalue of 7.25 and 16.84% of the variance. Factor 2 yielded an eigenvalue of 4.68 and 10.93% of the variance. Lastly, Factor 3 generated an eigenvalue of 3.34 and 8.90% of the variance. The total percent of variance for all three factors combined was 36.67. Items loading below .3 were not included in the clusters for the three factors based on internal consistency procedures which revealed no significant interrelationship between variables.

Internal consistency analysis performed to calculate Cronbach's alpha (cf. Nunnally & Bernstein, 1994) revealed a coefficient of .78 for *Perceptions* (i.e. Factor 1) which was the cluster name assigned to this group of

items, as each referred to how the participant perceived their quest for news and information across media. Internal consistency determined by Cronbach's alpha of .76 was yielded for *Practices*, (i.e. Factor 2*)* as items clustered for the factor were interrelated regarding to practices in seeking news and information from various media. Whereas Cronbach's alpha of .77 was revealed for *Guiding Principles* (i.e. Factor 3) as these clustered items referred to beliefs and principles by which the participant made decisions about acquisition of information, analyzing sources, and sharing of news.

Themes that emerged from responses to the quantitative items were cross-referenced with coded responses to open-ended items designed to gather extended responses regarding media literacy practices. Responses were examined to determine consistencies or contradictions. Tables 2 through 4 below present selected survey items which indicate significant findings relevant to each theme according to survey responses. Qualitative data which apply to the themes identified are intertwined with the survey scale responses in the discussion.

Results

The results section is organized around the themes yielded from the factorial analysis. Every theme will be supplemented by a table with the survey items. Moreover, for clarity and conciseness, we have summarized a few bullet points of the main findings and displayed them prior to the result tables.

Theme One: Perceptions
- 103 participants responded 'agree or strongly agree' on whether they believe to have the necessary skills to understand the news
- 72 participants indicated they did not learn about media message decoding and interpreting before college
- 73 stated that news does affect their beliefs
- 98 participants believe there is an opinion embedded in every piece of social media news
- 74 believe news content is customized by social media administration
- 56 participants disagree or strongly disagree to the fact that social media supplies them with news they like to read

Table 2

Perceptions of Preservice Teachers' News and Media Literacy Experiences

Survey Item	Participant Responses $N = 124$				
	Strongly Disagree (SD)	Disagree (D)	Agree (A)	Strongly Agree (SA)	Not Applicable (NA)
I believe I have necessary media literacy skills to understand news	2	17	82	21	2
I learned a lot about media message decoding and interpreting before college	17	55	37	12	3
I believe news stories do affect my beliefs	9	37	55	18	5
I believe there is an opinion embedded in every piece of social media news	2	18	60	38	5
I believe news content is customized by social media administration	5	35	60	14	10
I believe social media only gives me things I like to read	10	46	51	8	9

Theme Two: Practices

- 74 participants did not attend classes that taught about media literacy before college and 82 feel they have learned about media literacy through their own recreational readings
- 57 admit that discussing news with their friends changed their topic of interest; 66 noted that reading others' comments affects their news trustworthiness; and consistently 66 participants use others' comments as a tool to assess news credibility
- There was no significant difference in responses between participants who share news on social media without verification versus those who share and verify authenticity

Table 3

News and Media Literacy Practices of Preservice Teachers

Survey Item	Participant Responses $N = 124$				
	Strongly Disagree (SD)	Disagree (D)	Agree (A)	Strongly Agree (SA)	Not Applicable (NA)
I attended classes that taught me about media literacy before entering college	27	47	37	9	4
I learned about media literacy through my own recreational readings	8	28	61	21	6
Discussing news with my friends changes my topics of interest	7	53	45	12	4
Reading comments of others on social media affects my news trustworthiness	12	38	57	9	8
I verify news in social media by analyzing comment and opinions of others	19	34	49	17	5
I share news through social media after verifying the authenticity	12	43	43	18	8

Theme Three: Guiding Principles

- Slightly more than half of participants indicated they access news only through social media
- 97 participants do not trust social media more than other media outlets
- 64 say truthfulness is not their priority in news reading and watching news
- 61 reported they read and do not share news
- 88 participants responded they trust the message more than what their friends have to say and 77 do not trust resources liked/shared/commented by their friends

Table 4

Guiding Principles of Preservice Teachers' News and Media Literacy Practices

Survey Item	Participant Responses $N = 124$				
	Strongly Disagree (SD)	Disagree (D)	Agree (A)	Strongly Agree (SA)	Not Applicable (NA)
I only access news through social media	15	44	40	25	0
I trust information on social media more than other outlets (TV, Google, Newspaper, Internet sources)	44	53	16	4	7
Truthfulness is my priority in news reading/watching	12	52	54	6	0
I only read or watch news and do not share	7	54	39	21	3
I trust what my friends say about news more than the message itself	21	67	25	8	3
I trust resources liked/shared/commented by my friends	14	63	39	2	6

Discussion

This survey research on news media literacy across informal/social media was conducted to explore how pre-service teachers perceive their news literacy skills as active participants in multiple social media spaces, their guiding principles while engaged with media content, and their practices across multiple media platforms. Through this discussion, we will answer the research questions intertwining our quantitative and qualitative findings.

