Micronesian Educator

A Journal of Research & Practice on Education in Guam and Micronesia

Photograph by Carim Yanoria

Nåna *by Kisha Borja-Quichocho-Calvo*

Like the tåsa and haligi of the ancient Chamoru latte stone

so, too, does your body   maintain the shape

of the healthy   Chamoru woman.

With those   full-figured hips

features   delivered

through natural birth for generations

and with those powerful arms

reaching for the past   calling on our mañaina

you have remained strong   throughout the years

continuously inspire me   to live my culture

allow me to grow into a young   Chamoru woman myself.

Through you   I have witnessed the persistence

and endurance of my ancestors   who never failed in constructing a latte.

I gima` taotao mo`na   the house of the ancient people.

Hågu i acho` latte-ku.   You are my latte stone.

The latte stone (acho` latte) was once the foundation of Chamoru homes in the Mariana Islands. It was carved out of limestone or basalt and varied in size, measuring between three and sixteen feet in height. It contained two parts, the tasa (a cup-like shape, the top portion of the latte) and the haligi (the bottom pillar) and were organized into two rows, with three to seven latte stones per row. Today, several latte stones still stand, and there are also many remnants of them throughout the Marianas. Though Chamorus no longer use latte stones as the foundations of their homes, the latte symbolize the strength of the Chamorus and their culture as well as their resiliency in times of change.

Micronesian Educator

A Journal of Research & Practice on Education in Guam and Micronesia

Contents

EDITOR'S INTRODUCTION

Editor's Introduction

Dear readers,

Welcome to the 25th volume of the *Micronesian Educator*. As we come to the quarter of a century mark in the publication of our journal, it is time to think about future directions that we want to head towards. What the co-editors of this volume would like to see is an expansion of topics and voices from a more diverse international audience. As the Call for Submissions for Volume #26 states, our primary audience continues to be educators in Guam and Micronesia, but with the next issue, #26, we will extend our horizon of engagement to be more inclusive of (1) educators, researchers, administrators, and scholars both *within* and *outside* the discipline of education, such as those who teach in the sciences and humanities; (2) scholars and teachers in the greater Oceanic region and Asian Pacific; and (3) creative writers, essayists, and reviewers from all disciplines concerned with or knowledgeable of developments and publications that impact or involve education.

In this volume, we will capture the field of education in five research papers: two regarding teaching strategies, one which discusses the implications of action research, one which identifies students' difficulties with Japanese sounds, and one which analyzes the effectiveness of a sports education program. This volume is arranged in four sections.

Section One contains two articles about valuable teaching strategies. The first paper by Dr. Michelle Santos sheds light on teaching strategies that help to engage students more actively and successfully in learning content. The strategies focused on in her study with non-native English speaking in-service teachers on Yap were an increased use of visuals and videos for nonlinguistic representation and building background; using foldables as graphic organizers and explicit vocabulary instruction; utilizing cooperative learning and group gallery walks; and using KWL, a three-column organizer where students identify what they Know, Want to know, and have Learned in order to draw on students' prior knowledge. After implementing an abundance of strategies in her teacher preparation courses, Dr. Santos asked students to comment on the success of each strategy and whether they would implement the strategies in their own classrooms. Results point to frequent discussions and the use of visuals to be the most successful among the strategies utilized.

The second research paper by Dr. Evelyn Doman discusses another effective strategy – scaffolding. As an instructional strategy that helps to enhance content knowledge and language development for English Language Learners, Dr. Doman found that scaffolding can also be successful when integrating content with language instruction so that students can keep up with their mainstream classmates. Using the concepts of *high challenge* and *high support* (Mariani, 1991) as the underlying theory behind the current study, Dr. Doman added to the research which says that student achievement is linked to assignments that have been carefully scaffolded by the teacher. By using an experimental and control group design, participants in the experimental group that received intensive verbal scaffolding at all levels of a micro lesson outperformed participants who received minimal amounts of scaffolding.

Section Two is composed of three papers which examine participants' perceptions towards action research, Japanese sounds, and sports education programs.

Drs. James, Miller, and Sangueza discuss the impact of action research on teachers' instructional practices in the K-12 classroom by administering an online survey to 20 graduates from the M.Ed.

Secondary Education program. Action research is said to encourage teachers to examine the dynamics of their classrooms and interactions with students and then challenge existing instructional practices (Mills, 2011). Thus, James, Miller, and Sangueza collected data from elementary, middle school, and high school teachers on Guam to learn more about the consequences of their action research projects. Findings point to the success of these projects, with teachers saying that they felt empowered by action research. The teachers also frequently described how data from their action research supported their effectiveness as teachers.

Dr. Masumi Kai examines the sound perceptions and self-assessments of beginning Japanese language learners. Kai's paper looks specifically at the type of sounds that beginning learners of Japanese find to be the most difficult. Though the use of a dictation test, findings show that students became better at sound recognition as they progressed through the course, but that difficulties tended to persist in regards to four general misconceptions relating to sound: non-perception, insertion, shortening and lengthening, and others varieties.

Jeremy Dorovolomo said that large scale coach education programs that attempt to train a large number of coaches in different sports, using many course conductors, need to be evaluated to gauge its effectiveness. He therefore evaluates a sports education program called the Oceania Sport Education Program that was delivered in several countries in the Pacific Islands in order to determine the strengths of OSEP and investigate areas the program could be improved   A Nominal Group Technique (NGT) was implemented with the Oceania Sport Education Program (OSEP) Educators via email. Findings show that OSEP develops the coaching and administration knowledge and skills of participants that is worthy, is viewed as flexible and relevant, fills a gap, provides a pathway for coaches and administrators, and is being delivered by knowledgeable facilitators.

Section Three consists of two technical reports. Dean Olah provides what is basically an inventory of available educational technologies and their adoption in Guam's schools. Kusum Prakash provides access to the journal entries of students engaged in pre-service teaching in the schools of Fiji.

Section Four contains book reviews and a review essay. All of them pertain to issues that impact the lives of educators and students, such as technology, race and ethnicity, rhetorical power. Our reviewers do not see book reviewing as a lesser responsibility in the world of scholarly publishing, but as a critical mode of engagement with cutting-edge issues in education today. While critique operates under the gold standard of objectivity in book reviewing, professional expertise obligates one to take a position with regard to the book under review that both expresses one's viewpoint and confirms its practical limits.

We sincerely hope you will enjoy this volume! Please look at the *Call for Papers* for Volume 26 published in this vol. of *Micronesian Educator*, and submit your essay or research-article with us.

Best,

Dr. Evelyn Doman

Dr. Christopher Schreiner

CALL FOR SUBMISSIONS TO MICRONESIAN EDUCATOR #26
(*FANUCHÅNAN* 2019)
Deadline: October 31, 2018

Under the auspices of the School of Education at the University of Guam, the *Micronesian Educator* has published articles, essays, and reviews for 25 issues, its overall design and content undergoing a few minor changes over the years since its inception. Our primary audience continues to be educators in Guam and Micronesia, but with the next issue, #26, we will extend our horizon of engagement to be more inclusive of (1) educators, researchers, administrators, and scholars both *within* and *outside* the discipline of education, such as those who teach in the sciences and humanities; (2) scholars and teachers in the greater Oceanic region and Asian Pacific; and (3) creative writers, essayists, and reviewers from all disciplines concerned with or knowledgeable of developments and publications that impact or involve education.

Starting with Issue #26, *Micronesian Educator* will seek to include the following, depending of course on the availability and merit of submissions:

Δ RESEARCH ARTICLES IN EDUCATION

Δ ACTION RESEARCH ARTICLES BY FACULTY AND GRADUATE STUDENTS

Δ ESSAYS IN THEORY AND PHILOSOPHY OF EDUCATION

Δ TECHNICAL REPORTS

Δ SPECIAL TOPICS COORDINATED BY OUR EDITORS or GUEST EDITOR(S)

Δ BOOK REVIEWS AND REVIEW ESSAYS

Δ THE TEACHING PROFESSION (TEACHING AND ADVISING OBSERVATIONS, CONTROVERSIES, RECENT DEVELOPMENTS, PERSONAL EXPERIENCES IN TEACHING AND MENTORING)

Δ INTERVIEWS

Δ CREATIVE WRITING (POETRY, FICTION, AND PERSONAL ESSAYS pertaining to education)

NOTE:
→ *All submissions will be double-blind refereed, i.e., In other words, they will be reviewed, with the author's name removed, by two separate referees.*
→ *Research articles and Action research must be formatted in APA Style.*
→ *Essays and book reviews must be formatted in either MLA or Chicago Style.*
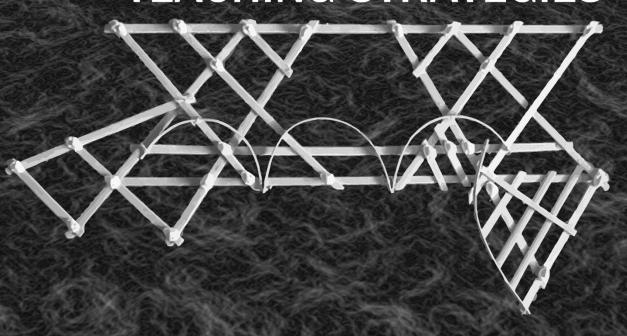
***

Send submissions in Word files by electronic attachment to the editors as follows:

Dr. Evelyn Doman: domane@triton.uog.edu

Dr. C. S. Schreiner: cschreiner@triton.uog.edu

TEACHING STRATEGIES

Engaging Literacy Strategies for Adult English Language Learners in a Teacher Preparation Program

Michelle Santos

Abstract

When working with students, typically faculty will do whatever it takes to make content relevant and accessible. This is even more important when there may be barriers to the accessibility, such as gaps in resources, in prior knowledge or even in language. Although many strategies have been researched and are said to be effective for English Language Learners' success in the classroom, it is important that assumptions are not made about specific cultures and their learning styles. This study sought to verify if certain strategies were more effective than others in making theoretical content more accessible to students. The evidence anecdotally seems to point to more opportunities for discussion and visuals provide students with opportunities for deeper understanding or more sustained knowledge. The results of this study can inform instruction in the Pacific filling the gaps or validating current practices. The variety of strategies used with students from this Pacific island and the attitudinal information can inform teachers on Guam as to what might work best in their classroom with students from this island.

Creating background knowledge, tapping into prior knowledge, providing visuals, and working in groups are common strategies in the classroom when working with students who speak languages other than English. Around the world, teachers conduct classes to teach English and many times to teach content through the medium of the English language to non-native speakers. A recent study in a teacher preparation program for in-service teachers (adult learners) was conducted on a small island in the Pacific where all participants were non-native speakers of the English language. In this unique setting, these teachers are already teaching yet are enrolled in teacher preparation courses with credits counting toward a bachelor's degree in elementary education. The researcher/instructor used evidence-based teaching strategies to meet the student learning outcomes/objectives of the college course. The in-service teachers were exposed to these strategies not only for a desire to help them be more successful in the course for which they were enrolled, but also for their future use and implementation in their own classrooms. A variety of literacy strategies were implemented to measure the effect on student learning. Literature continues to describe strategies that assist the English language learner in comprehension and success in the classroom. The literacy strategies discussed are most often implemented in a K-12 environment.

Keywords: *Teacher preparation, Literacy, Adult English language learners*

Introduction

In 2008, the National Council for Teachers of English (NCTE) published a research policy brief on English Language Learners. Noted in this report was the substantial growth of English Language Learners in the in the nation's K-12 system. More specifically, the brief stated, "ELLs are the fastest growing segment of the student population" (p. 2). Additionally noted was that diversity embedded in the term ELL. In that, we cannot use a "one-size-fits-all" approach with our students. Coleman and Goldenberg (2009) stated, "By 2025 one in four students will come from homes where a language other than English is spoken" (p.11). Currently, however the National Center for Education Statistics notes that 9.3 percent of public school students in the United States in 2013-14 were English language learners. With such a diverse population in the classroom and diverse needs of the students, effective strategies for student success are imperative. Aceves and Orosco (2014), acknowledge that teachers may not be fully prepared to meet the needs of such a diverse student population. The authors referenced Gay and Ladson-Billings stating, "Inadequate preparation can create a cultural gap between teachers and students and can limit educators' abilities to choose effective instructional practices or materials" (p. 7).

