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Older Adults and Technology: Adoption and Acceptance Comes from Relationships and Encouragement from Younger Generations

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Older Adults and technology: Adoption and acceptance comes from relationships and encouragement from younger generations

Abstract:

As technology progresses, older generations are being given 'smart' devices and are adopting these devices to keep up with daily life. Stereotypes posit that the different generational groups perspectives on each other and the digital divide prohibit older generations from adopting new technologies. At the Wood Country Center on Aging located in Bowling Green Ohio, the small group communication class of Bowling Green State University teaches tablet classes once a week to interested older adults. Classes were observed using the STAM (Senior Technology and Acceptance Model), specifically the acceptance phase, over six weeks with narrative and phenomenological research methods. Observing and assisting four small groups teaching older adults different categories of smart tablets, conclusions were made on why older adults accept the technology and even come back for further classes. At the end of the project, it was found that the more positive and genuinely encouraging the students were, the more the older

adults consistently attended classes and engaged in learning. Despite rumors of barriers of an age and digital divide, social cues, the relationships made, and the environment play a part in the motivation of technological diffusion in older adult's daily life.

Introduction: The Digital Divide

There is no denying that technology is taking prevalence in society's daily life activities. Everything from e-commerce to mail is continuing to shift to the digital world. These are known as "Internet based activities" or IBAs (Larsson, Larsson-Lund, & Nilsson, 2013). With how fast-paced these activities develop for use, older adults who have not grown up with and lack experience with IBAs feel a 'digital gap' in their abilities to use and keep up with these technologies (Nilsson & Townsend, 2010).

In research conducted by Van Volkon, Stapley, and Amaturro (2014), the older population reports being frustrated with technology. Most have had less experience with touch screen devices, and are more likely to feel like innovation in the technology department is too fast paced (Larsson, Larsson-Lund, & Nilsson, 2013). However, this population also reports that they would still like technology to aid them with transportation, independent activities, and health needs. While experiencing frustration, older adults are still open to learning technologies (Van Volkon, Stapley, & Amaturro, 2014). Younger adults have used these technologies longer and more frequently (Olson et al., 2011) and as many teens (25%) own a smart tablet as adults 18-50 years old (23%) (Van Volkon, Stapley, & Amaturro, 2014). These components help the theory that age difference is the biggest indicator of technology use (570).

However, this same research indicates that older adults who do use technologies gain numerous benefits from assimilation. Older adults report that using the Internet gives them positive feelings because it can be viewed as a youthful activity, and it keeps them up-to-date and involved (560). Older adults that have an online presence are also less lonely, less depressed, and have more friends than non-users (White et al, 2002). Overall, “older adults who learn how to use computers and Internet operations are less likely to suffer from depression and loneliness, and may benefit from an improved overall life satisfaction and control” (Shapira et al. 2007).

On the reverse side of the “digital divide” debate, researchers McMurtrey, Zeltmann, Downey, and McGaughey (2011) find slight indication that the divide is diminishing (22). They argue that older adults have a variety of different technology skills, and it’s hard to collectively position them in a group of inexperienced technology users when individually they exist more on a spectrum (28). When researching why older adults use the Internet, these researchers discovered that the number one reason was to keep in touch with friends and family, followed closely by receiving health information, playing games, and keeping up to date on the news (26). This study found that while some older adults strive to be innovators in technology, some keep with tradition and don’t buy into it, and most exist in between, only a minority of older adults are comfortable with their tech skills (28). While more older adults are finding reasons to begin learning new technology, there still exists an age gap in regards to the hesitation in acceptance.

What steps does it take for an older adult to form or change an attitude in order to adopt new technologies? The TAM and STAM models of technology acceptance can

help one better understand the steps needed in order for older adults to override this “digital divide” and use technology.

The Technology Acceptance Model (TAM) and the Senior Technology Acceptance Model (STAM)

The technology acceptance model (TAM) is a step-by-step process on how someone goes about adopting a technological concept or innovation. TAM is successful due to two factors: the perceived usefulness and the perceived ease of use with the technology (Smith, 2008). Perceived usefulness is defined as recognizing the technology will enhance that person’s performance, while perceived ease of use is the degree of effort it will take to use that technology (Davis, 1989). If the technology is perceived as useful and possible for the person in question to use it independently, the person will then develop a good attitude about it and pursue behaviors that will lead to acceptance (Smith, 2008). If the technology is determined to satisfy wants or needs, the person will develop an attitude about it and eventually a behavior that determines adoption or rejection.

