CONNECTING GENERATIONS THROUGH TECHNOLOGY AND EDUCATION

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Abstract

The purpose of this study is to make a bridge among Generazion Z, Millenial, Y, X, and Baby Boomers by showing that they will have a huge impact on how Baby Boomers and Gen Z interact with each other especially in the classroom. Since there is almost 30 years between these two generations, so much has change in the world of technology. The students will be more advance in technology than their teachers. The main machine in all research is a researcher, or a team of researchers by using technology. In qualitative research, the researchers have a lot to do with planning the study, arranging for situations to observe, interviewing people, examining records, putting patches of ideas together, and writing reports. The instrument of this research may take the form of some application photographs, art objects, videotapes, website pages, emails, text messages, social media, or any forms of sound. The result of this is important for teachers to keep in mind because the way you learned and the things you were taught are outdated to this generation. The teachers must also learn how to use technology in the classroom or the students will become bored and uninterested in their learning. Also, the students will see no value in the information they are learning because they will view it as outdated and this generation is very hands-on wanting to figure it out for themselves.

INTRODUCTION

Maturists – The Maturists, also known as Veterans, the Traditional Generation, Silent Generation and the Greatest Generation—contains employees and retirees born between 1922 and 1943 who are continuing to lead and/or contribute to organizations or are re-entering the workforce. The Maturists boasted the first true innovators (Value Point).

Baby boomers – Baby Boomers are the result of the end of World War II, when birth rates across the world spiked. Baby Boomer is a expressive term for a person who was born between 1946 and 1964. The Baby Boomer generation makes up a significant portion of the world's population, especially in developed nations: it represents nearly 20% of the American people. Baby Boomers have had and continue to have a significant impact on the economy. As a result, they are often the focus of marketing campaigns and business plans (Investopedia).

Generation X – Sometimes referred to as the "lost" generation, this generation was the first to be exposed to daycare and divorce. Known as the generation with the lowest voting participation rate of any generation, Gen Xers were quoted by Newsweek as "the generation that dropped out without ever turning on the news or tuning in to the social issues around them (Value Point)."

Generation Y – The largest cohort since the Baby Boomers, their high numbers reflect their births as that of their parent generation. Gen Y kids are known as incredibly sophisticated, technology wise, immune to most traditional marketing and sales pitches since they've seen it all and been exposed to it all since early childhood (Value Point).

Generation Z - While we don't know much about Gen Z yet, we know a lot about the environment they are growing up in. This highly diverse environment will make the grade schools of the next generation the most diverse ever. Higher levels of technology will make significant inroads in academics allowing for customized instruction, data mining of student histories to enable pinpoint diagnostics and remediation or accelerated achievement opportunities (Schroer).

There are a number of benchmark year-round differences between one country and another about Gen Z.

The Canadian Statistics Agency, for example, defines Generation Z as a generation born between 1993 and 2011. While the McCrindle Research Center in Australia set the year of birth of Generation Z between 1995 and 2009.

In Indonesia, seeing a commercial internet presence here in 1994, it could be said that Generation Z was those born mid-1990s to

mid-2000s. Based on the BPS population census in 2010, the Generation Z population in Indonesia reached 28.8 percent.

Baby Boomers and Generation Z Comparison

Now after learning about the definition of these two generations, it is important to keep in mind there is many differences. This will have a huge impact on how Baby Boomers and Gen Z interact with each other especially in the classroom. As stated previously, since there is almost 30 years between these two generations, so much has change in the world of technology. The students will be more advance in technology than their teachers. This is important for teachers to keep in mind because the way you learned and the things you were taught are outdated to this generation. The teacher must also learn how to use technology in the classroom or the students will become bored and uninterested in their learning. Also, the students will see no value in the information they are learning because they will view it as outdated. One thing to keep in mind is Baby Boomers see the teacher as the teacher, but the Gen Z sees them as a facilitator, someone who helps to run the class because this generation wants to figure it out for themselves (Investopedia).