Culturally Responsive Teaching

To be more successful with students from culturally and linguistically diverse backgrounds a teacher should be culturally and linguistically responsive. Kadhir Rajagopal (2011) says, "Culturally responsive (or relevant) teaching (CRT) has been described as 'a pedagogy that empowers students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes'" (p. 20). Aceves and Orosco (2014), "found six general CRT themes [such as] instructional engagement; culture, language, and racial identity; multicultural awareness; high expectations; critical thinking; and social justice," in their review of literature supporting culturally responsive teaching (p. 8). The authors concluded that while there is not strong empirical evidence to make conclusions about the success of CRT, one cannot separate teaching and learning from culture.

Effective Strategies with ELLs

Villegas and Lucas (2007) state the role of the teacher is "to support students learning by helping them build bridges between what they already know about a topic and what they need to learn about it." Pereira and de Oliveira (2015) provide a list of instructional strategies to use with English language learners to include: providing opportunities for ELLs to communicate with other students, using multimodal strategies (such as oral and written language, use of visuals, nonverbal communication), modifying not simplifying (by asking questions, modify how your present, model the expected performance), paying attention to language (by paraphrasing, pausing, and speaking clearly), and making connections to students' language and culture (using examples that are relevant to students' culture). Hill and Flynn (2008) conclude "that teachers need to make language learning purposeful, intentional, and explicit" (p. 51). Their conclusion comes after discussion on the engagement of ELLs in learning by focusing on tiered questioning. Lydia Breiseth (N.D.) discussed three approaches to improving ELL comprehension. The strategies she discussed were building background knowledge, teaching vocabulary explicitly, and checking comprehension frequently. Coleman and Goldenberg (2010) discuss the use of sheltered instruction strategies to help ELLs better understand the content. The strategies include using visual cues, clarification, and building background knowledge that draws on students' experiences. In a separate article, Coleman and Goldenberg (Summer, 2010) note that instructional practices that teachers should learn more about include objective writing, grouping, considering the rate of speech and adding gestures, asking questions, and using visuals and graphic organizers.

The present research aimed to validate the use of desired instructional methods and strategies for use with ELLs. As discussed in the literature above, certain strategies appear frequently in different articles as successful means of increasing chances of ELL success in the classroom. The strategies focused on in this study were an increased use of visuals and videos for nonlinguistic representation and building background; using foldables as graphic organizers and explicit vocabulary instruction; utilizing cooperative learning and group gallery walks; and using KWL, a three column organizer where students identify what they Know, Want to know, and have Learned in order to draw on students' prior knowledge. Through the use of the instructional methods and strategies, the research gathered responses to the questions:

1) Did the participants find the research-based ELL strategies beneficial?
2) Will the participants utilize the strategies with their own students?
3) Were the strategies adaptable to cultural norms within the participants' schools?

Methodology

Participants in the research were 16 practicing teachers in a teacher preparation program. All sixteen participants had earned their associates degree and were working on their bachelors in elementary education. The participants were enrolled in an upper division education course. The students ranged in age from 26 to 52, with the majority of students between 30-38 years of age. Of the students, thirteen were male and three were female. Most of the students had their first English instruction in high school, while six students' English instruction began in elementary school. The class had ten students who spoke Woleaian, five who spoke Ulithian, and one who spoke Satawalese. Eight of the students had been teaching from one to five years, five students had been teaching for six to ten years, and three students had been teaching for eleven to twenty years. Of the sixteen participants, all but one indicated they taught in both English and their vernacular. One student indicated he only taught in the vernacular.

The upper division course was held Monday to Friday for two and a half hours a day for eighteen days. This course was quite text heavy and required the need to know many educational theorists and theories. Because of the type of content, the researcher ensured a variety of strategies were included daily. Students were reminded throughout the course that they would be rating and commenting on the strategies used throughout. Additionally, it was repeated that the strategies would be useful for their own classrooms and that by practicing such strategies as "students" in the classroom, they would be able to implement them with greater ease and success with their own students.

Instrumentation and Data Collection

Strategies focused on building background knowledge, teaching vocabulary explicitly, promoting comprehension, and using a variety of engagement techniques. Information on student success and affect were measured throughout the course.

Over the eighteen days, ten chapters were covered with one chapter a day and a test the following day. Strategies were embedded in each chapter presentation. Student scores were gathered on each chapter test. A future study may look to validate the success of the strategies.

At the completion of the course, students were asked to comment on the success of the strategy and whether they would implement the strategy in their own classrooms.

Results

Students enrolled in the summer session upper division course were asked to comment on the strategies employed throughout the eighteen days of the course. At the end of the course, the students were reminded of when the strategy was used and asked what their thoughts were about it.

Question number one asked for the participants' perception on the use of visuals (photos, clip art, graphs) within the presentations. All of the students in the course indicated that using visuals was beneficial to their learning. Comments gathered from participant responses related to the use of visuals were similar to the following: "I do like the pictures because it helps me understand better to see while one is explaining points." Three of the participants indicated they will deliberately use visuals in class if they have the items available to do so.

Question number two focused on the use of foldables. Participants commented that it was a fun and interesting way to keep notes. One participant said, "It helped organize our ideas and I enjoyed using them." Only two of the sixteen indicated the strategy didn't help them organize their information. One effort to use foldables for explicit vocabulary instruction didn't seem to increase student achievement in that area. One student indicated it may have helped, but he didn't have time to study. All fourteen who found the use of foldables beneficial indicated they'd like to use the strategy with their students.

All but one of the sixteen participants indicated on question three that cooperative learning was beneficial. The one student who did not feel it was beneficial indicated that he utilizes the strategy in class because students enjoy it and feels they will benefit from it more than he does. Each of the sixteen participants indicated they would use or continue to use cooperative learning with their students.

On the gallery walk, all sixteen participants felt it was a beneficial group strategy. Several participants commented that the benefit had to do with students learning from each other and that it helped to get students up and out of their seats to see what others had done. This strategy was new for most participants and most indicated a desire to implement the use of the strategy in the fall.

The final strategy used was the KWL, a three-column organizer used to tap into prior knowledge and organize new information. Of the sixteen participants, fourteen found the KWL to be beneficial. Most of the participants were familiar with it and used it with their students at home. Of the two participants who didn't like it, one felt it was too difficult to use and therefore wasn't beneficial and another indicated, "I don't like [it] very much. Actually I keep it for my study guide and it helps. I'll try it with my students." So, although he didn't like it, he indicated that it was beneficial.

Table 1 provides a summary of the information gathered from the participants relative to their perception of benefit in the course and the desire to use the strategy with their future students.

Participants were asked to identify which strategy was their favorite and if they felt if it may be related to their cultural upbringing. The one participant who preferred the visuals indicated that culturally, when they want to understand something, they must listen and pay attention as well as watch and process the information they see. Of the five participants who indicated that cooperative learning was a favorite one participant said that in his culture people work cooperatively on activities and learn at the same time. Another indicated that cooperative learning is important because their culture is looking for cooperation. Table 2 displays information gathered on the participants' favorite strategy and the perceived relationship to their culture.

Table 1 Participant perception of benefits

Strategy	Benefit to Participant		Future Use with Students*	
	Yes	No	Yes	No
Visuals	100%		19%	
Foldables	88%	12%	88%	
Cooperative Learning	94%	6%	100%	
Gallery Walks	100%		100%	
KWL	88%	12%	94%	6%

* Some participants chose not to respond to that part of the question.

Table 2 Participant favorites

Strategy	Favorite (N=13)*	Cultural Relationship
Visuals	8%	8%
Foldables		
Shutter Fold – Vocabulary		
Layered Book – Erikson		
Three Flap – Piaget		
Cooperative Learning	38%	23%
Gallery Walks		
KWL	8%	
Lecture**	46%	

* - three students did not respond to this question.
** not actually one of the options, but was a response on the questionnaire

Although test scores were gathered throughout, the scores were not the sole determinant of the grade in the course. The professional participation in the course, presentations, and case study analyses contributed to the final grade. The test scores, presented in Table 3 below, show a mixed level of performance with consistently better performance on the final four chapters. The original intent of the research was not to assess the overall effectiveness of each of the strategies, this evidence however, anecdotally seems to point to more opportunities for discussion and visuals provides students with opportunities for deeper understanding or more sustained knowledge. However, it is important to note that although the information is presented, no conclusions can be made because variables were not tested. The results could easily be related to the relationship developed between the participants and the faculty member, the use of more culturally relevant examples because of a greater knowledge about the participants in the course, or even a greater comfort level from the students with the test type and expectations.

Table 3 Pass rate on tests

Chpt.	2	3	4	5	6	7	10	11	12	13
Pass	63%	12%	81%	81%	63%	56%	69%	75%	88%	100%
Fail	37%	88%	19%	19%	37%	44%	31%	25%	12%	

*Passing score is 60% or better

Table 4 lists the strategies employed by the faculty member as each chapter was presented. Not included were the participant presentations on topics embedded in each chapter. Also, the occurrences of organic discussion that may have developed based on the content discussed were not specifically noted.

Table 4 Chapters and strategies utilized

Chapter	Strategy Employed
Chapter 2	Foldables
Chapter 3	KWL, Video, Discussion
Chapter 4	Think Pair Share, Foldables
Chapter 5	discussion
Chapter 6	KWL
Chapter 7	Gallery Walk (Encoding) foldables
Chapter 10	Cooperative Learning (Video), less text more pictures
Chapter 11	Cooperative Learning: Think Pair Share Video, less text more pictures
Chapter 12	KWL, gallery walk ,Video,
Chapter 13	Cooperative Learning, Video, Discussion

Discussion

The results of this study can inform instruction in the Pacific filling the gaps or validating current practices. The variety of strategies used with students from this collection of Pacific islands and the attitudinal information can inform teachers on Guam as to what might work best in their classroom with students from these islands. Further study on the effectiveness of the strategies utilizing more of an action research method in the classroom may result in stronger conclusions about effective strategies to use. Additionally, a more in-depth study on the culture and observations within the classrooms of the participants might give more insight on cultural norms related to strategy effectiveness.

Note:

Yap State, located in the Caroline Islands in the Western Pacific Ocean, extends to the South and East over 500 miles. Yap state is made up of four main islands and various outer or neighboring islands. The neighboring islands are atolls named Eauripik, Elato, Faraulep, Gaferut, Ifalik, Lamotrek, Ngulu, Olimarao, Piagailoe (West Fayu), Pikelot, Sorol, Ulithi, and Woleai, as well as the islands of Fais and Satawal.

References

Aceves, T & Orosco, M. (2014) Culturally Responsive Teaching. (Doc. No IC-2) Retrieved from University of Florida. Collaboration for Effective Educator, Development, Accountability, and Reform Center website: http://ceedar.education.ufl.edu/tools/innovations-configurations/

Birckbichler, D. (2001). Classroom materials for second-language proficiency. *Theory Into Practice*. Vol XXVI, Number 4

Breiseth, L. (N.D.). Reading comprehension strategies for English language learners. Retrieved from: www.ascd.org/ascd-express/vol5/511-breiseth.aspx (accessed 6/9/14)

Coleman, R. & Goldenberg, C. (2010). What does research say about effective practices for English learners? Part II: Academic language proficiency. *Kappa Delta Pi Record* 46 (2): 60-65.

Coleman, R. & Goldenberg, C. (2010). What does research say about effective practices for English learners? Part IV: Models for schools and districts. *Kappa Delta Pi Record* 46 (4): 156-163.

Hill. J & Flynn, K. (2008). Asking the right questions. *National Staff Development Council* Vol 29. No. 1 Retrieved from: www.nsdc.org

National Center for Education Statistics, (August 6, 2016) Fast Facts: Retrieved from https://nces.ed.gov/fastfacts/display.asp?id=96

Pereira, N. & de Oliveira, L. (2015). Meeting the linguistic needs of high-potential English language learners: What teachers need to know. *Teaching Exceptional Children*. Vol. 47 No. 4 pp. 208-215.

Rajagopal, K. (2011). Create success! Unlocking the potential for urban students. *ASCD*, Alexandra, VA

Villegas, A & Lucas, T. (2007). The culturally responsive teacher. *Educational Leadership.* March 2007, 28-33

The Effects of Scaffolding on the Achievement of Pre-service Teachers Who Speak English as a Second Language

Evelyn Doman

Abstract

Scaffolding is an effective instructional strategy that helps to enhance content knowledge and language development. Scaffolding can take place in a number of different ways in order to provide a supportive environment for English Language Learners (ELLs). Although it can focus on tasks that promote literacy and promote students' language proficiencies, scaffolding is most successful when integrating content with language instruction so that students can keep up with their mainstream classmates. Using the concepts of *high challenge* and *high support* (Mariani, 1991) as the underlying theory behind the current study, research is provided which shows that student achievement is linked to assignments that have been carefully scaffolded by the teacher. By using an experimental and control group design, participants in the experimental group that received intensive verbal scaffolding at all levels of a micro lesson outperformed participants who received minimal amounts of scaffolding. Implications of the study include using verbal scaffolding as a constructive alternative to modifying the curriculum for ELLs in teacher certification programs.