Under the concept of TAM, a more specific model, the Senior Technology Acceptance Model (STAM) was created in 2008 as a specific process of technology acceptance in older adults (Barnard et al, 2013). The STAM model breaks up TAM into three phases: Objectification, incorporation, and acceptance. The objectification phase consists of the intention to use the technology, where the perceived usefulness and ease of use comes into play brought about by the TAM model. The incorporation phase is the further exploration and experimentation with the technology. This phase gives the older adult a better idea of how useful the technology will be for them. The final phase is

acceptance, where the older adult will choose to assimilate and use the technology in daily life or reject it. The acceptance is accumulated by the behaviors the older adults pursue through their attitudes over this time.

The incorporation phase is a pivotal one when focusing on older adults and how they decide to accept or reject technology. It is not just about discovering the effort of usability, but also the experiences the older adult has through this exploration and experimentation period (1717). These experiences cultivate through many factors, but a factor worth studying is the “facilitating conditions” or “support” of these experiences and technology use.

In the study Larsson, Larsson-Lund, and Nilsson (2013) conducted on IBAs, they found that most older adult’s wanted to have someone’s support before they began engaging in IBAs in case they would need it, and that these older adults preferred someone outside their family circle (161). In fact, these older adults thrived from the social aspect of having support from others when engaging in IBAs because they could more easily find activities that were perceived as meaningful to them, aiding to the perceived usefulness component (160). This research concluded that “even if seniors have access to Internet at home, and a basic knowledge of IBAS, they are still hesitant to start if no one is there to support them” (164).

Even though there has been very little research done thus far about STAM and how to most effectively help older adult’s accept technology, many different technology classes are beginning to be offered in order for these older adults to get support outside the tech support world and their immediate families. This is a further look at how these technology classes can create a positive and encouraging environment that allows older

adults to have their own meaningful experiences, which leads to positive attitudes and acceptance of being able to use technology independently.

Community Outreach/ Wood Country Committee on Aging

Bowling Green State University in Bowling Green Ohio is committed to not only allowing students to excel on campus, but is often finding ways to engage them in the Bowling Green community. Dr. Kate Magsamen-Conrad created a partnership with the Wood Country Committee on Aging (WCCOA) three years ago to integrate civic-engagement learning and also make a difference for the older adults in the community. Communication 2030, an elective course titled “small group communication”, consists of a six-session project where the students work in small groups to teach a group of older adults how to use a specific smart tablet. The BGSU students are trained in ‘sensitivity’ by the WCCOA before going to the center, in order to address everything from attire and certain functions (such as touch, sight, and hearing) that slow down in older age that require more patience. The BGSU students teach the older adults every Thursday, and at the end the older adults have a graduation to celebrate their success of learning their technology.

The classes are catered to what the older adults want to learn. Usually in the first session, the BGSU students meet the older adults and ask them what they would like to do with their tablet. Answers vary from very specific concepts to everything. The BGSU students then take what the older adults want to learn and turn them into weekly lessons using a Powerpoint as a visual aid. Each class is required to assign homework so that the

older adult's practice using their tablets outside of class, and can talk about such activities in class as a review.

I was a regular student in this class in the spring of 2014, where I taught the Ipad to a group of older adults. The experience was so uplifting for me I decided to stay with the class as a peer mentor for the BGSU students, where I can help give them structure and advice for teaching, as well as helping Dr. Magsmen-Conrad observe all of the groups since all of the tablet classes are being taught at once. This has also led to my own independent study and conclusions on how the BGSU students create an environment that encourages and supports the older adults in their technology use, ultimately leading to exploration and acceptance defined by the STAM model. The students' attitudes and methods for teaching affect the perceptions of technology for the older adults, which either helps or hinders their attitudes about tablets, and therefore plays a role in whether they actually accept the technology for their own use.

The following shows my observations and conclusions from the classes I have helped mentor. Class A describes the BGSU 2030 class in the fall of 2014. Class A had an Android Galaxy class, an Ipad class, a Kindle class, and a try-it group. The try-it group sampled different tablets each week so that the group of older adults could decide which one they liked best before choosing to purchase one. Class B is the 2030 class that is currently enrolled in the spring semester of 2015. The groups have readjusted into a Kindle class, two Ipad classes, an Android Galaxy class, and a Nook class. Many of these sessions take place in different rooms in the WCCOA, but some of the classes take place in the public library next door. All of the classes are an hour long

Class A Observations

There were two groups that really stuck out in Class A, and one with an inventive idea that encouraged personalized assistance. These groups consisted of the BGSU students and older adults originally learning the Kindle, the try-it group, and the Ipad.

