

## Technology-based Experiences of Young People: Opportunities for Filipino Educators

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**Abstract.** The paper identifies and describes the use of technology in supporting the daily activities of individuals, 12 years and older, in Panay Island, Philippines. This study collected data using voluntary completion of a paper-based survey on technology use. Survey items asked respondents to identify how often technology was used to complete specific personal, professional, social or academic tasks or activities. The survey also collected demographic information on gender and location (rural/urban). Data analysis used descriptive and nonparametric statistics. Results demonstrate commonalities and differences in handling and accessing technology across gender and location of participants. The paper presents the top tasks performed “all the time” as well as “none at all” by the respondents. The results of this study might have implications to 1) designing education programs that integrate technology, 2) developing continuing professional development of educators on technology knowledge and skills especially those involved with the youth, and 3) creating a baseline of expectations among the population studied about integrating technology to specific tasks or activities. Generalization of the results might be limited only to the identified regional contexts or those with similar characteristics.

Keywords: Academic tasks, Gender, Rural, Social activities, Technology use, Urban

### Introduction

Technology is changing the way individuals do things at home, work and the classroom (Fox, 2006; Wastiau, Blamire, Kearney, Quittre, Van de Gaer, & Monseur, 2013). It is changing the way people communicate, create, learn, and teach (Masagca & Londerio, 2008; Raman, 2011). Project Tomorrow (2011) reported that the increased introduction of new technologies had propelled educators to use them to provide technology-enabled learning experiences. Also, the availability of these new educational tools and applications seems to generate significant interest in using various formats in delivering instruction such as mobile learning, online and blended learning, and e-textbooks.

The research literature identifies that the use of technology engages students in learning experiences that develop more in-depth knowledge (Dede, 2014). Also, the literature addresses the connection between technology and skill development (Scott, 2015) especially problem solving (Lavonen, Autio, & Meisalo, 2004), creativity (Mishra, Henriksen, & the Deep-Play Research Group, 2013), and critical thinking (Chiu, 2009; McMahon, 2009). Further, the

integration of technology into the curriculum create opportunities to empower students to take responsibility for their learning (Prensky, 2008). The last decade has seen a massive increase across the education sector in the use of mobile learning (Roy, 2016). Citing Julie Evans, Project Tomorrow's CEO, McCrea (2002) reiterate the "leveraging of small, portable devices to facilitate anytime, anywhere, un-tethered learning." The increased use of mobile devices also has created a new vision for delivering instruction.

The need to know how technology plays a significant role in students' lives especially adolescents (teens) and young adults (tweens) in the Philippines (Alampay, 2008; Dela Rosa, 2016) is important to curriculum developers and policymakers. Unfortunately, information on what technology is available or accessible to this population is quite limited. Further, research on technology-based experiences from the Philippines is almost non-existent. This study focuses on identifying and learning more about these technology-based experiences in everyday life for teens and tweens in one of the regions in the Philippines. The researchers are interested in understanding the technology-based experiences of young Filipinos related to schooling and social activities (Flor, 2008).

### **Research Questions**

For this study, the researcher pursued two research questions aligned with the schooling and social activities of Filipino teens and tweens in Panay Island, Philippines given two factors --- gender and geographic location. Gender is an important factor to consider because it defines many of the career paths of this population as they complete their secondary education and pursue degrees in higher education. Location is also important because there are more options to study at a university or college outside of the only urban area on the island. For this study, the researchers considered the following questions:

- What technology-based activities commonly experienced by female and male respondents?
- What technology-based activities commonly experienced by respondents from urban and rural locations?

### **Methodology**

This study attempts to create a baseline data on the use of technology among adolescents (teens) and young adults (tweens) in a specific context (Panay Island, Philippines). The island is geographically located in the central Philippines as part of a group of islands called the Visayas, and divided into two regions: Eastern and Western. The Western Visayas region covers the provinces of Antique, Aklan, Capiz, and Iloilo in Panay Island as well as Negros Occidental in the neighboring island of Negros. This region also includes a smaller island called Guimaras classified as a sub-province of Iloilo.

Data collected from a paper-based survey designed and developed by the researcher and based on the research literature (An & Reigeluth, 2012). The final version of the survey included 32 statements focused on technology-supported task or activity (See Figure 1 in Appendix). For each task or activity, the survey asked respondents for the frequency of their experiences (i.e.,

All the time, Most times, Sometimes, and None at all). Demographic questions asked for factors about gender, birth year, school affiliation, location, and grade level.

The lead researcher, based in the United States, traveled to the target site in the Philippines to collect the data. Survey respondents were recruited using volunteers from various secondary and tertiary educational institutions located in one geographic region (Western Visayas).