Keywords: *Scaffolding, English language learners, Student achievement*

Introduction

It is estimated that there are over 4.6 million English Language Learners (ELLs) currently in the United States (NCES, 2017). This number accounts for almost 10% of the national population. On Guam, ELLs make up more than 20% of the total student population (U.S. Dept. of Ed., 2007), and this number is growing larger each year. In order to satisfy the needs of this population, educators are struggling with ways in which to help students to best achieve academic success. Professional development activities which train teachers in strategies to assist ELLs on the island are on the rise, and there is a greater need for bilingual teachers who can assist ELLs who enter the mainstream English-language classroom with little to no support outside.

There are a number of strategies which can be used to support the language and academic development of ELLs. In recent years, Robert Marzano (Marzano, Pickering, & Pollock, 2001) and John Hattie (2009) have determined a list of strategies that make the biggest differences in achieve successful results from students. Eight of the key strategies that both researchers agree on include: maintaining a clear focus on the lesson, explicit teaching, engaging students in content, providing feedback, exposing students to information repeatedly, having students apply their knowledge, doing collaborative work, and

building students' self-efficacy (Killian, 2015). What appears to be missing from this list, though, is the need to provide students with a safety net – a scaffold – when it comes to instruction.

In education, scaffolding is by definition "a range of instructional techniques used to move students progressively towards stronger understanding, and ultimately, greater independence in the learning process" (Glossary, 2015). Simply put, scaffolding is a support system which helps students to reach higher levels of comprehension that they might not have been able to do without assistance. As a supportive strategy, it is gradually removed once students can handle the content knowledge by themselves. As a student-centered practice, scaffolding allows students to participate more fully in the classroom as they move towards greater amounts of autonomy and collaboration.

Scaffolding has its roots in Social Constructivism, most particularly in Vgotsky's zone of proximal development (ZPD) (Ygotsky, 1978).   The ZPD is defined as: "The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers" (Vgotsky, 1978, p. 86).

Within the ZPD, students are able to master concepts that they cannot understand on their own under the guidance of teachers or by collaborating with peers. Scaffolding is one of the main techniques which lead students into the ZPD. Although Vgotsky never used the term *scaffolding* as such, he supported the idea that learners learn most productively with the aid in the ZPD, where they can operate first with adapted assistance until they can progressively function more independently.

Literature Review
In order to scaffold student learning, it is important to find the appropriate level of support. Mariani (1997) underlined the concepts of *high challenge* and *high support* in scaffolding in order to engage students in tasks that are demanding for them, that challenge their capacity, but where the appropriate support is provided to guide in the process. If there is highly challenging task but a low amount of support, students may feel overwhelmed. Oppositely, if there is unchallenging task with a high amount of support, students might feel bored or unmotivated to complete the tasks.

The concept of scaffolding has been interpreted differently by various researchers. Hammond and Gibbons (2005) said that scaffolding involved two levels of support: *designed-in* and *interactional contingent*. Designed-in scaffolding takes place when there is a planned selection and sequencing of tasks that are built into the lesson to help students move forward in the learning process. Contingent scaffolding occurs when teachers offer assistance (recapping, recasting, increasing prospectiveness, etc.), as need arises in the classroom either individually or in groups.

More recently, Van de Pol, Volman and Beishuizen (2010) have further contributed to an understanding of scaffolding by identifying the type of support that is needed: *contingent, faded,* and aimed at the *transfer of responsibility*. Contingent support represents support that teachers provide for the students' understandings.   Fading involves decreased support that teachers provide while the autonomy to learn on their own is transferred to the students.

Scaffolding practice can take different forms and can be addressed in several ways in order to provide a supportive learning environment. Although it can focus on basic literacy tasks and language skills, when content and language are integrated in the lessons, a more positive and constructive

alternative is provided (Hammond, 2001). That is why researchers working in content-based language instruction have advocated the use of scaffolding to develop subject content and language development, quite often to the whole class (Hammond, 2001).

English language learners (ELLs) may need more scaffolding than mainstream students. It is essential that the concepts embedded in the subject content are expressed clearly for ELLs in order for them to learn the subject as such, while at the same time promoting their cognitive development (Bruna, Vann & Perales Escudero, 2007). One way of scaffolding content is by including language objectives, lesson objectives that are specifically designed to promote students' reading, writing, listening, and speaking skills (Echevarria, Vogt, & Short, 2004). Implementing language objectives in content instruction can be a powerful first step to ensure that ELLs can still have access to the content even if they are not fully proficient in the language (Pawan, 2008). However, it is important that language objectives do not consist solely of the simplification of academic vocabulary. Although focusing on difficult discipline-specific vocabulary may make content easier to grasp for ELLs, it may compromise cognitive development (Bruna, Vann & Perales Escudero, 2007). Bruna, Vann & Perales Escudero (2007) referred to the tension that exists between having students talk about their subject content and then to apply their subject content (in their case, science) as a "didactic tension". When teachers focus solely on simplifying vocabulary, then often end up simplifying the application of the content as well, which results in below-grade learning experiences for ELLs. Vocabulary-focused academic language instruction may deprive ELLs of "the input and output opportunities they need to develop full proficiency in the language of science and, moreover, its habits of mind" (Bruna, Vann & Perales Escudero, 2007: 52). Therefore, other types of scaffolding are called for when teaching content to ELLs.

It is hypothesized that given the notice of high challenge and high support (Mariana, 1997) as the basic theory behind the current study that all students, including ELLs, should perform well if cognitively challenged yet linguistically supported. When students are given the opportunities to think critically with the proper amount of scaffolding, it is presumed that they will engage more with the content and be better equipped to meet the objectives of the lesson.

There are three main types of scaffolding techniques which help student to move beyond their current knowledge levels in order to grasp new content. According to Cammarata (2005), there are three main types of scaffolding: verbal scaffolding, procedural scaffolding, and instructional scaffolding. Verbal scaffolding includes examples like paraphrasing, using think-alouds, reinforcing vocabulary, asking questions addressing Bloom's Taxonomy (1956), using synonyms/antonyms, and providing corrective feedback (Echevarria, Vogt, & Short, 2004). Procedural scaffolding includes the following: modeling, using group instruction, orienting students' to the class resources, utilizing process writing, incorporating jigsaw readings, and using role play and simulations (Fortune, 2004). Meanwhile, instructional scaffolding might include the use of graphic organizers, word walls, visuals and manipulatives (Fortune, 2004). The current study will focus on the role of verbal feedback in helping ELLs become more successful in a mainstream teacher education program.

One important form of verbal scaffolding is the use of self-talk and parallel talk. Self-talk occurs when the teacher describes his/her own actions, while parallel talk occurs when the teacher describes the students' actions. Both are aimed at having students to notice the language that is involved in the actions and to become more aware of language input involved in performing a task. While self-/parallel talk have been described most in first language acquisition as a strategy to develop parent and child relationships (Pianta, La Paro, & Hamre, 2008), it is useful in second language acquisition as a tool for developing

language awareness. For students who speak English as a second language, self-talk and parallel talk can help to increase exposure to specific language concepts and usages. For pre-service teachers who speak English as a second language, self-/parallel talk might include the exposure to teaching jargon so that these terms become more familiar to them. This extended exposure to terms will help the pre-service teacher to recognize the gaps between their own language and the proper communicative environment. Repetition, along with encouragement, will show the pre-service teachers the importance of understanding the terms associated with teaching.

Because the use of verbal scaffolds for ELLs in the mainstream teacher preparation classroom is an area that is under-researched, this study is significant in filling the gap in the literature. The following research questions are addressed in this study:

1. Do ELLs in mainstream teacher preparation programs perform better on assignments when provided with verbal scaffolds?
2. What types of verbal scaffolding work best for ELLs in mainstream teacher preparation programs?

Methodology
Background of Study
The current study is an investigation into the use of verbal scaffolding techniques in methods courses for undergraduate pre-service elementary teachers at a university on Guam. In particular, the study looks at the effects of verbal scaffolding on achievement levels and beliefs about achievement of pre-service elementary school teachers who speak English as a second language. The study was administered over two semesters in four different courses: a teaching strategies course, social studies methods course, language arts methods course, and second language teaching methods course. In all of these courses, students were introduced to methods and strategies for successfully teaching in public elementary schools on Guam. A wide range of group projects and demonstration lessons were requirements for all of the courses. The key assessment for all of the courses was a 15-minute mini-lesson executed in class.

For this study, two classes were used for the control group: strategies and social studies methods. The remaining two classes – language arts methods and second language teaching methods – formed the experimental groups. Although there were 16-25 students registered for all four of the classes, the focus of the study was on the five students who spoke English as a second language. Two participants were in the control group, and three were in the experimental group.

Participants
Five pre-service elementary school teachers who spoke English as a second language were chosen to participate in this study. The students were all female and ranged from 21-28 years of age. All of the participants were from the neighboring Micronesian Islands and the Philippines, with two from the island of Chuuk, one from Palau, and two from the Philippines. Based on an informal diagnostic interview about their reasons for wanting to become a teacher, the researcher of this study would place all of the participants' English language proficiencies at the high-intermediate/low advanced levels. The average length of time that the participants had been on Guam was 5.5 years prior to the study.

At the time of this study, participants were all year three students completing an initial teacher certification program in elementary education. For their third year of study in the School of Education, they were required to complete strategies and methods courses in social studies, language arts,

mathematics, science, reading, and physical education/health. After completion of the methods courses, the participants would then complete student teaching requirements within the public school system. See Table 1 for more information about the participants.

Table 1 Participants

Name	Gender	Nationality	Group	Class
Peacelyn	Female	Chuukese	Experimental	Language arts methods
Keana	Female	Palaun	Experimental	Second language methods
Sirena	Female	Filipina	Experimental	Second language methods
Tasi	Female	Chuukese	Control	Strategies
Jovani	Female	Filipina	Control	Social studies methods

Although of the participants were ELLs, they studied in a mainstream class, and they were expected to participate in full content instruction of all key curriculum areas, including writing and delivering lesson plans which followed local public school standards as well as national Common Core standards. Special accommodations were not made for them despite any deficiencies that they had in the English language.

Data Collection

This study used a mixed methods approach. There were three forms of data collection for this study: participants' written reflections, grades on assignments, and teacher observations. Participants wrote written reflections during the course of two semesters in bi-weekly action logs, Moodle forum discussions, and in end-of-the-semester reflection papers. An example of the action log template can be seen in Appendix A. In the weekly action logs, participants were asked to self-evaluate themselves on a scale of 1-5, with five being the highest, in five areas:

1. on time
2. homework done
3. ask and answer questions
4. work with classmates
5. mobile phone is not used in class

Then, they were expected to comment on whether or not they achieved the goals of the week's lesson, providing examples of activities that might have helped or hindered their successes. Each participant completed a total of 6-8 action logs for each course in any given semester of the study. The action logs were not graded, but completion of them did help to inform a general grade for participation.

Moodle forum discussions also provided a venue for students to reflect on their success on tasks. In Moodle forum discussions, participants could reflect on various assignments, focusing on the particularly usefulness or difficulty/ease of various parts of the assignment. Over a course of one semester, participants responded to an average of 5 Moodle forums which were not graded but which contributed to an overall participation grade.

Finally, each participant completed an end-of-the-semester reflective essay. In the reflective essay, they could comment on various assignments and how well they believed that they performed on the assignments. The reflections were 10% of the course grades, and they were graded according to a pre-determined rubric (See Appendix B).

Using Glaser and Strauss's Grounded Theory, all of the reflections – action logs, Moodle forums, and reflective essays - were coded for common themes among participants. Guided by Kelle & Kluge's 1999 principles for "What is a good code?", the following three considerations were kept in mind: 1) coding was precise; 2) coding enabled a large part of the data to be subsumed under a code; and 3) the codes were relevant to the research question. Beginning with a collection of data, the data was then input into NVivo, where the repetition of common words, phrases, and ideas related to scaffolding or representative of an understanding of content that resulted from scaffolding were tagged with codes, reviewed, grouped and then categorized. Codes which were not commonly identified with NVivo were collapsed or eliminated. Initial coding led to 6-10 codes being identified for each of the participants in the experimental group. There were no counts of verbal scaffolds among the reflections for the control group, resulting in null codes for them. Then, the codes of the experimental group were compared, resulting in a total of 6 categories that were common amongst all participants in the experimental group. The codes are discussed in the following sections.

