

# **DIGITAL LITERACY: ASSESSING PERCEIVED DIFFERENCES BETWEEN ACCOUNTING MAJORS WHO ARE NATIVE ENGLISH SPEAKING VS NON NATIVE SPEAKING STUDENTS**

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# **DIGITAL LITERACY: ASSESSING PERCEIVED DIFFERENCES BETWEEN ACCOUNTING MAJORS WHO ARE NATIVE ENGLISH SPEAKING VS NON NATIVE SPEAKING STUDENTS**

## **Abstract**

The purpose of this research is to examine the differences in Digital Literacy between Native English speaking and Non-Native English speaking accounting students.

Digital literacy is critical to all university majors in the 21st century for those students to thrive in today's online, business environment. Digital literacy involves having a working knowledge of current technology and how it can best be used. It's about understanding how information can be found and communicated through computer hardware and software, the Internet, smartphones, tablets, and other digital devices, and knowing how to use these digital outlets to interact with society in a morally responsible way. (Friedman 2015).

English literacy is especially critical to understanding the more abstract, language dependent aspects of digital literacy. For students who study in America, their ability to acculturate into English speaking society, affects their digital literacy abilities to understand, interpret and follow directions. By understanding the Non-Native English speaking students' abilities, faculty can design and deliver curriculum to help raise their digital literacy acumen.

We hypothesized that a) Non-Native English speaking students have less digital literacy abilities than Native English speaking students on 10 digital literacies identified by the Hobbs' digital literacy framework, and b) Non-Native English speaking accounting students have less abilities than Native English speaking accounting students. We measured the differences between students by surveying 396 students who identified a variety of majors from a large urban university.

We found, that on 8 of the ten digital literacies, Non-Native English speaking students perceived themselves as significantly worse at the digital literacies than the Native English speaking students. These literacies were: a) analyzing messages in a variety of forms; b) evaluating the quality and credibility of content in a message; c) using powerful search strategies; d) using the Internet to connect with others with shared interests; e) reflecting on online conduct and online social responsibilities; f) using the power of communication as a tool for advocacy; g) applying social responsibility and ethical principles to communication behavior; and h) working collaboratively to solve problems in the civic sphere. When we studied only accounting students, we found only significant differences in a), f) and g). And whether Native English speaking or not, all students rated themselves poorly in the ability to create multi-media creations.

As more and more immersion of Non-Native English speaking students occurs in our classrooms, these research results can help faculty to better understand the disadvantages that Non-Native English speaking students face and can create curriculum enhancements that can increase their abilities.

## **Introduction**

Digital literacy is no longer an optional skill for college students. The global economy is driven by the Internet and its vast storage of knowledge. It is practically impossible to function professionally today without digital literacy and fluency. Students today are native speakers of the digital language of computers, video games and the Internet (Meyerson, 2016). As of March, 2018 one-in-four Americans – and 39% of those ages 18 to 29 – are online ‘almost constantly’ (Perrin and Jingjing, 2018.) This online engagement in global networks has created a need for all students to become responsible global citizens.

## **AACSB**

In addition, AACSB, the international accreditation body for accounting programs, recognized the need for high technology skills in its 2018 accreditation standards. AACSB suggests that “accounting degree programs include learning experiences that develop skills and knowledge related to the integration of information technology in accounting and business. This includes the ability of both faculty and students to adapt to emerging technologies as well as the mastery of current technology.” This research explores the current status of Non-Native speaking accounting students with regard to their perceived digital literacy and acculturation into an English language environment.

## **What is Digital Literacy**

Digital literacy is defined by Cornell University’s Digital Literacy Resource as “the ability to find, evaluate, utilize, share and create content using information technologies and the Internet.” As Eric Friedman (2015) elaborates, digital literacy involves having a working knowledge of current technology and how it can best be used. It’s about understanding how information can be found and communicated through computer hardware and software, the Internet, smartphones, tablets, and other digital devices, and knowing how to use these digital outlets to interact with society in a morally responsible way.

## **Literature Review of Digital Literacy and Acculturation**

Research by Camarota and Zeigler (2014) reported that in 2013, one in five U.S. residents spoke a foreign language. The Center of Immigration Studies reported that Spanish, Chinese, and Arabic speakers grew more since 2010 than any other languages.