How Gen Z Learns

Most of the Gen Z learn by doing. This generations are very hands-on, and they must be hands-on to learn. Having a teacher just giving lectures and not allowing the students to participate in an activity, will not be an effective way to teach the class, only 12% will remember what the teacher is teaching. Also, if the teacher teaches by using the book, then only 38% of the students find it an effective way to learn. As a teacher you must customize you teaches to your students, and in today generation, it is by using hands-on activities (Schroer).

Most Helpful Tools for Learning

It is important to learn some tips to help you to understand how to best teach Generation Z. Class discussions, working through problems and study guides are the top 3 ways for this generation to learn. For these students to really understand what they are learning and to keep them interested, they must do hands-on work. They want to work through the problem themselves which will help them to figure out what they do not understand. They also to like to work together to bounce off ideas to each other to help them to understand. They learn better from their peers than they do from their teachers. Teachers help run the classroom but not give them all the answers. The students want to figure it out for themselves.

Characteristics of Gen Z

To understand Generation Z even more, here are some of their characteristics.

1. Inseparable from technology - They are always using technology. From the minute they wake up they check their phone and always checking their phone throughout the day.
2. Cannot live without internet – Since they have always had excess to internet, it has become a part of their everyday life. They are always using the internet, to get somewhere with google maps, looking up information they don't know, or just want to browse the internet.
3. Do not want to be a passive learner – As discuss before, this generation learns better by hands-on work and not just by listening.
4. Want to be a part of the learning process – They do not want to learn everything from their teachers but to figure it out for themselves.
5. Short attention span and easily get bored – These two go together. Students want to be active in the classroom so once they start to feel bored or they are just sitting there, then they will become bored and stop learning.
6. Want technology to play a role in learning process – When teaching this generation, you must always use technology in the classroom.
7. Prefer hands-on experience to listening to lectures – This topic as already been discussed before on how important it is to not just teach with lectures to this generation.

The Challenge Is

How to engage Gen Z in classroom activities? After understanding this generation, how do you teach them? From the helpful tips stated early, remember to make sure the students are figuring it out themselves. Use classroom discussion, hands-on work and study guides and group work for them to figure it out by themselves. They enjoy the challenge of figuring

it out for themselves so make sure you are always letting them. The best learning model for this generation is blended learning. Blended learning is using traditional classroom methods and combining them with online digital media. This method involves both the teacher and the student, allowing the student to have more control over time. This learning model is the best for teaching this generation because it allows for the teacher to use methods that they learned in school but apply them using technology which will better service this generation.
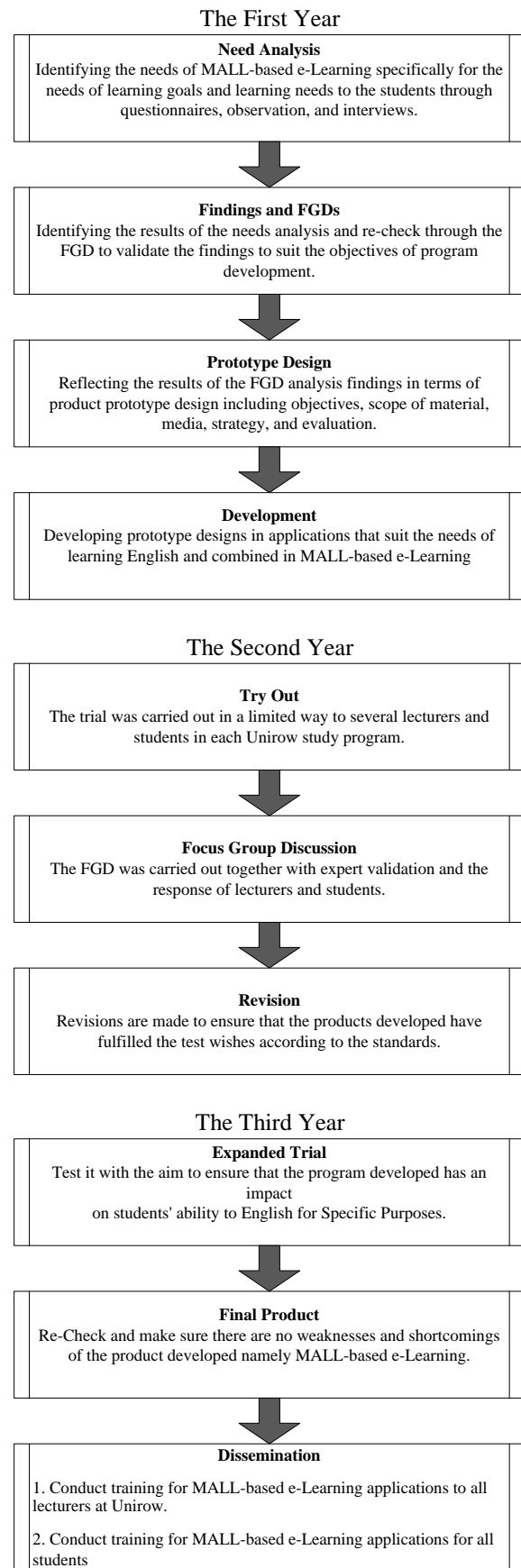
RESEARCH PURPOSES