Perceptions

A significant number of participants perceived themselves as having the skill of understanding and message decoding of the news; however, responses revealed their media literacy skills were self-taught through exploration of books and personal experiences in college. This is of importance as these are future educators who will be responsible for teaching students and addressing standards set forth of credible or appropriate media literacy practices. Hence, how efficient is their post-secondary news literacy education experiences? In fact, with regard to their knowledge about the institutional information control, there is a split opinion among the participants who believe that social media administration has no control over news circulation, and others who agree to the regulation and control of information. A female participant said, "I believe news has become skewed, and that not all facts are shared." Another participant responded, "I welcome all ideas and filter for myself." This suggests that students may not be aware of the social media algorithms, as a means to information regulation and control. Further, they may be aware there is a control of information, but the knowledge of 'how' and 'why' this occurs may be missing. This could be traced to the unquestioned news consumption habits of young adults as they prefer the algorithm (Rieh & Hilligoss, 2008), family, friends, and classroom peers to decide their news diet and assess the source credibility for them (Francke, Sundin, & Limberg, 2011; Kelly & Donohew, 1999; Powers, 2014, 2016).

Speaking of friends, one female participant said, "I usually go to my parents and ask their take on the current news or I see it on any or all my social media." Another participant talking about her news sharing with friends and others said, "I like to know what is going on in my world and then talk about it with others to know how they feel." Another participant mentioned two primary news sources and commented that they are the "best outlets I found to view. Family has been watching for years." Every user has his/her own personal media ecology and perceptions, but one common aspect about the digital age is the existence of many influencing

powers that may hinder the process of acquiring and evaluating the accuracy of information. These comments validate the three tenants of the Social Impact Theory: strength, immediacy, and number.

Practices and Guiding Principles (The influencing powers)

Trust connects people to news. In this survey, our goal was to determine pre-service teachers' practices in order to assess their thinking and approach while reading day-to-day news. These practices happen in an online and social context that is user directed. They happen in a space that is best described by this pre-service female teacher who said, "Social media is a source full of truth and lies, and it's tough to determine which is which. People tend to share anything and everything they read (that is in favor of their own opinion) even before they learn whether or not it's a verified or real news."

In fact, more than half of the population considered truthfulness not their priority in news reading and watching. If they do verify, it is superficial, as a female participant said, "I usually google and search different sites to see if they say the same thing." With more sense of investigation, another female pre-service teacher declared, "I google for other reliable sources and compare the information given. I also investigate the background of who is reporting it sometimes." Additionally, about half of the population read and do not share news, or if they do, they share without verifying news authenticity. The key takeaway finding is that the consumer's habit of sharing may determine the habit of receiving news. Put differently, if finding the true piece is not a priority, then trust in sharing news may as well not be a priority.

Results also showed a great many participants use others' comments as a tool to verify the news trustworthiness; not only that, but about the same population agreed that reading others' comments on social media does affect their trustworthiness. "Comments on social media affect the thoughts and opinions of others in the public," responded a female participant. Through the lens of Social Impact Theory (Latané, 1981), we consider friends' comments and moves across social media a major influencing factor as they reflect importance, closeness, and number.

Another participant added, when doubting a piece of news, "I would ask my friends or read through comments, or even read further into it if I really want to know." As researchers, we consider this one of the 21st century social media literacy skills as practiced by the public. About half of the participants stated that they access news only through Facebook. This in in line with Gottfried and Shearer's (2016) finding that 64% of Americans acquire news from only one site. As an expansion of the Social Impact Theory, immediacy could be the closeness of the social group to the individual or the closeness of the tool, platform, and ease of access to the network, which in this case is Facebook. This is, however, in contrast with another finding where the majority expressed their distrust of social media as compared to other media outlets.