Research by Todd, et. al, (2011) showed that the biggest growth in foreign students studying in the United States between 2006 and 2010 were from China, moving from 3% to 20%. They also indicated that there was a detrimental effect on long-term academic success at the K through 12

educational level if foreign students did not receive some level of special services that allowed them to take courses with academic rigor.

Research reported by the AICPA in its 2019 Trend Report indicated that 10% of U.S. accounting students are international. (AICPA, 2019)

These three research results alone indicate an interest in studying how accounting students who speak another language as their primary language fare in the study of accounting in the United States.

Research by Suarez (1994) measured acculturation by assessing English proficiency and English use and how this related to better health outcomes for women. Suarez found that Pap smear and mammogram screening increased with each gain in acculturation on English proficiency and use.

Research by Klein (2020) looked at computer literacy across multiple countries. Her research results showed that computer literacy skills were higher in countries where students had a higher socio-economic status, parents were better educated and there were more books in the home. In this study, South Korean students ranked highest in computer literacy and students in Kazakhstan ranked the lowest.

A research study by Calloway, et. al. (2016) indicated that accounting students had lesser digital literacy skills than other college majors in their ability to analyze messages; evaluate credibility of content; use search strategies and develop multimedia creations. On the other hand, accounting students perceived themselves as significantly better than finance majors in several other digital literacies, including, an ability to share common interest, use computers for advocacy, understand the meaning of copyright and apply ethical responsibility to communication behavior. And finally, computer science majors were significantly better in many of the digital literacy areas than were accounting majors. Another study by Calloway, et. al., (2018) indicated that on most levels, computer science majors were significantly better at using digital literacy skills.

## **Literature Review of Digital Literacy Models and Research**

Digital literacy models encompass competencies necessary to function effectively in a digitally enabled society. In 1997, Paul Gilster first introduced the term ‘digital literacy’ (Gilster, 1997) as “the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers.” His original model described two layers: the first layer was composed of computers, and the second layer was composed of software that formatted the information.

Later digital literacy models included the basic skills required of people to use computer technology, including the Internet skills needed to consume digital information, such as a facility with browsers. Chan, Churchill and Chu (2017) identified several current definitions of digital literacy, including Martin’s comprehensive 2008 description of a digital literate person as someone with the ability to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources (Martin 2008).

Renee Hobbs authored one of the most comprehensive contemporary conceptual descriptions of digital literacy competencies in the white paper *Digital and Media Literacy: A Plan of Action* (Hobbs 2010). This white paper explicated the plan developed by a premier group of scholars at the Aspen Institute and the *Knight Commission on the Information Needs of Communities in a Democracy*. Hobbs subsequently enumerated a list of ten generic competencies: abilities that are required of a digitally literate citizen today.

Research by Mohammadyari and Singh (2015) examined the role of digital literacy on individual performance by studying accountants and examining their use of Web 2.0 (using tools such as podcasts, blogs and wikis). They found that an accountant's level of digital literacy affected performance.

### **Importance of this Research Study**

It is extremely important for all university majors to be highly functional in digital literacy as they enter the global economy. We believe that the digital literacies described in the Hobbs Model are important to facilitate that functioning. There is little research available as to the status of digital literacy among students studying in the United States where English is not their first language. This is especially true of accounting majors. Therefore, this study uses the Hobbs Model to explore the perceptions of these students on ten important digital literacy abilities.

This knowledge will provide universities valuable information as to the current status of digital literacy and the need for curriculum enhancements for students who study at their universities.

### **Renee Hobbs Digital Literacy Model**

The Hobbs Digital Literacy Model suggests the following ten characteristics of a digitally literate person.

1. The ability to analyze messages in a variety of forms, including identification of the author, purpose and point of view of the message.
2. The ability to evaluate the quality and credibility of content in a message (e.g., distinguishing between “a marketing ploy for nutritional supplements and solid information based on scientific evidence” or quality content and junk journalism).
3. Knowledge of and the ability to use powerful search strategies.
4. The ability to develop multimedia creations.
5. The ability to use the Internet to connect with others with shared interests.
6. The ability to reflect on online conduct and online social responsibilities.
7. The ability to use the power of communication as a tool for advocacy.
8. Understanding of “copyright”.
9. The ability to apply social responsibility and ethical principles to communication behavior.
10. The ability to work collaboratively to solve problems in the civic sphere, which will require many of the other capabilities listed above.