The specific purpose of this research will be proposed to produce ICT-based English language learning models both hard copies, such as books, and soft copies in the form of online materials so that they can be applied in MALL (Mobile-Assissted Language Learning) software. The development of competency-based English learning materials for English for Specific Purposes learners is expected to improve their ability in all skills (listening, speaking, reading and writing), obtaining intellectual property rights, and can be accessed online. This needs to be considered because those who are studying our material consists of Generation Z students, because they were born after 1995, students who cannot be separated from the internet.

RESEARCH METHODOLOGY

Research is not a machine to grind out facts. The main machine in all research is a researcher, or a team of researchers by using technology (Stake, 2010: 36). In qualitative research, the humans have a lot to do, planning the study, arranging for situations to observe, interviewing people, examining records, putting patches of ideas together, writing reports. The instrument of this research may take the form of some application photographs, art objects, videotapes, website main pages, e-mails, text messages, social media text, or any forms of sound (Creswell, 2014: 240).

In order to develop teaching materials for MALL-based e-learning in the blended learning such as face to face meeting and online class, this research was chosen based on goals material development research (material developmental) Dick and Carrey (1985: 155) and Tomlin (2004). Summary of the Development Process starting from the first year until third can be summarized in the explanation as follows:

The First Year

Need Analysis
Identifying the needs of MALL-based e-Learning specifically for the needs of learning goals and learning needs to the students through questionnaires, observation, and interviews.

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Findings and FGDs
Identifying the results of the needs analysis and re-check through the FGD to validate the findings to suit the objectives of program development.

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Prototype Design
Reflecting the results of the FGD analysis findings in terms of product prototype design including objectives, scope of material, media, strategy, and evaluation.

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Development
Developing prototype designs in applications that suit the needs of learning English and combined in MALL-based e-Learning

The Second Year

Try Out
The trial was carried out in a limited way to several lecturers and students in each Unirow study program.

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Focus Group Discussion
The FGD was carried out together with expert validation and the response of lecturers and students.

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Revision
Revisions are made to ensure that the products developed have fulfilled the test wishes according to the standards.

The Third Year

Expanded Trial
Test it with the aim to ensure that the program developed has an impact on students' ability to English for Specific Purposes.

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Final Product
Re-Check and make sure there are no weaknesses and shortcomings of the product developed namely MALL-based e-Learning.

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Dissemination

1. Conduct training for MALL-based e-Learning applications to all lecturers at Unirow.

2. Conduct training for MALL-based e-Learning applications for all students

The First Year Research Design

The first year goal is to ensure that the initial identification process in product development (needs analysis) is done carefully to get results or input in determining the correct prototype. Apart from its function as a method of scientific research, Krueger & Casey (2000: 12-18) stated, FGD can also basically be used in various domains and purposes, for example (1) decision making, (2) needs assessment, (3) product development or program, (4) knowing customer satisfaction, and so on. Therefore this first phase requires the following implementation procedures: (a) Determine the competency standards and basic competencies that will be used as references in program development. Researchers analyze the learning that has been implemented, so that the identified needs of the target and learning needs that will be developed.