The grades on the assignments and the teacher observations served to triangulate the conclusions formed from the reflections.

As the teacher/researcher of the current study, I kept detailed field notes of my observations of the ELLs as they engaged in all levels of pair and group work, as well as individual work. Most of the assignments for the four methods courses in this study were collaborative in nature. Various aspects of group and pair work were utilized, with some distinct assignments in each of the courses. For example, in the Language Arts Methods course, students engaged in a literature circle where they read the Alchemist book (Paulo Coelho) together in small chunks each week and then analyzed and evaluated the content in those pages through rotating group roles (such as a discussion director, word wizard, artsy artist, savvy summarizer, and cool connector). In the Second Language Methods class, the students often worked in groups comparing and contrasting different teaching methods (such as the Grammar-Translation Method and the Audio Lingual Method), and were graded on a formal discussion that they had on a random question among a list of pre-determined questions about the methods. However, the assignment that was common among all four methods courses was the delivery of a lesson plan, either with a group, partner, or individually. Not only were students graded on the execution of their lessons which were delivered in front of their classmates, but they were also observed in the planning stages.

Results
Reflections
Three sources of data were gathered for determining students' perceptions of the effectiveness of various verbal scaffolding strategies. Coding participants' reflections resulted in the identification of the themes presented in Table 2. In the reflections of the control group, there were no counts of verbal scaffolding being used.

Grades on Assignments
For this study, two classes were used for the control group: strategies and social studies methods. The remaining two classes – language arts methods and second language teaching methods – formed the experimental groups.

Table 2 Types and frequency of verbal scaffolds mentioned in reflections of experimental group

Scaffold type	Example	Frequency
Paraphrasing	It helps when the teacher explains difficult concepts into easier words.	=
Using "think-alouds"	I like being able to read and think about my thought processes with a partner and in front of the group as I try to interpret new information.	=
Reinforcing definitions	There are a lot of new vocabulary words used in this class, and we get ample opportunities to use the new words in our assignments.	-
Asking HOTS questions	It's important to think critically, and I like it when the teacher asks us to evaluate or critique various teaching methods.	X
Use of synonyms/antonyms	I don't have to use a dictionary because the teacher often tells us words that have the same meaning or the opposite meaning.	-
Self-talk/Parallel-talk	The teacher explains in details what she is doing, and she asks me to explain what I am doing. For example, in our literature circles, I tell her that I am the artsy artist and I am showing my drawing to my groupmates and explaining the reasons why I drew this.	X

X = 10–20 instances; = four to nine instances; - fewer than four instances.

Table 3 Grades of participants

Participant	Group	Key Assignment	Grade (percentage)
Peacelyn	Experimental	Group Big Book/Video/Lesson	100
Keana	Experimental	Group Lesson	90
Sirena	Experimental	Group Lesson	95
Tasi	Control	Group Presentation on Unit	90
Jovani	Control	Group Lesson	85

The mean score for participants in the experimental group was 95 (n=3), and the mean score for participants in the control group was 87.5 (n=2).

Teacher Observations

Results from the teacher observations showed that students in the experimental groups, with the help of verbal scaffolding by the teacher, were more confident in their group work and engaged with their partners as equal and active contributors to the lesson.

One excerpt from the field notes include:

Keana has taken a lead in developing a lesson for second grade science on the water cycle. She appears confident in how she plans to differentiate the lesson for second language students as she has early on determined a list of accommodations for them, including a worksheet that she created herself. She plans to use a dance to engage all learners, and will have the ELLs pair with the English as a L1 students to dance in front of the group.

As a student in the Second Language Teaching Methods course, Keana bloomed, and her level of participation and engagement with classmates and with the content could not be distinguished from her native English speaking classmates. Keana provided feedback to her partners in a professional manner, and she received feedback easily, without getting defensive.

A second example can be seen in Sirena's use of self-talk/parallel talk when she was interacting with her group mates on the lesson plan for the key assignment. Notes include:

> Sirena is looking for graphic organizers to use in her group lesson plan, and she is talking through the process with her groupmates. She is telling them which types of graphic organizers she finds, and what she thinks of each of them, vocalizing her thought processes and actions at the same time. This seems to get her partners more involved in the process as well.

Through self-talk/parallel talk being modeled by the teacher/researcher, Sirena was able to copy this teaching technique and to embed it into her own teaching/learning.

Discussion

RQ1. Do ELLs in mainstream teacher preparation programs perform better on assignments when provided with verbal scaffolds?

The answer to RQ1 is positive; ELLs in mainstream teacher preparation programs do perform better on assignments when provided with verbal scaffolds. Grades and teacher observations of the experimental group who received intensive amounts of verbal scaffolding show that they performed significantly better than their peers in the control group who received little to no verbal scaffolding. As seen in Table 3, the mean score on the group lesson for participants in the experimental group was 95% (n=3), and the mean score for participants in the control group was 87.5% (n=2), showing a significant difference of 7.5 points.

Teacher observations of students in the experimental and control groups support the findings above, as students in the experimental groups were more actively engaged with their classmates and with the classroom content than students in the control groups.

In the reflective writings, students in the control group never mentioned verbal scaffolds as a key to their understanding of the materials since verbal scaffolds were rarely given, and the reason for their lower performance might be based on the absence of these types of scaffolding activities. Although the goal for not using verbal scaffolds in the control class was to treat the ELLs the same as their native English-speaking classmates (that is, with no accommodations of any sort), the lack of verbal scaffolding put them at a disadvantage. They did not perform as well as their peers who received verbal scaffolding.

RQ2. What types of verbal scaffolding work best for ELLs in mainstream teacher preparation programs?

As can be seen in Table 2, the types of verbal scaffolds that ELLs in the class saw as most beneficial included asking higher order thinking skills (HOTS) questions and using self-talk/parallel talk as a teaching method. As Mariani (1997) said that levels of *high challenge* and *high support* in scaffolding are necessary in order to induce student learning, the results of this study showed that the more challenged students were, the higher their achievement levels were.

The results of this study point to the conclusion that adult ELLs in higher education, particularly those in teacher preparation programs, do not necessarily value the use of defining vocabulary or providing synonyms or antonyms for new vocabulary words. These results are consistent with those of Bruna, Vann & Perales Escudero (2007) who believed that while focusing on difficult discipline-specific vocabulary may make content easier to grasp for ELLs, it may compromise cognitive development. In the case of pre-service teachers in an elementary education on Guam, the use of simplified definitions or synonyms and antonyms did not seem to help them to learn content in their methods courses. The reason behind this phenomena might be the advanced levels of language proficiencies that the ELLs in the current study had already acquired, and it might also be that making actions explicit through self-talk/parallel talk might make the participants more aware of the connection between the language and the content than simply providing rudimentary definitions to difficult vocabulary words.

The results showing that paraphrasing and using "think alouds" can be useful for ELLs, although not as useful as HOTS questioning and self-talk/parallel talk, are also consistent with those of Hammond and Gibbons (2005) who found that teachers offering assistance through the verbal scaffolds of recapping and recasting is helpful. As Hammond (2001) found, integrating content and language skills product a constructive alternative for ELLs in the mainstream classroom.

Conclusions and Implications

In scaffolding instruction, a more knowledgeable person – this case, the teacher - provides scaffolds or supports to facilitate the learner's development. The scaffolds facilitate a student's ability to build on prior knowledge and internalize new information. The activities provided in scaffolding instruction are just beyond the level of what the learner can do alone. The more capable other provides the scaffolds so that the learner can accomplish (with assistance) the tasks that he or she could otherwise not complete, thus helping the learner through the ZPD (Vgotsky, 1978).

Scaffolds should be temporary frameworks that build on acknowledged student strengths. Scaffolds used to support successful learning need to be designed with a specific task in mind. By integrating language and content objectives, scaffolds should take into consideration what the students need to learn, how they will go about learning it, and ways to make the learning process successful. Even though scaffolds take time to set up, they are worth it in the long run.

When working with ELLs in the mainstream classroom, modifications of assignments or assessments may not be possible. One alternative to making modifications is carefully scaffolding the assignments, particularly verbal scaffolds. Verbal scaffolds can range from simplifying concepts and vocabulary word, to paraphrasing content, to addressing the higher order thinking skills of Bloom's Taxonomy (1956).

The current study investigated the effects of verbal scaffolds on English Language Learners in a pre-service elementary teacher training program. Findings from the current research, although limited in the number of participants, point the fact that verbal scaffolding can be successful for ELLs who study alongside English as first language students in mainstream education courses. Most crucial among the various verbal scaffolding were the use of questions that addressed the higher order thinking skills as well as self-talk/parallel talk protocols. It is hoped that these two teaching techniques be utilized more often in education courses that include ELLs.

References

Bloom, B.S. (Ed.) (1956). *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain*. New York: David McKay Co. Inc.

Bruna, R., Vann, R., & Perales-Escudero, M. (2007). What's language got to do with it?: A case study of academic language instruction in a high school 'English Learner Science' classroom. *Journal of English for Academic Purposes, 6*, 36-54.

Cammarata, L., & Bartolini, M.C. (2005, February). Instructional scaffolding with graphic organizers. *ACIE Newsletter, 8*(2), 1-12.

Echevarria, J., Vogt, M., & Short, D.J. (2004). *Making content comprehensible for English learners: The SIOP Model* (2nd ed.). Boston, MA: Pearson Education, Inc.

Fortune,   T.   (2004).   Retrieved   on   April   22,   2017,   from http://carla.umn.edu/cobaltt/modules/strategies/scaffolding_verbal.html

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago: Aldine Pub. Co.

Glossary   of   Educational   Reform.   (2015).   Retrieved   on   April   18,   2017,   from http://edglossary.org/scaffolding/

Hammond, J. (2001). Scaffolding and language. In J. Hammond (Ed.), *Scaffolding: Teaching and learning in language and literacy education* (pp. 15-30). Marrickville, NSW, Primary English Teaching Association.

Hammond, J., & Gibbons, P. (2005). Putting scaffolding to work: The contribution of scaffolding in articulating ESL education. *Prospect, 20*, 6-30.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London: Routledge.

Kelle, U., & Kluge, S. (1999). *Vom Einzelfall zum Typus. Fallvergleich und Fallkontrastierung in der qualitativen Sozialforschung.* Opladen: Leske und Budrich, retrieved on April 28, 2017 from, http://euroac.ffri.hr/wp-content/uploads/2011/07/Data-Analysis_Coding.pdf

Killian, S. (2015). 8 strategies Robert Marzano and John Hattie agree on. Retrieved on April 18, 2017, from http://www.evidencebasedteaching.org.au/robert-marzano-vs-john-hattie/

Mariani, L. (1997). Teacher support and teacher challenge in promoting learning autonomy. *Perspectives, 23*(2), Retrieved April 22, 2017 from http://www.learningpaths.org/papers/papersupport.htm

Marzano, R.J., Pickering, D., & Pollock, J.E. (2001). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Alexandria, VA: Association for Supervision and Curriculum Development.

National   Center   for   Education   Statistics.   (2017).   Retrieved   on   April   18,   2017,   from https://nces.ed.gov/programs/coe/indicator_cgf.asp

Pawan, F. (2008). Content-area teachers and scaffolded instruction for English language learners. *Teaching and Teacher Education, 24*, 1450-1462.

Pianta, R., La Paro, K., & Hamre, B. (2008) Classroom Assessment Scoring System Manual Pre-K. Paul H. Brookes Publishing Co, Baltimore, MD.

U.S. Department of Education. (2007). English language proficiency assessment in the Pacific Region. Retrieved on April 18, 2017, from http://files.eric.ed.gov/fulltext/ED539201.pdf

Van de Pol, J., Volman, M., & Beishuizen, J.J. (2010). Scaffolding in teacher-student interaction: A decade of research. *Educational Psychology Review, 22*, 271-296.

Vgotsky, L. (1978). Mind in society: The development of higher psychological processes. Cambridge, MA: Harvard University Press.