## **Research Question**

We believe that many non-native speaking students in our accounting programs have not been in America long enough for them to master a proficiency in English that would provide them with an equal advantage compared to native English speaking students. Our research question is intended to examine this phenomenon in a digital literacy setting.

Stated in the null, our research hypothesis is: “There is no significant difference between accounting major who speak English as their native language, and accounting majors who come to study in America and English is not their native language.

## **Subjects**

The sample for this study was taken from the population of undergraduate and graduate students at a large northeastern private university. These students majored in three schools: computer science, business, and liberal arts. The following information describes these subjects:

Three hundred ninety-nine students were surveyed. By language, 52% spoke English as their primary language; 48% did not have English as their first language. [These non-native English speakers represented 29 other languages, with 61% of these non-native speakers, using Chinese dialects]. One hundred and ninety were accounting majors; 34 were finance majors; 78 were computing majors; and 97 came from all other majors. Fifty-four percent were female and 46% were male. Fifty-eight percent of these subjects were under 25 years of age, and 42% were 25 years of age or older.

## **Research Instrument**

The survey instrument used items from the Hobbs Digital Literacy Model (Hobbs, 2010). This model represents ten generic abilities that represent digital literacy. The model was originally published in 2010 and is still relevant as a model of digital literacy today. The survey relies on self-perceptions and is measured by: a) very low ability (-2); b) low ability (-1); c) neither low nor high ability (0); high ability (1); and very high ability (2). [See Appendix A for the Survey Instrument.] [See Appendix B for the Demographics’ Instrument].

## **Self-Perception and Actual Ability**

Our survey instrument requested respondents to rank their perceived ability and understanding of the ten aspects of digital literacy from Appendix A. The underlying assumption was that these self-perceptions and assessments are correlated with objective measures of actual ability and understanding. There are convincing precedents for making this assumption. For example, Hargittai’s (2009) research on survey measures of web-oriented digital literacy compared perceived behaviors and objective measures of skill levels. He found that people’s self-rated level of understanding of various computer and internet-related terms on a 5-point scale was a relatively good predictor of how well they were able to navigate online content.

## Hypotheses

We hypothesize that there is no difference in 10 digital literacy attributes between Native English speaking college students and Non-Native English speaking students. We also hypothesize that there is no difference between Native English speaking accounting majors and Non-Native speaking accounting majors.

To test our hypotheses, we categorized the subjects into the following groups for analysis:

- ✓ Group 1: 396 students: 204 Native English speaking students and 192 Non-Native English speaking students for all college disciplines
- ✓ Group 2: 185 accounting major students: 62 Native English speaking students and 123 Non-Native English speaking students

The ten individual hypotheses from the Hobbs Model follows:

*H1<sub>0</sub>: There is no significant difference between Native English Speaking (Accounting) students and Non-Native Speaking (Accounting) students in their ability to analyze messages in a variety of forms, including identification of the author, purpose and point of view of the message.*

*H2<sub>0</sub>: There is no significant difference between Native English Speaking (Accounting) students and Non-Native Speaking (Accounting) students in their ability to evaluate the quality and credibility of content in a message (e.g., distinguishing between “a marketing ploy for nutritional supplements and solid information based on scientific evidence” or quality content and junk journalism).*

*H3<sub>0</sub>: There is no significant difference between Native English Speaking (Accounting) students and Non-Native Speaking (Accounting) students in their knowledge of and ability to use powerful search strategies.*

*H4<sub>0</sub>: There is no significant difference between Native English Speaking (Accounting) students and Non-Native Speaking (Accounting) students in their ability to develop multimedia creations.*

*H5<sub>0</sub>: There is no significant difference between Native English Speaking (Accounting) students and Non-Native Speaking (Accounting) students in their ability to use the Internet to connect with others with shared interests.*

*H6<sub>0</sub>: There is no significant difference between Native English Speaking (Accounting) students and Non-Native Speaking (Accounting) students in their ability to reflect on online conduct and online social responsibilities.*

*H7<sub>0</sub>: There is no significance difference between Native English Speaking (Accounting) students and Non-Native Speaking (Accounting) students in their ability to use the power of communication as a tool for advocacy.*

*H8<sub>0</sub>: There is no significant difference between Native English Speaking (Accounting) students and Non-Native Speaking (Accounting) students in their understanding of “Copyright”.*

*H9<sub>0</sub>: There is no significant difference between Native English Speaking (Accounting) students and Non-Native Speaking (Accounting) students in their ability to apply social responsibility and ethical principles to communication behavior.*

*H10<sub>0</sub>: There is no significant difference between Native English Speaking (Accounting) students and Non-Native Speaking (Accounting) students in their ability to work collaboratively to solve problems in the civic sphere, which will require many of the other capabilities listed above.*

We analyzed the results of this survey using an independent samples t-test for Equality of Means, using SPSS. A confidence level of 95% with a p-score of less than .05 was used.