The researcher will conduct interviews with several chairmen of study programs in the Tuban University of Ronggolawe PGRI, which will be continued by conducting Focus Group Discussion. Some things related to the needs of the target and student learning needs about English for Academic Purpose are done using a questionnaire, especially for students by sampling; (b) After the initial data has been collected mainly regarding the needs of the target and learning needs, the researcher also conducts literature reviews, especially documents that have been owned as a foundation in the development and learning process in all exact and social study programs in UNIROW; (c) The data collected from the interview process, Focus Group Discussion, and questionnaire were then reduced to map into a prototype draft or grid needed in the development, including learning objectives (in which there are basic competency and competency standards), indicators, material, learning methods, learning media, and learning evaluation; (d) The grids and prototypes developed later are processed to be integrated with learning strategies that integrate e-Learning by optimizing MALL and adjusting to the interests of the learning process desired by learners and stakeholders.

Indicator of Success in First Year Activities
a) The identification's results of the needs carried out by collecting data through observation, interview, study literature and questionnaire in the form of four alternative

choices: strongly agree, agree, disagree and strongly disagree.
b) Grid of English for Specific Purpose learning materials based on e-learning: which consists of clear objectives, indicators, topics, materials, strategies, and evaluations.
c) The formation of product prototypes or preliminary designs that already have a form both in terms of content, media and evaluation. This prototype must consider the feasibility of the software used in a technology integration between e-Learning and classroom meeting, as a form of blended learning.

The Second Year Research Design

The initial stage in the second year step is to validate the material, media, and program to experts or what is called expert validation. There are two expertise used to validate the material as expert validation, namely stakeholders who understand content about English for Specific Purposes and experts who understand the program in this case the software developed (people who have the capacity in the field of ICT). This validation is done by giving an assessment through the assessment instrument lattice. Material quality assessment includes the following: (a) suitability of objectives, (b) attractiveness of media, (c) suitability of material, (d) completeness of material, (e) completeness of evaluation, (f) giving feedback, and (g) accuracy of language use.

For the media quality assessment grid, include: (a) design aspects in which there are instructions for use, clarity of text or letters, color quality, image quality, layout quality, audio quality, access speed, ease of access, (b) aspects of learning include interest in the material and aspects of learning motivation.

Besides that, all English for Specific Purpose lecturers are all the study program is also given an assessment instrument that refers to: (a) learning and linguistic aspects, (b) aspects of content or material, and (c) aspects of display and audio video, images, as well as flexibility in the use of design.

Indicator of the Success of Second Year Activities
The Indicators can be categorized as follows:
1. There are corrections and inputs that can be used as improvements to programs that are developed primarily in the material aspects.

2. The implementation of limited trials on some material developed through e-Learning based on MALL, especially Audio-book, which in Indonesia is still limited in number.
3. The compilation of learning books that become guidance on the programs developed are MALL-based e-Learning for English for Specific Purposes
4. There is a feedback to the implementation that is easy and fast so as to facilitate the ease of learning English for Specific Purposes more interestingly.

Third Year Research Design (program dissemination to users)

In the third year, it is expected that this will be a year of consolidation and application of MALL-based e-learning learning at Unirow in a wider trial. In this stage, the trial was carried out using the Classroon Action Research design. This experimental design is needed to ascertain whether the program developed for English language skills in English for Specific Purposes courses. By using cluster sampling, each exact and social study program was selected in a cluster one of the best classes used as a classroom action research project. After being given treatment, then it was seen whether there was an improvement in the ability of students towards learning achievement towards English for Specific Purposes.

Indicator of Success of Third Year Activities

Indicators of success in this third year can be seen in:
1. Compilation of English for Specific Purposes learning books online through International publishing officially as a form of program development developed, namely MALL-based e-Learning
2. There is an increase in the ability of students who take English for Specific Purposes after the implementation of MALL-based e-Learning
3. An understanding of the initial implementation steps on how to produce MALL-based e Learning development products, which are possible to be marketed globally.

The stages of development of ICT-based learning model refers to Plomp (1997) model include:

The first stage was preliminary assessment that involved (1) studying theories on the models of learning particularly (a) rationale of each learning model, (b) theories that supported the model, and (c) components of the model (syntax, social system, reaction principle, support systems, and instructional and companion impacts; (2) analyzing learning theories and their impacts on learning outcomes, and (3) the curriculum used in the Program of Study becoming the sample of the study.