The researcher entered the data from 1,269 completed surveys into an Excel spreadsheet for analysis. Given the research questions, several tables were prepared to demonstrate the frequency of user experiences by gender and location only for each of the 32 technology-supported tasks or activities. The number of survey completers (N) varies for each demographic factor identified (gender=1,257; location=1,269).

## **Results and Discussion**

The researchers had three questions about frequency of everyday user experiences for each technology-supported task or activity by gender (female/male) and location (urban/rural). If a technology-supported task or activity is receiving more than 50% response as performed “all the time” (See Table 1) or “none at all” (See Table 2), then it was included in a list and ranked.

### **Technology-supported tasks or activities: Female vs. Male**

*“All the time” by gender.* Using gender as a factor, only 1,257 respondents (743 Female, 514 Male) account for the population that completed the survey. Seven technology-supported tasks or activities were reported by over 50% of the total number of respondents as something they performed all the time (see Table 1 in Appendix). Most of these tasks or activities could be considered having social or entertainment value to the respondents. Two tasks or activities (i.e., “Search for information on the web” and “Take pictures or digital images”) seemed aligned with having academic values.

Female respondents reported more tasks or activities in comparison to their male counterparts. Both groups ranked similar tasks or activities as their top two: “Listen to music” and “Text friends and family.”

In reviewing the data further, between 40% and 50% of the female respondents also identified two additional tasks as something they performed all the time: “Store digital images” and “Create an online profile (e.g., Facebook).” Male respondents identified three tasks or activities: “Chat with family and friends,” and “Call friends and family.” Similarly, female respondents also identified them in the previous section, but added a new one, “Play an online game.”

*“None at all” by gender.* Eight technology-supported tasks or activities were reported by over 50% of the total number of respondents as something they had not performed (see Table 2 in Appendix). Half of these tasks or activities pertained to business transactions (items 1, 2, 4, and 6). The other four tasks or activities could be easily identifiable as related to academic endeavors (items 3, 5, 7 and 8). Both groups identified seven tasks or activities as their top choices of having no experience. All tasks or activities were almost similar for both groups except one –

females identified “Create a digital story” while their male counterparts identified “Create a podcast” – both have academic value.

Again, in reviewing further, the data specifically between 40% and 50% responses of the female respondents also identified two additional tasks as something they performed all the time: “Submit an application for school or job” and “Create a digital story.” The latter was one of those tasks identified by their male counterparts in the previous section.

*What happened to the teaching and learning tasks or activities?* After studying the two ends of the continuum of responses, the researchers investigated what happened to those tasks or activities aligned with teaching and learning. Table 3 (in Appendix) illustrated that between 30% and 50% of the respondents had chosen many of these as “sometimes” experiences. Both female and male respondents identified a total of twelve unique experiences that are potentially supportive of performing teaching and learning tasks or activities.

### **Technology-supported tasks or activities: Urban vs. Rural**

*“All the time” by location.* Seven technology-supported tasks or activities were also reported by over 50% of the 1,269 respondents (844 urban, 425 rural) as something they performed all the time (see Table 4 in Appendix). Similarly, all the tasks or activities identified are similar to the previous section and could be considered having social or entertainment value to the respondents except for items 3 and 7.

Urban respondents reported more tasks or activities in comparison to their rural counterparts. Both groups ranked similar tasks or activities as their top two: “Listen to music” and “Text friends and family.” However, the big difference was that over 50% of the rural respondents selected only two tasks or activities.

A similar outcome emerged after reviewing further the data specifically between 40% and 50% responses of the female respondents. They identified three additional tasks or activities as something they performed all the time (“Store digital images,” “Create an online profile (e.g., Facebook),” and “Play an online game.”

*“None at all” by location.* Nine technology-supported tasks or activities were reported by over 50% of the 1,269 respondents as something they had not performed (see Table 5 in Appendix). Over half of these tasks or activities about business transactions (items 1, 2, 5, 7 and 9). The other four tasks or activities could be readily identifiable as related to academic endeavors (items 3, 4, 6 and 8).

The urban respondents identified seven tasks or activities as their top choices of having no experience while the rural group identified nine. All tasks or activities were almost similar for both groups except two – the rural respondents identified “Create a digital story” and “apply to school or job” as having no experience – both could have educational value. Interestingly enough, when reviewing the selection of those between 40% and 50% responses, the two differences above are the ones identified. Finally, both groups identified the same top two tasks or activities.