Appendix A: Action log template

Date: Participation: (Target)   %
Partner: (Actual)   %

<u>Self-evaluation</u> **(1-5, with 5 being the best)**

1. on time
2. homework done
3. ask and answer questions
4. work with classmates
5. mobile phone is not used in class

<u>Comments</u>

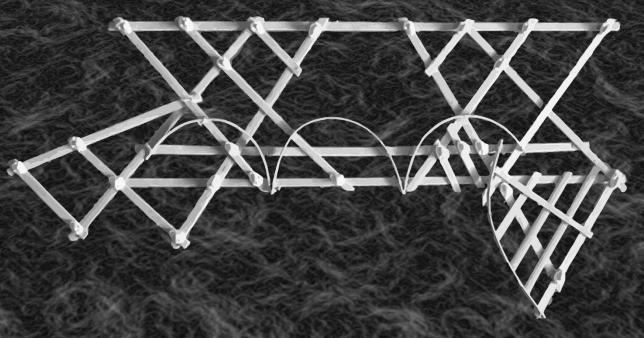**Appendix B: Rubric for End-of-the-Semester Reflective Essays**

Criteria	Superior 4	Sufficient 3	Minimal 2	Beginning 1
Depth of Reflection	Response demonstrates an in-depth reflection on, and personalization of, the theories, concepts, and/or strategies presented in the course materials to date. Viewpoints and interpretations are insightful and well supported. Clear, detailed examples are provided, as applicable.	Response demonstrates a general reflection on, and personalization of, the theories, concepts, and/or strategies presented in the course materials to date. Viewpoints and interpretations are supported. Appropriate examples are provided, as applicable.	Response demonstrates a minimal reflection on, and personalization of, the theories, concepts, and/or strategies presented in the course materials to date. Viewpoints and interpretations are unsupported or supported with flawed arguments. Examples, when applicable, are not provided or are irrelevant to the assignment.	Response demonstrates a lack of reflection on, or personalization of, the theories, concepts, and/or strategies presented in the course materials to date. Viewpoints and interpretations are missing, inappropriate, and/or unsupported. Examples, when applicable, are not provided.
Required Components:	Response includes all components and meets or exceeds all requirements indicated in the instructions. Each question or part of	Response includes all components and meets all requirements indicated in the instructions. Each question or part of	Response is missing some components and/or does not fully meet the requirements indicated in the	Response excludes essential components and/or does not address the requirements

	the assignment is addressed thoroughly. All attachments and/or additional documents are included, as required.	the assignment is addressed. All attachments and/or additional documents are included, as required.	instructions. Some questions or parts of the assignment are not addressed. Some attachments and additional documents, if required, are missing or unsuitable for the purpose of the assignment.	indicated in the instructions. Many parts of the assignment are addressed minimally, inadequately, and/or not at all.
Structure	Writing is clear, concise, and well organized with excellent sentence/paragraph construction. Thoughts are expressed in a coherent and logical manner. There are no more than three spelling, grammar, or syntax errors per page of writing.	Writing is mostly clear, concise, and well organized with good sentence/paragraph construction. Thoughts are expressed in a coherent and logical manner. There are no more than five spelling, grammar, or syntax errors per page of writing.	Writing is unclear and/or disorganized. Thoughts are not expressed in a logical manner. There are more than five spelling, grammar, or syntax errors per page of writing.	Writing is unclear and disorganized. Thoughts ramble and make little sense. There are numerous spelling, grammar, or syntax errors throughout the response.
Evidence and Practice	Response shows strong evidence of synthesis of ideas presented and insights gained throughout the entire course. The implications of these insights for the respondent's overall teaching practice are thoroughly detailed, as applicable.	Response shows evidence of synthesis of ideas presented and insights gained throughout the entire course. The implications of these insights for the respondent's overall teaching practice are presented, as applicable.	Response shows little evidence of synthesis of ideas presented and insights gained throughout the entire course. Few implications of these insights for the respondent's overall teaching practice are presented, as applicable.	Response shows no evidence of synthesis of ideas presented and insights gained throughout the entire course. No implications for the respondent's overall teaching practice are presented, as applicable.

Total: _____/16
This assignment is 10% of your final grade.

STUDENT PERCEPTIONS

The Impact of Action Research on Teachers' Instructional Practices and their Students' Learning Experiences in the K-12 Classroom

Geraldine Sablan James
Mary Jane Miller
Cheryl Sangueza

Abstract

The University of Guam's School of Education (SOE) is a school that promotes teachers as researchers. Consequently, graduate students in the Master of Education Secondary Education program engage in action research as a capstone special project. Graduate students in this program are current K-12 teachers. In order to determine the impact that the action research experience has had on the teachers and their students, this study was conducted with 20 of the graduates from the three M.Ed. Secondary Education cohorts who completed the degree program from 2013 to 2017. The graduates completed an online survey. The study reports their responses regarding their perceptions of the value of their action research experience and how participation in action research impacts their classroom instructional practices. The teachers in the study also describe how the action research experience has empowered them and their teaching.

Keywords: *K-12, Action research, Instructional practice*

Introduction

As professionals, teachers are continually trying to find ways to improve, learn, and assume responsibility for their own professional growth and development. Through action research, teachers are able to seek information about their own performance with their students and reflect on their teaching practices (Mills, 2011). Such inquiry allows teachers to examine how they teach and how well their students learn. Action research, therefore, encourages teachers to examine the dynamics of their classrooms and interactions with students and then challenge existing instructional practices (Mills, 2011).

This study explored how action research impacts teachers' instructional practices and changes in their teaching. It examined the teaching experiences of 20 graduates in a Master of Education Secondary Education program who engaged in action research as a capstone special project for program completion. The 20 participants are graduates who are K-12 classroom teachers and who conducted the action research with their respective students. Their action research involved some type of intervention experiment designed to test or improve what was already happening in their classrooms. Unlike traditional social science research that discourages the researcher from intervening in any way in the

research setting, action research requires some type of intervention (Herr & Anderson, 2005). The teachers' intervention experiments "tested" a wide array of classroom practices affecting student academic achievement, student motivation, and classroom management. For example, their studies examined the use of cooperative learning, homework, differentiated instruction, technology, note-taking, graphic organizers, extrinsic motivators, seating arrangement, assessment types, and social media in classroom instruction. Some of the action research studies also explored students' learning experiences outside of the classroom. For example, one study focused on students' participation in service-learning projects and the effect on their sense of civic responsibility.

For the action researcher, such interventions involve an action cycle of planning, acting, observing, monitoring, evaluating, and reflecting. Consequently, the purpose of this study was to determine the impact that the action research experience has had on the teachers and their students. Thus, the research question guiding this study was: *How does participation in action research impact teachers' current and future instructional practices?*

Literature Review

Action research for teachers is a way to study their own situation in a "real world" setting, to try new practices with an eye toward improvement and then assess the new outcomes in comparison to the old. It is a cyclical process whereby the new outcomes are evaluated, reflected upon, and adjusted for continuous improvement (Schmuck, 2006). Not only can action research be a useful tool in the quest for educational excellence, but it can also help teachers and administrators to embrace progress and reform when needed rather than adhering to stability and mediocrity (Mills, 2011). "The action research process fosters a democratic approach to decision making while, at the same time, empowering individual teachers through participation in a collaborative, socially responsive research activity" (Mills, 2011, p.xii).

The focus of action research in education is on day-to-day problems in a classroom, campus, or district and can be conducted by a teacher, administrator, or other education professional. Its purpose is to aid in decision making at the local level (Wiersma & Jurs, 2009). In education, it is a tool used by teachers and other educators to try out and evaluate new strategies to improve teaching practice (Sagor, 2004).

In general, however, most educational studies in the past have been conducted by professionals whose job is training and conducting research. These studies generate quality and useful information, but too often do not produce the type of information most useful to teachers in a classroom (Mertler, 2009). Many teachers, when faced with the daily tasks of planning lessons, presenting content, and assessing outcomes, in addition to numerous tasks often delegated by administration, say there is little time for reading the research of others, much less for conducting research in their own classrooms. Furthermore, they site the scarcity of research written by classroom teachers and often find that what has been written is irrelevant to daily life in a classroom (McBee, 2004).

Teachers are both participants and observers in their classrooms and this places them in the ideal position to analyze and interpret classroom information and use that information for future planning (Mertler, 2009). Action research provides a pathway for teacher learning both while conducting the research and again when analyzing data outcomes at the end of a project. It encourages teachers to use their classrooms as a laboratory and to become researchers with the goal of improving instruction while allowing them to also be learners along the way (O'connor, Greene & Anderson, 2006). When teachers engage in action research projects they gain a deeper appreciation of self-assessment and reflection and greater understanding of the link between theory and practice (Eggen & Kauchak, 2012). This increases

professionalism of teachers and promotes improvements in individual classrooms (Eggen & Kauchak, 2012).

While action research is often cited as a positive and enriching experience for classroom practitioners, there are valid concerns that a teacher initiating a research study needs to consider. Marshall and Rossman (1994) talk about the amount of time necessary for a teacher to develop and implement an appropriate and effective study, as well as the time needed to actually write up and report the results. They also mention that action research often presents a "snapshot" view of a problem that may not be sufficient to present rigorous findings. Mills (2011) adds that the very cyclical and ongoing nature of action research can leave practitioners and stakeholders without a sense of closure as though conclusions are not really conclusive. In addition, action research outcomes may not be generalizable to other populations or replicable even in the same classroom, which may call into question the reliability and validity of some studies (Marshall & Rossman, 1994; Mills, 2011).

In a discussion with teachers about their experiences with action research, University of Southern California (USC) researchers expressed finding some of the same difficulties (Lewis, 2013). The USC discussion concludes that teachers believed action research was more difficult than other educational research because it presents additional responsibilities for classroom teachers. Teachers also said they had to guard against over-involvement and bias and noted that the write up of findings was difficult.

However, in their final report on the impact of action research, Caro-Bruce and Zeichne (1998) listed several interesting and beneficial outcomes reported in personal interviews with teacher-researchers. The most significant of these are: (a) Because teachers could choose their own research issues and connect their research to current concerns in their work situations, they developed a personal investment in the process; (b) the teachers felt a greater recognition of and respect for their knowledge as professionals, and (c) writing a final report of the research for publication was an important factor in helping the teachers analyze and synthesize their research (Caro-Bruce & Zeichne, 1998).

Among their findings, Seider and Lemma (2004) cite additional benefits of teacher conducted action research: (a) Teachers maintained their mindset of inquiry long after their initial research project was completed; (b) teacher efficacy was notably enhanced; and (c) the action research project resulted in immediate benefits for the students, although long term benefits were not determined.

When executed properly with appropriate design and rigorous standards, action research has the potential to be a powerful agent of educational change and teacher improvement (Mills, 2011). Both change and improvement occur when teachers learn more about their own instruction. This includes changes in pedagogy, in thinking and in confidence, all of which leads to professional growth and teacher improvement (Sax & Fisher, 2001).

Today, educators at a variety of levels are embracing action research as a positive and rewarding part of a classroom experience. It can generate results that are both informative and which have immediate and direct application (Mertler, 2009). Consequently, many teacher training programs are including this form of research in their programs. As the University of Guam is a school that promotes teachers as researchers, it is important to determine the impact that the action research projects have on the teachers and their students.

Methodology

Research Design

The design for this research study was mixed methods using both a quantitative and qualitative approach. The quantitative approach utilized a survey design and descriptive statistics. Quantitative strategies include survey research or experimental research (Creswell, 2013). Survey research features a numeric description of perceptions, patterns, and perspectives of a population by studying a portion of it through studies utilizing questionnaires to gather data (Creswell, 2013). Additionally, the qualitative component of this study involved comment sections and open-ended questions in the survey and content analysis. The meaning that participants ascribe to a phenomenon or issue is a main characteristic of qualitative research. Consequently, multiple perspectives and opportunities to elaborate on perspectives and responses are provided in a qualitative study (Creswell, 2013).

Sample

This study was conducted with University of Guam graduates of the Master of Education Secondary Education program who: (a) completed the course "ED617: Action Research" in the School of Education and (b) engaged in an action research project in a K-12 classroom. The number of potential participants for this study was 28 graduates from the three M.Ed. Secondary Education cohorts who completed the program from 2013 to 2017. Twenty (20) out of the 28 graduates agreed to participate in this study and responded to the survey.

Survey Instrument

This study utilized a survey (Appendix A) by O'Connor, Greene, and Anderson (2006). Permission to use the survey was obtained from the authors. The survey was administered online using Qualtrics. A demographic section at the beginning of the survey asked for the participants': (a) years of teaching experience, (b) grade level taught (elementary, middle, or high school), and (c) subject(s) taught (for middle and high school teachers). Following the demographic section, the survey consisted of nine items. In the first section of the survey, five statements pertained to the value of the participants' action research experience. Respondents ranked their agreement using a three-point Likert scale from 1 = disagree to 3 = agree. After each statement, a space was provided for the respondent to explain his/her choice. The final section of the survey had four open-ended questions. Three questions asked the participants how participation in action research had impacted their professional career, teaching, and instructional practices. The fourth question asked about issues the respondent encountered during the implementation of the action research project and how he/she solved them. Space was provided after each question for the respondents to elaborate.