## Results

Table 1 presents descriptive statistics on our subjects of interest; Table 2 presents the findings for 396 subjects: students who are Native English speakers and Non-Native English speakers and Table 3 presents the findings for 185 accounting subjects only: subjects who are Native English speakers and Non-Native English speakers.

<b>Table 1</b>			
<b>Descriptive Statistics of Native English Speaking vs. Non-Native English Speaking Students</b>			
<b>[All disciplines and accounting discipline]</b>			
	<b>All College Disciplines:</b>		<b>Accounting Discipline:</b>
<b>Native English Speaking Students</b>	204		62
<b>Non-Native English Speaking Students</b>	192		123
Total research subjects	396		185
<b>Percent of Non-Native English Speaking Students</b>	49%		67%



Table 2 depicts the findings for 396 subjects: students who are Native English speakers and Non-Native English speakers. The results indicate that Native English speaking students are significantly better than Non-Native English speaking students on 8 out of the 10 Hobbs questions. The only questions that found no significance were Questions 4 and 8 with regard to multimedia creation and the understanding of “copy write.” There was no significant difference on these two questions between Native English and Non-Native English speaking students.

Table 3 depicts the findings for 185 accounting subjects only: subjects who are Native English speakers and Non-Native English speakers. The results indicate that Native English speaking accounting students are significantly better than Non-Native English speaking accounting students on:

- Question 1: In their ability to analyze messages in a variety of forms, including identification of the author, purpose and point of view of the message.
- Question 7: In their ability to use the power of communication as a tool for advocacy. [The significant difference here is in the “variance” between the students but all students have the average ability in this question.]
- Question 9: In their ability to apply social responsibility and ethical principles to communication behavior.

### **Discussion of The Results**

The results of the above research lead to interesting findings for the accounting profession. Our results indicate that Native English speaking students are significantly better on eight of the 10 Hobbs questions. But when we looked only at accounting majors, the gap between those native English speaking students and the non-native English speaking students narrowed greatly. Among the accounting students, the native English speaking students were significantly better on only three of the 10 questions: analyzing messages in a variety of forms; the ability to use the power of communication as a tool for advocacy; and the ability to apply social responsibility and ethical principles to communication behavior. [Note that when we looked at all 399 students by language the only two questions on which there was no significant difference on language orientation was on the ability to develop multimedia creations (and they were all universally bad at this) and the understanding of “copyright.”]

**TABLE 2**

**Identification of Significant Differences in Digital Literacy between Native English speaking students and Non-Native English speaking students on the Hobbs Digital Literacy Model  
[Mean from -2 to +2]**