The Kindle group ending up being an ensemble of off-brand tablets, which presented a challenge for the BGSU students because they could not focus on functions specific to one tablet. Luckily, the group was comprised of strong leaders and personable young adults, which helped their teaching methods for the older adults. Out of all the groups in this specific semester, the atmosphere of the Kindle room was the most consistently energetic. This group was very thorough about the homework segment of their teaching. At the beginning of almost every class, the designated leader of homework would stand up and say, “So did everyone do his or her homework? Did anyone come across something different or more difficult in the task?” The group didn’t ever strictly reprimand anyone for not doing their homework, but they made it such an important segment in their lesson that the older adults were motivated to do it in order to be able to engage in that conversation. This motivated independent exploration of the tablet, resulting in increasing the perceived ease of use for the older adults.

Even though the wireless connection in the location the class was posed some challenges, the ‘teachers’ of the class never let on their frustration with it. Instead, they would shift the lesson to something that didn’t necessarily require Internet, but would still be perceived as interesting and useful to the older adults, such as the camera and camera roll. Talking in a confident and pleasant voice, not too slow or fast, made every topic exciting, and the older adults were excited to learn what ever lesson was being taught that

day. This Kindle class always had consistently good attendance, and the class got so comfortable with each other that one of the older adults brought in doughnuts for the whole class. This class created the kind of encouraging relationships that resulted in motivation for learning their tablets, no matter how confusing a concept was starting out.

The opposite occurred for the try-it group in class A. The amount of older adults who signed up for it was small to begin with, but attendance dwindled to maybe one or two older adults but the last few sessions. It is hard for a group of 6 BGSU students to cater to 3 older adults without having it turn into a personal technology support session, and often it became that. While the older adults had their specific technology questions immediately answered, they didn't get to hear any other questions their classmates had, or an opportunity to learn how to navigate the tablets by themselves. This did not help perceived usability, nor did it create an understanding on how the tablets could be useful to them. The structure of the way the BGSU taught was altered toward the end, in order for the remaining older adults to be more independent in learning tablet concepts and being able to ask questions they could bounce off one another. While seemingly awkward for the teacher-student ratio, the verbal encouragement for older adults about their independent accomplishments reinforced their abilities to be able to use the tablets efficiently. The most successfully taught class, learning about the Ipad, resulted in one of the older adults deciding to purchase an Ipad by the class graduation.

The Ipad group in Class A had the most older adult students and the most BGSU students, which can often lead to chaos. However, this group helped to combat that by creating nametags for themselves and their students. Nametags were a great idea because it made the sessions personal. Being able to address an older adult who was having

trouble or a question by name made them less afraid to admit when they were stuck, instead of denying trouble or questions and concluding the tablet was not worth using. Being able to personally congratulate an older adult for completing a task boosts their confidence and motivates them to continue exploring their tablet use outside of the class.

Class B Observations

The tablet classes for Class B are beginning to see growth in the exploration and motivation of the older adults in the use of their tablets. While the first couple classes consist more of the BGSU students learning how to structure their teaching styles to be most effective, the following weeks are about making sure the older adults understand the basic functions of their tablets so that they feel comfortable enough to use them on their own. A new concept that was brought into Class B's semester was the idea of 'tablet socials'. Tablet socials are class times that are not used to teach tablets, but instead for the BGSU students and the older adults to get to know each other on a more personal level. This was not only used to cut down on small talk that would make it's way during the actual classes, but so everyone in the class was more comfortable with each other in general.

The Kindle class in Class B is one that exemplifies how to use an environment to motivate tablet use. The older adults are very comfortable with each other, and often tell jokes throughout the class, even if they're a little self-deprecating to their expertise on their tablet. For instance, one older adult responded to his question being answered with, "Alright I get it...I might not remember, but I got it." The BGSU students still laugh with

them and politely disagree, which adds to the comfort level of the older adults being able to admit when they are completely lost.

In this Kindle class, about two-thirds of the class always completes their homework, and are excited to talk about it. The BGSU students creating paper copies of the homework might aid in the perceived usability of being able to do the homework. One example that really stuck out was in week two, when the homework was to take a picture of something and be able to find it in the camera roll. One older adult, we'll name him Sam, raised his hand and said, "Would you like to see my picture?" All the BGSU students and many of his classmates said "absolutely" and he lifted up his picture and excitedly showed it to the whole group. It was a nice snowy scene of his backyard. Almost every BGSU student made it a point to say something along the lines of "That's such a great picture Sam!" or "That's amazing!" This not only helped Sam feel accomplished that he could independently use his Kindle on his own, but many of his classmates wanted to go home and practice the camera more so that they could accomplish what Sam did. This kind of atmosphere has only increased the amount of exploration the older adults are comfortable doing during the class and at home, making the tablets not only useful for them, but something that they can actually use even after the classes are over.