Procedures and Data Collection

The researchers received approval from the University of Guam Institutional Review Board (IRB) to conduct the study. Once approval was received, the researchers obtained a list of the M.Ed. Secondary Education graduates meeting the participant criteria from the SOE Administrative Officer. An email invitation to participate, which included a link to the survey in Qualtrics, was sent to the individuals on the list. Twenty (20) out of the 28 potential participants agreed to participate in the study and completed the survey.

Data Analysis

Data from the Likert scale rated items were analyzed using descriptive statistics. Data from the written statements sections and open-ended questions were analyzed using content analysis. In content analysis, the researcher develops a category coding procedure, identifies the categories, and then counts the frequency of instances those categories occur (Silverman, 2001).

Results

Demographics

Of the 20 teachers who participated in the study, three were elementary school teachers, 11 were middle school, and six were high school. Their teaching experience ranged from two to 22 years, with half of the teachers having more than 10 years of teaching experience. The middle and high school teachers also indicated the content areas they taught, which included: six Social Studies, two Reading, two Language Arts, two Science, two Health/Physical Education, one Math, one English as a Second Language (ESL), and one Foreign Language.

Value and Impact of Action Research

Respondents indicated their level of agreement regarding five statements addressing the value of action research and its impact on their current teaching practices. Respondents ranked their agreement using a three-point Likert scale from 1 = disagree to 3 = agree. Table 1 shows the mean scores for the action research value and impact statements.

Table 1 Mean Scores for Action Research Value and Impact Questions (N = 20)

Survey Item	Mean	SD
Action research is valuable to the teaching and learning process for me as a teacher.	3.00	.00
Action research is valuable to the teaching and learning process for my students.	2.95	.22
This action research project positively impacted my students' learning.	2.70	.58
This action research project positively impacted my teaching.	2.95	.22
I view myself as a teacher-researcher.	2.70	.57

Action research is valuable to the teaching and learning process for me as a teacher

There was a unanimous, high level of agreement for this statement as all respondents rated the item a 3.0. Teachers most frequently commented that action research was a tool that helped them to reflect on their teaching and improve their instructional practices. One teacher noted how "action research is a more personalized way of improving practice." Another teacher expressed, "The action research process has helped me with my teaching practices by identifying what needs to be worked on so this can benefit my students." Teachers emphasized the value of self-reflection in the action research process; as one teacher explained, "Every teacher needs to look for improvement every year and not be complacent." Another teacher reiterated, "Action research helps me address questions about my teaching, finding data to support adjustments and changes that I need to make in the classroom."

In addition to recognizing and finding ways to improve their teaching practices, the teachers also frequently described how data from their action research supported their effectiveness as teachers. One teacher stated, "Data helped guide and confirm teaching strategies I use." Another teacher commented, "I was able to find out what other researchers found and also what worked or didn't work for me as a teacher." Several teachers acknowledged the importance of keeping up with current practices. One teacher explained, "As a teacher, I always want to use the most relevant and best working strategies for student learning, and action research helps me to determine them." Likewise, another teacher acknowledged, "Education is an ever changing and evolving field and discipline. Action research provides current data from real time practices."

Action research is valuable to the teaching and learning process for my students

Respondents had a high level of agreement, with the statement receiving a mean rating of 2.95. Only one out of the 20 respondents rated this item a two, indicating neutrality, while no one chose a rating of one. The teacher who chose a two regarding the value of action research to the teaching and learning process for students explained, "Maybe not to your study participants directly, but to future students afterwards." The remaining respondents chose a three and expressed that, ultimately, action research was valuable for their students as the "clients" of the teaching and learning process. As one teacher noted, "My students are my clients whose lives I impact. They are the reason I wanted to better myself as a teacher." The teachers' comments reiterated this focus on student learning, as one teacher put it, "Action research promotes an improvement in teaching practice; therefore, a better teacher = improved student learning." Another teacher noted how action research empowered students in the learning process: "Students became more active and took control of their learning in my action research." Additionally, one teacher explained how action research exposed students to "current trends in education that eventually helped to shape future lessons." One teacher's comment sums up the majority of the responses, "Students benefit from research-based strategies and methods that are designed with their learning goals in mind. They get the benefit of teaching methods that have been refined to ensure that they get the most "bang for their buck."

This action research project positively impacted my students' learning

The mean rating for this statement was 2.70. One respondent rated this item a one, indicating disagreement with the statement. Four respondents chose a two, indicating neutrality. The remaining 15 respondents chose a three indicating they agreed with the statement. The teacher who chose a one explained, "My topic was fairly new, so the students were somewhat frustrated with the teaching change." As for teachers who indicated neutrality, one comment sums up their choice, "Some students improved, while others did not." As for the 15 teachers who indicated agreement, they described a variety of ways their students' learning was positively impacted by the action research project. One teacher described the positive changes for students, "After the action research project and my intervention, the majority of my students changed for the better academically and behaviorally." Several teachers referred to ways action research enlightened students. As two teachers explained, "Students learned about themselves and it opened up their eyes to further goals," and "They [students] were able to think differently from what they were accustomed to." Teachers noted other areas of positive impact such as "improved communication out of the classroom that translated into better rapport and better grades," and how action research "shows how students can learn through different applied strategies and techniques."

This action research project positively impacted my teaching

Respondents had a high level of agreement, with the statement receiving a mean rating of 2.95. No respondent chose a rating of one, while only one of the respondents rated this item a two indicating neutrality, but the respondent did not provide a reason for the choice. The majority of the teachers believed their teaching was positively impacted, and that they were able to immediately make improvements to their teaching practices. One teacher claimed, "I was able to reflect on the type of teacher I was and the type of teacher I should be." Another teacher expressed, "After my action research, I became the teacher I should be and never looked back." Many teachers described immediate positive results. As one teacher explained, "I used what I had learned and adjusted my teaching. I saw some improvements in students, and improvement is a good thing." Teachers were also gained insights about their teaching skills. For example, one teacher stated, "It allowed me to understand some weaknesses and strengths in my teaching ability."

I view myself as a teacher-researcher

The mean rating for this statement was 2.70. One respondent rated this item a one, indicating disagreement with the statement. Four respondents chose a two, indicating neutrality. The remaining 15 respondents chose a three, indicating they agreed with the statement. The teacher who chose a one explained, "I only did action research once. When I continue with more contributions in research, I might consider myself as a teacher-researcher." Two of the teachers who expressed neutrality with the statement acknowledged, "Sometimes I feel like I am a teacher-researcher and sometimes I'm not sure," and "I have to keep up to date with articles and platforms of networking to provide better learning areas for my students." Several of the 15 teachers who agreed that they view themselves as a teacher-researcher indicated they have a changed mindset. One teacher explained, "After my action research, I feel like I question everything and tend to research for reliable data." Another teacher echoed these sentiments, "Now, I find myself constantly reflecting on and questioning what I did that day, asking myself if there was a better way to do it, what worked, what needed to change, and how I should go about affecting those changes." Additionally, for most of the teachers who agreed with the statement, they equated being a teacher-researcher with a being a lifelong learner and being proactive in looking for ways to become a better teacher. One comment sums up their responses, "I now constantly look to improve my teaching practices and also encourage my colleagues to self-reflect towards improvement."

Impact on Teaching Practices

In the second section of the survey, respondents addressed four open-ended questions. For the first three questions, the respondents explained how participation in action research had impacted their professional career, teaching, and instructional practices. For the fourth question, the respondents identified and described any issues they encountered during the implementation of the action research project and how they solved them.

Long lasting career impact

When asked to describe the long-lasting effects that the action research experience would have on their professional career, two themes emerged from the teachers' responses: improvement and future research. The theme of improvement appeared most often. The teachers emphasized how they will continue to reflect on their teaching practices with the intent of improving and enhancing the quality of their teaching. For example, one teacher expressed, "No teacher is perfect, and there is always room for improvement." Another teacher noted, "I will continue to improve different aspects of my teaching technique." The teachers overwhelmingly resolved to initiate these improvement efforts. As two teachers explained, "I am now proactive to try new styles of teaching and trends" and "Now I can try and do something about it to make an effective change."

The second theme that emerged was the teachers' understanding of research and desire to continue conducting it. One teacher expressed, "Long lasting effects would be constant questioning and researching." Another teacher claimed, "My discoveries have allowed me to instruct my peers to understand research topics and project results." Finally, one teacher emphasized how action research has "helped me learn how to do research and to carry out the experimental process in my classroom to continue to test strategies."

Teacher empowerment

In response to the question about how the action research experience empowered them and/or their teaching, the overwhelming theme was the confidence the teachers felt about their ability to teach and the methods they use. This confidence included a better understanding of their capabilities and potential. One teacher expressed, "Action research has given me a better understanding of what I'm

capable of accomplishing." Likewise, another teacher reiterated, "I am more knowledgeable, and I have a better understanding of my students that will enable me to have a good rapport with them to positively impact their learning." One teacher further described confidence as a change agent, "If I want change to happen, it's on me. I am the intervention." For several teachers, this confidence energized them. As one teacher claimed, "It helped me realize that every class is different and that I need to constantly evolve with my teaching practices to keep up with the ever-changing student environment."

Informing instructional practices

The third open-ended question asked the teachers to describe how their research has informed their teaching practices. The emerging theme was enlightenment and greater awareness of the benefits of change for improvement. As one teacher emphasized, "Learning never stops for teachers!" Another teacher noted, "I needed to make changes as a teacher to positively impact my students' learning." Change was welcomed, not resisted—as one teacher claimed, "Research has caused me to alter some of my teaching practices. . . to try out new and different strategies." Several of the teachers also noted how research supported their existing teaching practices while also creating a willingness to try different styles of teaching.

Issues and challenges

Finally, the teachers were asked to discuss any issues that arose while they engaged in action research and how they resolved them. They described a variety of issues they encountered—some anticipated and some unexpected. The most frequent challenge was gathering enough students for their research. This involved obtaining signed consent forms from their students' parents. Only students who returned the signed consent forms could participate in the research, which meant not all of the students in the teachers' classes participated. Other issues included time management in balancing their teaching workload duties with their research work, trying to keep organized and complete stages in the action research process in a timely manner, and scheduling implementation of the action research to fit the lesson timeline in their classes. Some of the teachers also noted simply narrowing and refining their action research topic as a challenge since there were so many directions they could have taken with a topic. Some issues were out of the teachers' control to resolve, while the teachers stated they were able to resolve most issues with the guidance of their professors, support from peers in their cohort, and persistence to complete each step of the research process.

Conclusions and Implications

The findings of this study suggest two considerations about action research: the action research process is a valued personal and professional journey that transforms teachers, and there needs to be a continued effort in developing graduate students' self-image as not only excellent teachers, but as excellent teacher-researchers.

Although the review of literature presented several aspects of action research that teachers have reported they find difficult about the process of planning, implementation, and analysis of outcomes, it is interesting that none of the survey participants mentioned these factors. While reporting bias is always a possibility, it is notable that the study participants were all recently graduated, former students, not attending classes at the time of the study, and had nothing to either gain or lose from their anonymous input. Yet, their responses were unanimously positive and focused on successes.

Consistent remarks indicating teacher transformation include: "helped me identify and improve," "I realize where I need to be and how to get there," "action research helps me address questions about my teaching, finding data to support adjustments and changes that I need to make in the classroom," and

"helped me with my teaching practices by identifying what needs to be worked on so this can benefit my students." This awareness of teaching practice and student needs (O'Connor et al., 2006) is fundamental to consequential change.

Systematic process of reflection and action was an undertone, but significant presence in participant responses. Similar to the study by O'Connor et al. (2006), "I view myself as a teacher-researcher" yielded the lowest "agree" score. Participants waivered on the level of "agree" based on their definition of a teacher-researcher. In the participants' explanation of their score, many shared a level of reflection present in their practice. For some, the process of purposeful reflection and action was new and for others the process was refined through action research. Action research in graduate programs can be packaged as a method to formalize a systematic and purposeful process of reflection and action while instilling the professional duty to continue in this practice.

Recommendations for Future Research
Since action research is perceived as an experience that transforms, an important future research consideration is to follow recent Masters program graduates to explore post-graduate studies change in teacher attitude and practice. Second, future research could also investigate Masters graduates roles as leaders and change agents in their schools and districts (Mertler, 2006).