The second stage was designing which involved (a) designing the outline of ICT-based learning model components, (b) compiling outlines of the theories supporting the model, (c) developing instructional guidance of the ICT-based learning model.

The third stage was realization/construction that consisted of designing the ICT-based model of learning Prototype I1 that was organized into 4 sections, (a) rationale of the ICT-based learning model, (b) theories supporting the ICT-based learning model, (c) components of the ICT-based learning model, and (d) guide for implementation of the ICT-based learning model. Prototype I1 is what the researchers would develop in the next development stage.

The fourth stage was testing, evaluation and revision.

Correlation between Research Product and Research Center Strategic Planning Unirow

Generally in the Research Center at Unirow have a blue print for Education, Science, Technology, Art, and Sports for Indonesian heading forward and characterized.

Generally **education** is a deliberate conscious effort being made to create an atmosphere of learning and the learning process so that learners can actively develop their potential to have a religious spiritual strength, self-control, personality, intelligence, noble character, and also the skills necessary for himself and citizens.

Science: a branch of knowledge or study dealing with a body of facts or truths systematically arranged and showing the operation of general laws: the mathematical sciences. systematic knowledge of the physical or material world gained through observation and experimentation. any of the branches of natural or physical science.

Technology: a capability given by the practical application of knowledge.

Arts: entities (artifacts or performances) intentionally endowed by their makers with a significant degree of aesthetic interest, often greatly surpassing that of most everyday objects, first appeared hundreds of thousands of years ago and exist in virtually every known human culture (Davies 2012.

Sports refers to the underlying qualities and skills that distinguish highly accomplished people.

RESEARCH ROADMAP OF UNIROW
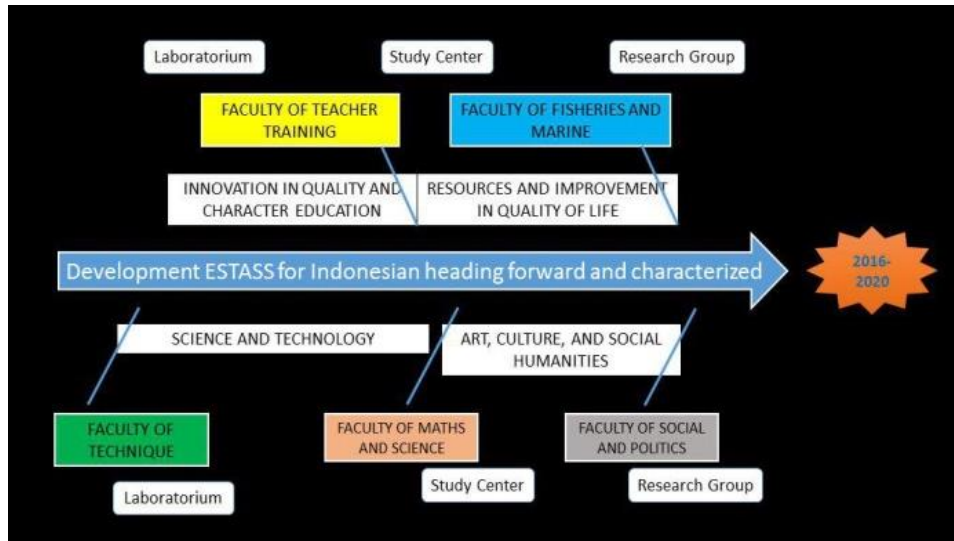
RESULT AND DISCUSSION
Blended Learning Model

Blended learning defines as no one way of learning. You use all different methods together to help the students to learn. Of course, you cannot use all of these in your classroom as once but try to develop lesson plans that always is using the blended learning to keep your students interested such as peer to peer coaching, project-based learning, game-based learning and technology integration. This model takes everything we have stated to remind you to use it in your classrooms to better teach this generation.