## **Educating the Youth with Technology in Panay Island**

Given the population targeted for this study, it seems that these teens and tweens are highly involved in social activities especially entertainment (e.g., listening to music). Across all population, from both urban and rural males and females, indicated listening to music as their top use of technology as well as texting friends and family (see Table 6 in Appendix). Watching videos online (e.g., YouTube) ranked a distant fourth which could be considered part of the entertainment package for this population. The only task aligned to schooling or academics is "search for information on the Web" which ranked third on the list.

How can we improve the education of Filipino youth on using technology to support their academic activities specifically in Panay Island? For example, "search for information on the Web" is the top-ranked task or activity experienced by survey completers who identified as female, urban or both. Male or rural participants did not choose this as their top-ranked task or activity. One educational opportunity would involve exposing male students in both urban and rural locations to instructional experiences that pair with technology tools and applications. Educators could also focus assignments on topics of interest to male students such as sports, adventures, and games and simulations.

Other opportunities to serve the academic needs of this population could engage educators in designing instructional sessions with technology around free times, lunch breaks or end of the day to help students with limited access to the Internet at home. Further, taking advantage of the accessibility of mobile devices, educators can provide training or tutoring sessions on how to use them in searching the library databases. Further, educators can team up with librarians to design and develop simplified library guides or finding aids that are easily accessible online using mobile devices.

Urban- or rural-based educators could also use the texting application or Twitter to their advantage in disseminating information about school or class activities. Students at the beginning of the school year could be encouraged to subscribe to the educator's text or twitter account. Faculty members can coordinate with librarians when they assign papers in their classes. Librarians then can proactively communicate the library services available to the students. Also, they can share information on how students can text them if they have a question or want to chat about finding information for their paper assignment.

Given Table 7 (in Appendix), educators can coordinate with their libraries to design and develop educational sessions on lifelong learning topics. As part of growing up, teens and tweens will become adults with responsibilities that involve money management. The data collected reported that respondents have no experience in paying bills online as well as checking or monitoring finances. The two top-ranked tasks or activities are opportunities to further the education of the Filipino youth. There is value in integrating these instructional experiences to senior high school or first-year college experience classes.

Finally, the educators can team up with librarians in teaching technology-rich as well as blended and online classes to demonstrate how to access library services especially searching the

databases. Librarians can create self-contained modules that can be embedded in courses (face-to-face, blended, or online) to support assignments and activities.

## Conclusion

From children to teenagers, technology plays an essential role in preparing this population for successful high school and college experiences. Knowledge of prior experiences especially in technology for these learners would be helpful in designing and developing new educational programs. Knowledge and skills to conduct research, apply visual literacy skills, manage the proliferation of fake news, and demonstrate critical thinking skills in mining databases and web searching have become essential in educating the youth. Finally, these findings contribute and support the design of an efficient and meaningful continuing professional development program for educators in meeting the needs of teen and tween users.

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### Appendix

Figure 1. Exploring the use of technology survey

<b>I use technology to ...</b>	All the time (100%	Most times (More than 50%)	Sometimes (Less than 50%)	None at all (0%)
1. Access online databases and research articles.				
2. Build web pages and websites.				
3. Buy or sell items online.				
4. Call friends and family.				
5. Chat with family and friends.				
6. Check or monitor my finances or bank account.				
7. Complete an online form.				
8. Compute or solve math-related problems.				
9. Create a digital story.				
10. Create an online profile (e.g., Facebook).				
11. Create a podcast.				
12. Create digital images (e.g., using Photoshop).				
13. Create multimedia files (e.g., videos or movies).				
14. Design and create brochures, flyers, or posters.				
15. Enter data into a spreadsheet				
16. Listen to music.				
17. Look up words using online reference tools.				
18. Make a reservation for a place to stay (e.g., hotel).				
19. Pay bills online.				
20. Search for information on the web.				
21. Play an online game.				
22. Put together an electronic presentation (e.g., using PowerPoint).				
23. Send and receive email from friends and family.				
24. Store digital images.				
25. Submit an application for school or job.				
26. Take or complete an online course.				
27. Take pictures or digital images.				
28. Text friends and family.				
29. Translate texts from one language to another.				
30. View images of places for a vacation.				
31. Watch videos online (e.g., YouTube).				
32. Word process papers and assignments.				



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Table 1. Over 50% of the respondents (gender) reported having performed this task or activity “All the time.”