One last recommendation for future research is to explore whether the momentum of research and reflection instilled during a graduate program continues post-graduation. This examination of the role as teacher-researcher can help Master's programs refine their design to maximize the long-term impact of graduate programs on empowering teachers.

References
Caro-Bruce, C., & Zeichner, K. ((1998). *Impact of action research*. Retrieved from https://www.csuchico.edu/teacher-grants/documents/Impact_of_Action_Research.pdf

Creswell, J. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage.

Eggen, P. P. & Kauchak, D. (2012). *Education psychology: Windows on classrooms*. New York City, NY: Pearson.

Herr, K., & Anderson, G. L. (2005). *The action research dissertation: A guide for students and faculty.* Thousand Oaks, CA: Sage.

Lewis, M. (2013) The Pros and cons of action research. Retrieved September, 2017 from https://mrsmirandalewis.wikispaces.com/Advantages+and+Disadvantages+of+Action+Research

McBee, M. (2006). The classroom as a laboratory: An exploration of teacher research. *Roeper Review*, *27*, 52-58.

Mertler, C. (2009). *Action research: Teachers as researchers in the classroom*. Thousand Oaks, CA: Sage.

Mills, G. (2011). *Action research: A guide for the teacher researcher*. New York City, NY: Pearson.

O'Connor, K. A., Greene, H. C., & Anderson, P. J. (2006, April). *Action research: A tool for improving teacher quality and classroom practice.* Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA.

Sagor, R. (2004). *The action research guidebook: A four-step process for educators and school teams.* Thousand Oaks, CA: Sage.

Sax, C., & Fisher, D. (2001). Using qualitative action research to effect change: Implications for professional education. *Teacher Education Quarterly*, *28* (2), 71-80.

Schmuck, R. (2006). *Practical action research for change*. Thousand Oaks, CA: Sage.

Seider, S., & Lemma, P. (2004). Perceived effects of action research on teachers' professional efficacy, inquiry mindsets and the support they received while conducting projects to intervene into student learning. *Educational Action Research*, *12*(2), 219-238. doi: 10.1080/09650790400200246

Silverman, D. (2001). *Interpreting qualitative data: Methods for analyzing talk, text and interaction* (2nd Ed.). London, England: Sage.

Wiersma, W., & Jurs, S. (2009). *Research methods in education: An introduction*. New York City, NY: Pearson.

Appendix A

ACTION RESEARCH SURVEY

A. Please answer the following by circling the appropriate number indicating whether you disagree, are neutral, or agree with the statement.
- 1 indicates you disagree with the statement
- 2 indicates you do not feel strongly either way
- 3 indicates you agree with the statement

1. Action research is valuable to the teaching and learning process for me as a teacher.

    (disagree)   1   2   3   (agree)

    Explain your choice.

2. Action research is valuable to the teaching and learning process for my students.

    (disagree)   1   2   3   (agree)

    Explain your choice.

3. This action research project positively impacted my students' learning.

    (disagree)   1   2   3   (agree)

    Explain your choice.

4. This action research project positively impacted my teaching.

    (disagree)   1   2   3   (agree)

    Explain your choice.

5. I view myself as a teacher-researcher.

     (disagree)   1   2   3   (agree)

Explain your choice.

B. Please respond to the following questions.

6. Describe the long-lasting effects, if any, that you believe the action research project will have on your professional career?

7. In what ways has the action research experience empowered you and/or your teaching?

8. How has your research informed your instructional practices?

9. What issues arose for you while engaging in action research and how did you resolve them?

Sound Perceptions and Self-Assessments of Japanese Language Learners at the Beginner Level

Masumi Kai

Abstract

Phonetics differs by language. Sound perception is one of the challenges when we learn a new language. This paper investigates what type of sounds are difficult to perceive for language learners at the beginner level. The paper will also examine the learner's progress on sound perception during the course and the correlation between the learners' sound perceptions and their self-assessments. The subjects are college students who were taking the beginner's Japanese language course at the University of Guam. Our data shows that learners have four types of sound misperceptions: non-perception, insertion, shortening and lengthening, and others. The results reveal that learners' sound perception becomes   better throughout the   course,   especially   after they learn the   Japanese characters. However, the learning period does not correlate with better sound perception. Learners who estimated their own language ability lower than actual, demonstrated a low motivation for learning. Our data shows the importance of introducing characters at an early stage of learning and of monitoring learners' self-assessment periodically. We believe that this research result can be applied to any language learning.

Keywords: *Sound perception, Language learners, Japanese*

Introduction

Acquisition of sounds is essential when learning a foreign language. Without knowing how to pronounce words, it is impossible to learn any language. One of the reasons why learners have difficulties in perceiving sounds of a language is due to its phonetic system. In this paper, we examine the sound perceptions of students who learn the Japanese language. We believe that our claim can be applied to any language learning environment.

Japanese is a mora-timed language[1]. A mora is a unit of timing. The most common type of Japanese mora is formed by a consonant followed by a vowel (CV). A vowel (V) itself also can be a mora. For example, *kimono* consists of three morae [ki.mo.no] [2], and *ii* (good) consists of two morae [i.i]. There are some special morae in Japanese. Special morae include syllabic nasals, long consonants (or geminates), long vowels, and Y-sounds (palatalized consonants). The nasal sound /ɴ/ can

---

[1] Morae and syllables are not the same. Simply speaking, a syllable is a unit of sound composed of a central peak of sonority and the consonants that cluster around this central peak. Morae is a unit of timing. For example, *oto꞉san* (father) has three syllables [o/to꞉/saɴ], however, it has five morae [o.to.o.sa.ɴ]. English is a stress-timed language.

[2] The symbols in [ ] indicates IPA (International Phonetic Alphabet), and letters in ( ) indicates Japanese romanized letters which are commonly used to spell out Japanese sounds.

function as a mora like *san* 'three' [sa.ɴ]. The long consonant has a phonetically voiceless stop. The word *nippon* 'Japan', for example, has four morae [ni.p.po.ŋ]. There is a stoppage of airflow between [ni] and [po]. The contrast between long vowels and short vowels distinguishes the word's meaning. For example, *obasan*, which has four morae [o.ba.sa.n], means 'aunt', whereas *obaːsan* [3], which has five morae [o.ba.a.sa.n], means 'grandmother'. There are also what is called Y-sounds. Y-sounds consist of a consonant, a semivowel [j], and a vowel like *kya* [ca], *shu* [ɕɯ], or *cho* [tɕo]. Most languages do not have morae, and thus the Japanese language learners have difficulties in perceiving and producing morae, especially these special morae.

Numerous studies have been done discussing which particular phonetic environment makes these special morae difficult to perceive. Muroi (1995), Minagawa (1995), Oguma (2000, 2001, 2002) claim that the final long vowel is more difficult to perceive than the initial long vowel in a word. Muraki and Nakaoka (1990) pointed out that a syllabic nasal followed by the acoustically same type of nasal sound is hard to perceive for the learners. Uchida (1993) states that Chinese learners at the beginning level find it especially difficult to identify a long vowel and a long consonant. First, we will reexamine these previous findings. We also analyze if students show any progress in perceiving Japanese sounds during the course, and if there is any correlation between sound perceptions and the learners' self-assessment.

Methodology
Participants' Backgrounds
The beginner's Japanese language course (JA101) at the University of Guam starts by introducing Japanese characters and teaching basic structures in a 50-minute class. The classes take place four days a week for the sixteen weeks that make up a semester. A single instructor teaches for the entire semester. The Japanese language has three types of characters: 46 hiragana, 46 katakana, and kanji (Chinese characters). Hiragana is taught first, followed by katakana. Students learn about 60 kanji in JA101. Hiragana is basically used for function words and Japanese origin words. Katakana is used for foreign words. Kanji is used for content words.

Subjects are all college students who were taking JA 101 at the University of Guam. We conducted the test on two groups at different times. The first group had eight subjects, and the second group had thirteen subjects. Ethnicities of subjects include Chamorro, Filipino, Korean, and Japanese heritage. Their first language is English and they use English in daily life except for the one Korean subject.

Data Collection
We used a dictation test to analyze students' sound perceptions. The dictation test includes 24 Japanese content words as shown in Table 1. We chose words that are not taught at the beginner's level (except for two words, *kagi* 'key' and *kuni* 'country') in order to exclude the influence of the learners' previous knowledge. *Kagi* and *kuni* were intentionally included to see the difference in perception between familiar words and unfamiliar words. The words used in the test vary in the number of morae. All words except for three examples contain special morae. The first group took a test at the beginning and end of the semester. The second group took the same test three times (at the beginning of the semester, just after introducing hiragana, and at the end of the semester) to see the impact of learning Japanese characters.

---

[3] The symbol 'ː' signifies a long vowel.

The instructor read each word three times and the subjects wrote down what they heard using the alphabet and two special symbols: 'ᴏ' and ' 〜 '. The symbol 'ᴏ' indicates a long consonant, and the symbol ' 〜 ' indicates a long vowel. For example, the instructor says the word otoːsan 'father'. If the subjects think that there is a long sound after [to], they would write 'oto〜 san'. The instructor says *hakkiri* 'clearly' for example. The subject would write 'haᴏkiri', if they perceive a long consonant after [ha]. Previous research has revealed that a long consonant and a long vowel do not have exactly the same duration as other morae in a normal conversation (Han 1962, Fukui 1978, Beckman 1982, Hoequist 1983, Campbell & Sagisaka 1991, Sato 1993, Uchida 1993, 1998, Minakawa, Maekawa & Kiritani 2002). In this test, instructor pronounced words deliberately to give the long consonant and the long vowel the same duration of time as other morae.

Table 1. *Dictation test words*

1. kagi (key)	7. shuppan (publish)	13. shoːboːsha (fire engine)	19. gainen (concept)
2. kaichoː (chairman)	8. kuni (country)	14. haishakusuru (to borrow)	20. kagakusha (scientist)
3. kigyoː (corporation)	9. nikkanshi (daily newspaper)	15. yokin (saving)	21. shichimenchoː (turkey)
4. uchuː (the universe)	10. kitsuenseki (smoking seat)	16. ningyoː (doll)	22. keːtai (cellphone)
5. ichijiteki (temporary)	11. kinmujika (working hour)	17. untenshu (driver)	23. tsuːchoː (bank book)
6. unga (canal)	12. ketsuekigata (blood type)	18. oːsatsuma (living room)	24. gyoːretsu (procession)

Results

The results from each subject are shown in Table 2. The subjects in the first group took the same test twice, and the subjects in the second group took the same test three times.

Table 2 The first groups' dictation test results

Subject	Beginning of the semester		End of the semester		
	Number of Correct Answers (%)		Number of Correct Answers (%)		Increased Rate
#1	5	(20.83)	14	(58.33)	▲180.00%
#2	10	(41.67)	17	(70.83)	▲70.00%
#3	4	(16.67)	16	(66.67)	▲300.00%
#4	1	(4.17)	6	(25.00)	▲500.00%
#5	14	(58.33)	20	(83.33)	▲42.86%
#6	5	(20.83)	9	(37.50)	▲80.00%
#7	6	(66.67)	17	(70.83)	▲6.25%
#8	1	(4.17)	8	(33.33)	▲700.00%
Average	*7*	*(29.2%)*	*13.4*	*(55.7%)*	*▲91.43%*

The Japanese heritage student is subject number 3, and the Korean student is subject number 6. The result of the first group shows that the average number of correct answers at the beginning of the

semester is 29.2%. It increased to 55.7% by the end of the semester. This is a 91.43% increase. The highest rate of increase for an individual subject is 700%. The lowest is 6%. The highest score at the beginning of the semester is 66.67%, and the lowest score is 4.17%. The highest score at the end of the semester is 83.33%, and the lowest score is 25%. These numbers show that sound perception increases through learning.

The table below shows the results from the second group.