Educational Technology

Here is some educational technology to use in the classroom to help use blended learning and to better teach Generation Z. It is important to always use technology in the classroom. Having the material online for the students to access it as home and then use the classroom time to better practice what they have learned. If there is one thing to take away, it is to never teach your classroom with lectures, it is not effective, and your students will not learn. Use technology, let them figure it out for themselves and always try to learn from them too. See what new technology they are using to understand what is popular in their generation. If you want them to learn from you, you must connect to their level. Technology can't replace educators' role, it will assist them, and so they must master it to exist.

Generation Z and Education 4.0

Now after learning about Generation Z and how to teach them, we will define what education 4.0 is and how it aligns with industry 4.0 (Intelitek).

What is Education 4.0

In today's new world of fast changing technology and information overload, students need to be trained and not taught. Information needs to be made accessible and students need to learn how to find it rather than the teacher offering it to them in a rigid structure.

We now understand that students are not alike, do not have the same starting point, can learn and absorb different areas of focus differently and need to be guided to develop their skills rather than taught a set of predefined data points. Education 4.0 needs to align with Industry 4.0 and prepare students for the next industrial revolution which will happen in their lifetime (Intelitek).

Aligning Education 4.0 with Industry 4.0

It's time to bring education into the 21st Century. Flexible, tailor-made curriculum taught by teachers who become mentors to their students and treat them as individuals is the least that today's schools deserve. Giving the workforce of tomorrow the tools to become active lifelong learners can create a diverse and pluralistic society where every person understands and plays to their strengths, building a fair and self-sustaining model for education rather than knowledge (Intelitek).

This chart explains where education needs to be today. After learning about generation z and education 4.0, this chart allows you to see how they must work together. Teachers are the mentors; the teacher creates the learning path, but the students figure it out for themselves. Education 4.0 will help the students once they are in the work-force, so they are still using the methods they learned in the classroom (Intelitek).

Technology development is changing very fast. Research continues to develop according to the times. Differences between generations in researching with technology, especially by using the internet and the results of research must be synchronous. Previous generations needed books for reference, while generation Z preferred books online. Therefore, it is expected that the research results which are later published in the form of references or manuscripts will not only stop at the publisher or Intellectual human right, but are also expected to be produced online at google play, so that they can generate continuous income (Intelitek).

CONCLUSION

The world is always changing, and new technology is being develop. Due to this, each generation is unique and adapts to technology in different ways. As technology because more advance, the teaching in the classrooms must also correlate with the generation they are teaching to. The teachers must adapt to use methods like the blended learning method to make sure they are teaching in the most effective way for the students. Developing a strategy on how to incorporate this in the classroom is important to develop and follow. As stated early, a three-year plan on how the students will be taught using MALL-based e-learning. It is important to always make sure your teaching focuses on understanding Education 4.0 and how it connects to Industry 4.0. It is so important to understand the generation you are teaching to before stepping into the classroom. Every teacher has the power to help educate and grow the next generation to become the best.

REFERENCES

Creswell, John W. (2014). *Research Design*. California: SAGE Publications, Inc.

Davies, Stephen. (2012), *The Artful Species*, Oxford: Oxford University Press.

Intelitek. *"What Is Education 4.0?"* Intelitek, Intelitek, Inc, 11 May 2018, www.intelitek.com/what-is-education-4-0/.

Investopedia. *"Baby Boomer."* Investopedia, Investopedia, 27 Dec. 2017, www.investopedia.com/terms/b/baby_boomer.asp.

Krueger, Richard A. & Casey Mary Anne. (2015). *Focus Groups: A Practical Guide for Applied Research* 5th Edition. California: SAGE Publications, Inc.

Plomp, Tjeerd., (1997). *Educational and Training System Design*. Enschede, The Netherlands: Univercity of Twente.

Schroer, William J. *"Generations X,Y, Z and the Others."* WJSchroer, WJSchroer Company, (2017), socialmarketing.org/archives/generations-xy-z-and-the-others/.

Stake, Robert. (2010). *Qualitative Research Studying How Things Work*. New York: The Guilford Press.

Value Point. *"Understanding the Generations."* Valueoptions.com, Value Point, www.valueoptions.com/spotlight_YIW/traditional.htm.

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