Despite the fact that the participants use others' comments as a tool to assess news trustworthiness, interestingly enough, the majority responded they trust the message more than what their friends have to say or share. This particular finding contradicts previous research where friends influence news consumption (Powers, 2016). However, this may be due to the fact that social media have changed the meaning of a "friend" that is less and less based on interpersonal acquaintance. When applying the Social Impact Theory to news and social media, the concept of number influences the user's opinion, as the term friend represents a larger and less personal audience. Amidst the odds highlighted by the current study, especially when it comes to practices and guiding principles, we believe that pre-service teachers are in dire need to not simply learn to ask critical questions about the message and its logistics, but also to learn how information comes to them as is, the mechanics of information, as well as the economics and politics involved. The graphic representation in Figure 1 depicts personal media ecology of social media users, which could be motivated and influenced by multiple powers. Noteworthy, the factors in this model may not influence social media users at all times. Additionally, no factor is identified as having more influencing power on the user than other factors.

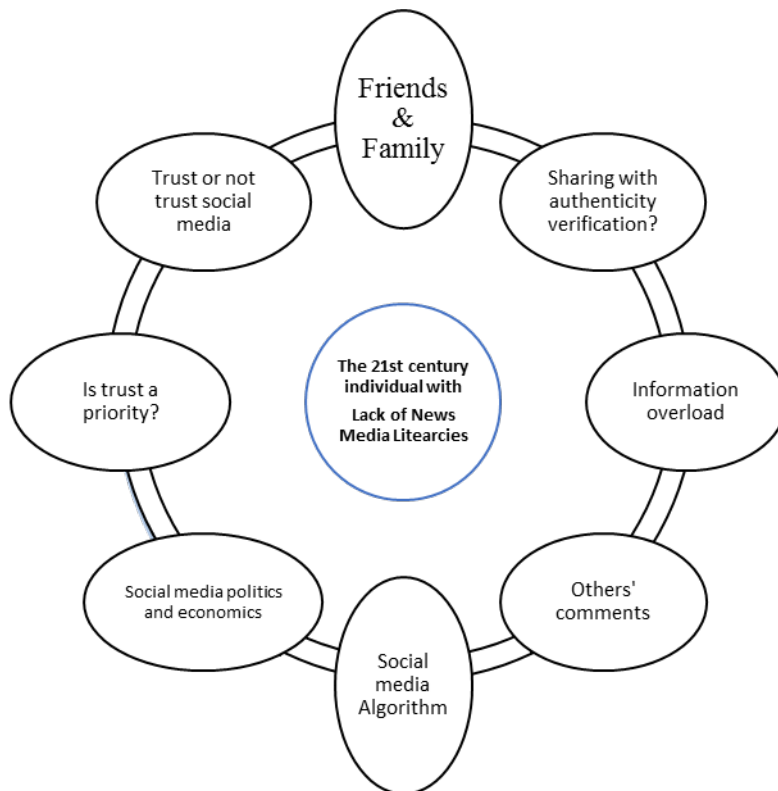Figure 1. The influencing powers in personal social/informal media ecology.

Figure 1. We created this model to depict factors (friends, algorithms, and decisions as to trust or not to trust social media) that orbit around the 21st century citizen who lacks news media literacy skills as serious challenges toward developing an active, critical thinking citizen.

Limitations
We had some difficulties accessing students around campus, because we wanted to administer the survey in a face to face context. The study only included pre-service teachers as we were interested in this population who will be teaching in the near future. Additionally, we focused on pre-service teachers in their second and third year of college. As noted earlier, we have used convenience sampling scheme, and the number of participants is small for generalizations to be made. Of note, the majority of participants were females, which reflects the field of teacher education.

Conclusion
With social media and inundation of instantaneous news as such an important part of our everyday lives, the question can be raised: Should the 21st century citizen be better equipped to critically engage and manage information overload? Educators should indeed consider developing and implementing curriculum to teach news literacy education, include open dialogue about who controls the information on social media, and discuss actions underlying information flow. Having a mobile phone and filtering millions of bits of information does not render the 21st century individual media literate. As noted in the findings of this study, participants' responses revealed pre-service teachers lack the necessary tools and strategies to critically evaluate news credibility. A significant number of participants indicated trust is not a top priority in their news quest. Moreover, participants also declared they use others' comments as a way to verify news and information across social media.

Learning to effectively maneuver the world of social media and evaluate content requires more than merely using digital devices. It requires a more in-depth knowledge of social media literacies and practices. Alarmingly, college students and future educators remarked that they received no formal educational training that enables them to learn how to rigorously authenticate information and news sources. It is important to state that many participants in this study shared that their media literacy skills and practices have been self-taught. This leads to a final question: With the multifaceted constructs of social media literacy, where should news and information literacy instruction fall within the realm of curriculum in the educational system?

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