I use technology to ...	Female N=743		Male N=514		Total N=1257
	%	Rank	%	Rank	%
1. Listen to music	72.14	1	68.09	1	70.12
2. Text friends and family	69.04	2	61.09	2	65.07
3. Search for information on the web	55.99	3	53.70	4	54.85
4. Take pictures or digital images	54.10	4	---	---	---
5. Chat with family and friends	51.95	5	---	---	---
6. Watch videos online (e.g., YouTube)	51.68	6	54.86	3	53.27
7. Call friends and family	51.28	7	---	---	---

Table 2. Over 50% of the respondents (gender) reported having NOT performed this task or activity (“None at all”)

I use technology to ...	Female N=743		Male N=514		Total N=1,257
	%	Rank	%	Rank	%
1. Pay bills online.	84.93	1	75.29	1	80.11
2. Check or monitor my finances or bank account.	77.12	2	68.09	2	72.61
3. Take an online course or complete	76.85	3	63.23	4	70.04
4. Buy or sell items online	72.68	4	65.37	3	69.03
5. Create a podcast.	71.87	5	---	---	---
6. Make a reservation for a place to stay (e.g., hotel).	66.22	6	61.28	5	63.75
7. Build web pages and websites	59.35	7	58.95	6	59.15
8. Create a digital story	---	---	55.45	7	---

Table 3. Between 30% and 50% of the respondents (gender) reported having performed this task or activity “Sometimes.”

I use technology to ...	Female N=743		Male N=514		Total N=1,257
	%	Rank	%	Rank	%
1. Compute or solve math-related problems.	48.18	1	47.08	1	47.63
2. Complete an online form.	40.92	2	39.30	2	40.11
3. Create digital images (e.g., using Photoshop).	40.92	2	37.94	3	39.43
4. Translate texts from one language to another.	39.57	3	37.55	4	38.56
5. Enter data into a spreadsheet	39.17	4	35.21	6	37.19
6. Create multimedia files (e.g., videos or movies).	39.03	5	37.35	5	38.19

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7. Design and create brochures, flyers, or posters.	38.63	6	33.66	8	36.15
8. Play an online game.	37.01	7	---	---	---
9. Put together an electronic presentation (e.g., using PowerPoint).	32.84	8	34.05	7	33.45
10. View images of places for a vacation.	32.03	9	30.93	9	31.48
11. Create a digital story.	30.55	10	---	---	---
12. Submit an application for school or job.	30.55	10	30.93	9	30.74

Table 4. Over 50% of the respondents (location) reported having performed this task or activity “All the time.”

I use technology to ...	Urban (67%) N=844		Rural (33%) N=425		Total N=1269
	%	Rank	%	Rank	%
1. Listen to music	75.24	1	61.18	2	68.21
2. Text friends and family	67.77	2	61.41	1	64.59
3. Search for information on the web	60.90	3	---	---	---
4. Watch videos online (e.g., YouTube)	59.48	4	---	---	---
5. Chat with family and friends	56.87	5	---	---	---
6. Call friends and family	51.54	6	---	---	---
7. Take pictures or digital images	50.12	7	---	---	---

Table 5. Over 50% of the respondents (location) reported having NOT performed this task or activity (“None at all”)

I use technology to ...	Urban (67%) N=844		Rural (33%) N=425		Total N=1,269
	%	Rank	%	Rank	%
1. Pay bills online.	77.73	1	86.82	1	82.28
2. Check or monitor my finances or bank account.	69.08	2	82.12	2	75.60
3. Take an online course or complete	69.08	2	75.29	5	72.19
4. Create a podcast.	66.82	3	73.88	6	70.35
5. Buy or sell items online	65.17	4	78.35	3	71.76
6. Build web pages and websites	60.19	5	56.00	8	58.10
7. Make a reservation for a place to stay (e.g., hotel).	57.82	6	76.71	4	67.27
8. Create a digital story	---	---	56.94	7	---
9. Submit an application for school or job.	---	---	54.35	9	---

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Table 6. Comparisons across factors for the three top-ranked task or activity experienced (over 50%).

<b>Task or Activity</b>	<b>Participating Population</b>				<b>Total</b>
	<b>F</b>	<b>M</b>	<b>U</b>	<b>R *</b>	
Listen to music	X	X	X	X	4
Text friends and family	X	X	X	X	4
Search for information on the Web	X		X		2
Watch videos online (e.g., YouTube).		X			1

\* Reported only the two highest ranked task or activity.

Table 7. Comparisons across factors for the three top-ranked task or activity NOT experienced (over 50%).

<b>Task or Activity</b>	<b>Participating Population</b>				<b>Total</b>
	<b>F</b>	<b>M</b>	<b>U</b>	<b>R</b>	
Pay bills online	X	X	X	X	4
Check or monitor my finances or bank account	X	X	X	X	4
Take or complete an online course	X		X		2
Buy or sell items online		X		X	2