	Null Hypotheses	Native English Speaking Students' Mean n = 204	Non-Native English Speaking Students' Mean n = 192	P value .10 ** significant
<b>H1<sub>0</sub>:</b>	<i>There is no significant difference between Native English Speaking Students and Non-Native English Speaking Students in their ability to analyze messages in a variety of forms, including identification of the author, purpose and point of view of the message.</i>	<b>1.10</b>	<b>.73</b>	<b>.000 **</b>
<b>H2<sub>0</sub>:</b>	<i>There is no significant difference between Native English Speaking Students and Non-Native English Speaking Students in their ability to evaluate the quality and credibility of content in a message (e.g., distinguishing between “a marketing ploy for nutritional supplements and solid information based on scientific evidence” or quality content and junk journalism).</i>	<b>1.05</b>	<b>.62</b>	<b>.000 **</b>
<b>H3<sub>0</sub>:</b>	<i>There is no significant difference between Native English Speaking Students and Non-Native English Speaking Students in their knowledge of and ability to use powerful search strategies.</i>	<b>.96</b>	<b>.67</b>	<b>.000 **</b>
<b>H4<sub>0</sub>:</b>	There is no significant difference between Native English Speaking Students and Non-Native English Speaking Students in their ability to develop multimedia creations.	<b>.28</b>	<b>.35</b>	<b>.509</b>
<b>H5<sub>0</sub>:</b>	<i>There is no significant difference between Native English Speaking Students and Non-Native English Speaking Students in their ability to use the Internet to connect with others with shared interests.</i>	<b>1.45</b>	<b>1.22</b>	<b>.005 **</b>
<b>H6<sub>0</sub>:</b>	<i>There is no significant difference between Native English Speaking Students and Non-Native English Speaking Students in their ability to reflect on online conduct and online social responsibilities.</i>	<b>1.18</b>	<b>.83</b>	<b>.000 **</b>
<b>H7<sub>0</sub>:</b>	<i>There is no significant difference between Native English Speaking Students and Non-Native English Speaking Students in their ability to use the power of communication as a tool for advocacy.</i>	<b>.86</b>	<b>.68</b>	<b>.039 **</b>
<b>H8<sub>0</sub>:</b>	There is no significant difference between Native English Speaking Students and Non-Native English Speaking Students in their understanding of “Copyright”.	<b>1.08</b>	<b>.95</b>	<b>.135</b>
<b>H9<sub>0</sub>:</b>	<i>There is no significant difference between Native English Speaking Students and Non-Native English Speaking Students in their ability to apply social responsibility and ethical principles to communication behavior.</i>	<b>1.19</b>	<b>.98</b>	<b>.005 **</b>
<b>H10<sub>0</sub>:</b>	<i>There is no significant difference between Native English Speaking Students and Non-Native English Speaking Students in their ability to work collaboratively to solve problems in the civic sphere, which will require many of the other capabilities listed above.</i>	<b>.96</b>	<b>.77</b>	<b>.015 **</b>

**TABLE 3**

*Identification of Significant Differences in Digital Literacy between Accounting Native English speaking students and Accounting Non-Native English speaking students on the Hobbs Digital Literacy Model  
[Mean from -2 to +2]*

	Null Hypotheses	Accounting Native English Speaking Students' Mean n = 62	Accounting Non-Native English Speaking Students' Mean n = 123	P value .10 ** significant
<b>H1<sub>0</sub>:</b>	<i>There is no significant difference between Accounting Native English Speaking Students and Accounting Non-Native English Speaking Students in their ability to analyze messages in a variety of forms, including identification of the author, purpose and point of view of the message.</i>	1.03	.70	.003 **
<b>H7<sub>0</sub>:</b>	<i>There is no significant difference between Accounting Native English Speaking Students and Accounting Non-Native English Speaking Students in their ability to use the power of communication as a tool for advocacy.</i>	.74	.74	.048 ** [significant difference is in variance among subjects]
<b>H9<sub>0</sub>:</b>	<i>There is no significant difference between Accounting Native English Speaking Students and Accounting Non-Native English Speaking Students in their ability to apply social responsibility and ethical principles to communication behavior.</i>	1.21	.97	.026 **

Why did English speaking subjects perceive that they were better in digital literacy than did non-English speakers? Remember the research by L. Suarez discussed above: after studying English proficiency and English use in subjects, Suarez found that the time of acculturation matters. The longer the acculturation, the better the outcomes.

Additional instruction in English proficiency, and a longer acculturation time-period over which this happens, would likely narrow the digital literacy differences found in our research. English literacy is especially critical to understanding the more abstract, language dependent aspects of digital literacy as defined in the Hobbs Model. These abilities require a higher level of English language competency. As there is more and more immersion of non-English native speaking students in our English-speaking classrooms, this result becomes more challenging.

We can help our Non-Native English speaking accounting students by incorporating into assignments in the classroom, in a purposeful way, through discussions, research projects, and experiential learning exercises. This will help these non-native English students better analyze messages; understand how to use the power of communication as a tool for advocacy; and what it means to apply social responsibility and ethical principles to communication behavior. The

three areas of Hobbs model that non-native English speakers assessed significantly lower than native English speakers.

### **Other Interesting Findings (Multimedia Creations)**

Of the 10 Hobbs questions, Question #4 on the ability to develop multimedia creations, we found that all students, Native English speaking students and Non-Native English speaking students were all equally inadequate in this digital literacy skill. [On a scale of -2 to +2, the mean average for Native English speaking students was .28 and that of Non-Native English speaking students was .35]

This is an important finding because research by the New Media Consortium (Becker, 2017) suggests that college students who can create original work using digital tools, can adapt to a wider range of work environments and have better career advancement opportunities. They found that college students who received better digital literacy training in school, had higher promotion rates after college. This could be a valuable addition to college curriculum for all majors.