A group with a different dynamic is the Android Galaxy Nook class. This class is similar to Class A's try-it group, in that they have very little older adults, but they also have a better ratio of BGSU students teaching. The older adult's in this class have no problem asking questions, but sometimes turn their tablets to their instructors as if giving up and wanting the instructors to do it for them. The instructors in this group are

extremely patient, and put emphasis on being able to do the tasks independently in order to successfully use the tablet. The instructors are also very catering to usability needs of the older adults. For instance, an older adult exclaimed, “I don’t see well” when looking at a Microsoft Powerpoint slide of a useful website. A BGSU student replied with, “let me write it down for you then so you can see it better here.” This helps the older adult become more capable of a task instead of giving up on it, which motivates them to keep going. While the dynamic is not as up beat as the louder Kindle group, there are still little ways in which the Nook group is pushing the older adults to believe they are capable of using their tablets by themselves, and all of the great things it offers them.

The other Android group, the Galaxy, uses relating as a way to motivate their older adults to use their tablets. Usually when a question is brought up to the group or a problem, the BGSU leader will reply with, “I understand exactly what you mean. I’ve had the same problem.” This eliminates potential embarrassment and makes no question ‘too stupid’. This decreases frustration and the feeling of being too dumb to catch up in the fast-paced world of technology.

Both of the Ipad groups in Class B use different dynamics in order to motivate older adults to adopt using their tablets. Ipad 2 structures their lesson plans on perceived usefulness. Concepts are introduced by using personal experiences by the BGSU student leading the class, and how it’s been useful and convenient for them or their family. Seeing a younger adult examining the usefulness of the tablet breaches a divide from the older adults by adopting the same view of usefulness. The questions in this group are also often addressed to the whole group so that the group can motivate each other to solve usability obstacles, and even when things get frustrating a lot of the instructors possess

unwavering smiles despite having to go over a concept three or four times that is second nature to them, just to make sure all of the tablet class students are comfortable.

The Ipad 1 class has a little more structure issues via the BGSU students; however, aspects of their sessions still give an encouraging environment to the older adults that affect their perceived use and usability. This group utilizes nametags similar to the Class A Ipad group, which helps personalize encouragement. The BGSU students not teaching the class also intermix themselves where the older adults are sitting, making hesitation or confusion very easy to pick up on if an older adult may be shy. There was a specific instance where a concept was being taught, and an older adult, who clearly was already familiar with the concept, mentioned if the BGSU students knew of a different feature that could be used with it. A BGSU student answered, "I had no idea. I wasn't aware of that so you taught me something!" This helps the motivation because it reminds the older adults that in many ways their instructors are learning things right along with them, so they can use their building relationship to motivate each other to understand the tablet better.

Discussion

It is clear that an encouraging environment plays quite a vital role in accepting technology for an older adult. The support that is given can either increase or dismiss an older adult's view on whether he or she will be able to use a smart tablet and find it useful. The way the BGSU students teach the class encourages exploration of the tablets, which in STAM, is vital to the attitude of actually adopting the technology as a part of daily life. Some of the older adults in these class sessions choose to come back for more

tablet classes the next semester, or they continue exploration on their own. Either way, other people play a big role in older adults' view on technology, especially in regards to themselves. Tablet classes, regardless of what age is teaching them, can fill an older adult's incorporation phase with extremely positive experiences with the technology, increasing the likelihood of acceptance.

However, this is only my experience from teaching the class as a student and then observing the change as a peer mentor. While encouragement and the environment the BGSU students provide may certainly help older adults adopt their tablets into their lives, it does not mean it is the only thing that causes adoption. It is also hard to tell the results of how class B will affect the older adults and their tablet acceptance since the classes are still currently in session. The older adults have a plethora of different technology skills coming in, and may have their own motivations for learning the tablet going into the classes. Some also may find some natural declines in aging overwhelmingly challenging for them, such as loss in touch, hearing, and seeing. More research will need to be explored to see what aspects of tablet-teaching classes are most effective for older adult learners, and what they're vital motivators are.

Conclusion

While an encouraging and supportive environment may not be the only or most important motivator for older adults to pursue technology for themselves, there is no indication that it will hinder technology acceptance for older adults. The positive experiences and relationships the tablet classes can provide will effect perceptions on usability and ease of use, resulting in a more positive attitude about the technology as a

whole. Further understanding of how older adults are best motivated to adopt new technologies will aid in diminishing any 'digital divide' and will help society progress collectively despite age differences.

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