### **Conclusions of Study**

The Internet today is inextricably woven into the fabric of our social, economic and societal lives. The latest AACSB standards have laid out what they expect our business students to be learning. In this study, we wanted to examine the extent of digital literacy attributes with regard to the ability to learn in an English speaking environment. We found that there are significant barriers to learning when students study in the United States where English rather than their native language is the language of instruction. This result is also impacted by the lack of time for acculturation by foreign students, especially when their study duration is less than three years.

Todd, et. al., (2011) suggest that universities with significant populations of non-native speaking students need to provide high level services of English as a Second Language support. This includes providing resource instructors and tutors with experience in both the content area as well as with working with students who study in a second language environment.

### **Limitations of Study**

All subjects were obtained from one academic institution. This institution has a higher percentage of Non-Native English speaking accounting students (67%) when compared to the research reported by the AICPA in its 2019 Trend Report indicating that 10% of U.S. accounting students are international. (AICPA, 2019). This limitation is also confounded by the 67% of foreign accounting students at this subject university, who lack an incubator for quick assimilation, as they live in an environment where they can speak their native language, visit China Town, and in general, have less contact with English speaking students.

While the study does offer some insight into the self-perceptions around digital literacy for Non-Native English speaking students and Native English speaking students, generalization to the external population cannot be made due to this limitation.

### **Future Research**

Digital literacy and use of the Internet are global issues. This study indicates great potential for continued research in this area. In general, due to the limitations of external validity mentioned above, future research could replicate (and confirm or disconfirm) our findings by using a more representative sample of Non-Native English speaking students across multi-university settings. In addition, digital literacy abilities between cultures, ages, gender and life/work experiences should be studied. We also note that there are a large number of military veterans attending colleges today. Although we did not study this subject group, we believe this is another area for study of digital literacy research. Additionally, our research shows that, although there is not a significant difference between subjects in their use of multimedia, all subjects are woefully lacking in their ability to create and use multimedia. This is another area for future research and curriculum enhancement.

## Appendix A

### Research Instrument: Digital Literacy

The internet is quickly becoming the critical gateway for addressing jobs, education, health care, government services, and civic participation.

This research studies the life skills needed for digital literacy.

**Requirement One:** Please **CIRCLE** a response to the following 10 questions.

**Requirement Two:** Please fill in the demographic survey.

Question 1: Rate your ability to analyze messages in a variety of forms, including identification of the author, purpose and point of view of the message.

**Very Low Ability      Low Ability      Neither Low Nor  
High Ability      Very High Ability**

Question 2: Rate your ability to evaluate the quality and credibility of content in a message (e.g., distinguishing between “a marketing ploy for nutritional supplements and solid information based on scientific evidence” or quality content and junk journalism).

**Very Low Ability      Low Ability      Neither Low Nor  
High Ability      Very High Ability**

Question 3: Rate your knowledge of and ability to use powerful search strategies.

**Very Low Ability      Low Ability      Neither Low Nor  
High Ability      Very High Ability**

Question 4: Rate your ability to develop multimedia creations.

**Very Low Ability      Low Ability      Neither Low Nor  
High Ability      Very High Ability**

Question 5: Rate your ability to use the Internet to connect with others with shared interests.

**Very Low Ability      Low Ability      Neither Low Nor  
High Ability      Very High Ability**

Question 6: Rate your ability to reflect on your online conduct and your online social responsibilities.

**Very Low Ability      Low Ability      Neither Low Nor  
High Ability      Very High Ability**

Question 7: Rate your ability to use the power of communication as a tool for advocacy.

**Very Low Ability      Low Ability      Neither Low Nor High Ability      High Ability      Very High Ability**

Question 8: Rate your understanding of “copyright”.

**Very Low Understanding      Low Understanding      Neither Low Nor High Understanding      High Understanding      Very High Understanding**

Question 9: Rate your ability to apply social responsibility and ethical principles to communication behavior.

**Very Low Ability      Low Ability      Neither Low Nor High Ability      High Ability      Very High Ability**

Question 10: Rate your ability to work collaboratively to solve problems in the civic sphere, which will require many of the other capabilities listed above.

**Very Low Ability      Low Ability      Neither Low Nor High Ability      High Ability      Very High Ability**





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