Table 3 The second groups' dictation test results

Subject	Beginning of the semester		After Introducing hiragana			End of the semester			
	Number of Correct Answers (%)		Number of Correct Answers (%)		Increased Rate (Beginning of the semester to After hiragana)	Number of Correct Answers (%)		Increased Rate (After hiragana to the End of the semester)	Increased Rate (Beginning of the semester to End of the semester)
#1	8	(33.33)	14	(58.33)	▲75.00%	16	(66.67)	▲14.29%	▲100.00%
#2	1	(4.17)	1	(4.17)	0.00%	3	(12.5)	▲200.00%	▲200.00%
#3	14	(58.3)	11	(45.83)	▼-21.43%	13	(54.17)	▲18.18%	▼-7.14
#4	7	(29.17)	7	(29.17)	0.00%	10	(41.67)	▲42.86%	▲42.86%
#6	1	(4.17)	5	(20.83)	▲400.00%	4	(16.67)	▼-20.00%	▲300.00%
#7	11	(45.83)	7	(29.17)	▼-36.36%	10	(41.67)	▲42.86%	▼-9.09
#8	2	(8.33)	3	(12.50)	▲50.00%	5	(20.83)	▲66.67%	▲150.00%
#9	5	(20.83)	16	(66.67)	▲220.00%	13	(54.17)	▼-18.75%	▲160.00%
#10	4	(16.67)	5	(20.83)	▲25.00%	17	(70.83)	▲240.00%	▲325.00%
#11	11	(45.83)	20	(83.33)	▲81.82%	22	(91.67)	▲10.00%	▲100.00%
#12	4	(16.67)	10	(41.67)	▲150.00%	17	(70.83)	▲70.00%	▲325.00%
#13	10	(41.67)	12	(50.00)	▲20.00%	16	(66.67)	▲33.33%	▲60.00%
#15	4	(16.67)	6	(25.00)	▲50.00%	9	(37.5)	▲50.00%	▲125.00%
Average	*6.31*	*(26.28)*	*9.0*	*(37.50)*	▲*42.63%*	*11.9*	*(49.68)*	▲*32.22%*	▲*88.59%*

The result of the second group shows that the average number of correct answers at the beginning of the semester is 26.28%. It increased to 37.5% after the introduction of hiragana. It became 49.68% at the end of the semester. The increased rate between the beginning of the semester and after introducing hiragana is 32.22%. The increased rate through the entire course is 88.59%. The highest rate of increase for an individual subject through the course is 325.00%. The lowest is -9.09%. Although this is a negative rate, the score of this subject was relatively high from the beginning. The highest score at the beginning of the semester is 45.83%, and the lowest score is 4.17%. The highest score after introducing hiragana is 83.33%, and the lowest score is 4.17%. The highest score at the end of the semester is 91.67%, and the lowest score is 12.5%.

These results show that learners are more capable of perceiving Japanese sounds, even those new to them, as they progress in their learning. Sound perceptions become better in a short period by learning the hiragana. Hiragana characters are taught from the third day of the course. All of the hiragana, special morae, and palatalized consonants are learned in eight days.

Discussion

Tendencies of correct answers

Since most learners have difficulties in perceiving Japanese sounds at first, we may simply predict that short-mora words should be easier to perceive for learners. Our data shows that this is not always the case. As Table 4 shows, the word *kagi* for example has short morae and the percentage of correct answers is high. The subjects learn this word by the end of the semester, so the good result is understandable and expected. However, *kigyo:* has a low percentage of correct answer in spite of having only three morae. This word contains a palatalized consonant and a long vowel. There are certain words that subjects have difficulty in perceiving. The words are *kigyo:, kagakusha, uchu:, tsu:cho:, kinmujikan*. These, except for *kinmujikan*, contain palatalized consonants. The word *kin mujikan c*ontains a syllabic nasal followed by same type of nasal /mu/. This follows the finding of Muraki and Nakaoka (1990). They claim that a syllabic nasal followed by an acoustically equal type of nasal sound is one of the hardest sounds for Japanese language learners to perceive. The result suggests that the number of morae is not the most crucial factor in determining which words learners have difficulties in perceiving. It is the type of sound that causes the problems.

Table 4 indicates the number of morae, phonetic special feature, and the rate of correct answers for each word.

Table 4 Dictation test results change

	words (English)	number of morae	special feature	group	% subjects could answer correctly		
					At the beginning of the semester	After introducing hiragana	At the end of the semester
1	kagi (a key)	2		1	50%	-	▲100%
				2	46.2%	▲53.8%	▲69.2%
2	kaicho: (the president)	4	palatalized consonant [tɕo] + long vowel	1	37.5%	-	▲62.5%
				2	23.1%	▲38.5%	▲76.9%
3	kigyo: (an enterprise)	3	palatalized consonant [ɟao] + long vowel	1	12.5%	-	▲25%
				2	38.5%	38.5%	▼23.1%
4	uchu: (the universe)	3	palatalized consonant [tɕu] + long vowel	1	12.5%	-	▲25%
				2	23.1%	▲38.5%	▲46.2%
5	ichijiteki (temporally)	5	affricates sound [dʑi]	1	50%	-	▲62.5%
				2	15.4%	▲38.5%	▲61.5%
6	unga (a canal)	3	syllabic nasal	1	37.5%	-	▲75%
				2	23.1%	▲30.8%	▲46.2%
7	shuppan	4		1	25%	-	▲87.5%

	(publishing)		palatalized consonant [ɕɯ], long consonants	2	84.6%	84.6%	▲92.3%
8	kuni (a country)	2		1	37.5%	-	▲75%
				2	30.8%	▲46.2%	▲76.9%
9	nikkanshi (a daily paper)	5	long consonants, syllabic nasal, fricative sound [ɕi]	1	25%	-	▲62.5%
				2	23.1%	▲53.8%	▼46.2%
10	kitsuenseki (a smoking seat)	6	affricates sound [tŝɯ], syllabic nasal	1	37.5%	-	▲62.5%
				2	15.4%	▲23.1%	▲61.5%
11	kinmujikan (working hour)	6	syllabic nasal	1	0%	-	▲25%
				2	7.7%	▼0%	▲15.4%
12	ketsuekigata (a blood type)	6	affricates sound [tŝɯ]	1	50%	-	▼37.5%
				2	38.5%	▲46.2%	▲53.8%
13	sho:bo:sha (a fire truck)	5	palatalized consonant [ɕo][ɕa]+ long vowel	1	37.5%	-	50%
				2	23.1%	▲69.2%	▼38.5%
14	haishakusuru (to borrow)	6	palatalized consonant [ɕa]	1	37.5%	-	▲75%
				2	0%	▲7.7%	▲53.8%
15	yokin (savings)	3	syllabic nasal	1	25%	-	▲75%
				2	15.4%	▲38.5%	▲53.8%
16	ningyo: (a doll)	4	syllabic nasal, palatalized consonant [ɟo] + long vowel	1	25%	-	▲50%
				2	23.1%	▲53.8%	▼46.2%
17	untenshu (a driver)	5	syllabic nasal, palatalized consonant [ɕɯ]	1	25%	-	▲87.5%
				2	7.7%	▲23.1%	▲30.8%
18	o:setsuma (a drawing room)	5	long vowel, affricates sound [tŝɯ]	1	50%	-	▲62.5%
				2	53.8%	▲92.3%	▼53.8%
19	gainen (a concept)	4	syllabic nasal	1	50%	-	▲62.5%
				2	23.1%	▲46.2%	▲61.5%
20	kagakusha (a scientist)	4	palatalized consonant [ɕa]	1	0%	-	▲37.5%
				2	0%	▲23.1%	▲38.5%
21	shichimencho: (a turkey)	6	affricates sound [d̂ʑi], syllabic nasal, palatalized consonant [tɕo] + long vowel	1	0%	-	▲37.5%
				2	7.7%	▲46.2%	▲61.5%
22	ke:tai	4	long vowel	1	25%	-	50%

				2	69.2%	▼53.8%	▼23.1%
	(a cell phone)						
23	tsuːchoː (a bankbook)	4	affricates sound [t͡sɯ], palatalized consonant [t͡ɕo] + long vowel	1	12.5%	-	▼0%
				2	15.4%	▼7.7%	15.4%
24	gyoːretsu (a procession)	4	palatalized consonant [ɟo] + long vowel, affricates sound [t͡sɯ]	1	50%	-	▲62.5%
				2	46.2%	46.2%	46.2%

Table 4 shows that there are two words for which the correct rate went down in the first group of subjects: *ketsuekigata*, *tsuːchoː*. There are six words for the second group of subjects: *kigyoː, nikkanshi, shoːboːsha, ningyoː, oːsetsuma, keːtai*. The results from the first group and the second group do not match exactly; however, there is a general tendency of perception. We will discuss this tendency in the next section.

Analysis of wrong perception

The results indicate that there are no specific perception patterns at the beginning of the semester. Incorrect perceptions occurred simply because the subjects could not catch the sounds; however, some perception patterns developed by the end of the semester. The patterns can be divided into four types: non-perception, insertion, shortening & lengthening, and others.

Type A. Non-perception

A1. non-perception of a long consonant
   (1) could not perceive the long consonant inside the word (Note that the long consonant never in the initial or final position in Japanese). (ex) *shuppan*

A2. non-perception of a long vowel
   (2) could not perceive the long vowel inside the word. (ex) *shoːboːsha*
   (3) could not perceive the long vowel at the end of the word. (ex) *shichimenchoː*

A3. non-perception of a syllabic nasal
   (4) could not perceive the syllabic nasal inside the word, and heard it as a long vowel with the ɯ sound. (ex) *nikkanshi*
   (5) could not perceive the syllabic nasal inside the word, and heard it as if there was an air stop (ex) *kinmujikan*
   (6) could not perceive the syllabic nasal inside the word. (ex) *untenshu*

Type B. Insertion

B1. Insertion of a long consonant
   (7) heard an air stop at the end of the word. (ex) *kagi*
   (8) heard an air stop before a plosive, affricate, trill, or fricative sound. (ex) *kaichoː*
   (9) heard an air stop after the syllabic nasal at the end of the word. (ex) *yokin*
   (10) heard an air stop during the transition from the back vowel [ɯ] to the front vowel [e].
      (ex.) *kitsu enseki*

B2. Insertion of a long vowel
   (11) heard a long vowel before a plosive, affricate, trill, or fricative sound. (ex) *kagi*

(12) heard the short vowel at the end of the word as a long vowel. (ex) *ichijiteki*
(13) heard the short vowel before another vowel as a long vowel. (ex) *ga inen*
(14) heard the syllabic nasal at the end of the word as a long sound. (ex) *yokin*
(15) heard the syllabic nasal inside the word as a long sound. (ex) *unga*

Type C. Shortening and Lengthening
    (16) heard the long vowel as a long consonant (ex) *shoːboːsha*
    (17) could not perceive the long consonant inside the word, but heard it as a long vowel.
      (ex) *shu ppan*

Type D. Others
  D1. palatalized consonant
    (18) could not perceive the palatalized consonant. (ex) *kaichoː*
    (19) could not perceive the difference between a voiced and a voiceless palatalized consonant.
      (ex) *kigyoː*
  D2. Voiced and Voiceless
    (20) heard the voiceless sound as a voiced sound. (ex) *ichijiteki*
  D3. Consonant
    (21) could not perceive the unvoiced vowel. (ex) *haishakusuru*

Type A, the non-perception, includes non-perceptions of a long consonant, a long vowel and a syllabic nasal. The subjects could not perceive the long vowel except *gyoːretsu* and *tsuːchoː*. Non-perception of the long vowel happened more often at the end of the word than inside the word. This matches the analysis of Muroi (1995), Minakawa (1995), Oguma (2000, 2001). All subjects could perceive the syllabic nasal at the end of the word; however, not all could perceive a syllabic nasal inside the word except *unga*. This indicates that the syllabic nasal inside the word is difficult to perceive for learners.

In Type B1, the inserting type, the subjects often inserted a long vowel or a long consonant in front of a plosive, affricate, trill, or fricative sound (inserting a long consonant: 179 cases, inserting a long vowel: 91 cases). There needs to be a complete closure of air inside the oral cavity to produce a plosive, affricate, trill, fricative sound. The subjects might have heard this close of air as a long consonant. Asano (2007) states that learners make errors inserting a long consonant before a /k/ consonant: *hikkoki* as *hikooki*, however, however our data shows that subjects heard a long consonant not only before /k/ sounds but also before plosive, affricate, trill, and fricative sounds. The words into which the subjects did not insert a long consonant are *ichijiteki, shuppan, nikkanshi, kitsuenseki, kinmujikan, ningyo, untenshu, gainen, shichimenchoː*. These are mainly syllabic nasals. Syllabic nasals are more likely to have other types of incorrect perceptions: subjects do not perceive a syllabic nasal or perceive it as a long sound.

The B2, insertion type of misperception, happens when the subjects perceive the syllabic nasal to be inside the word as a long sound of /ɴ/ or /ŋ/. Subjects inserted a long vowel in front of plosive, affricate, trill, and fricative sounds.

Type C, shortening and lengthening, are instances where subjects heard the long consonant as a long vowel like '*shuppan*' to '*shu~pan*'. This happened in front of the long consonant. It could be caused by stopping airflow to produce the long consonants. Subjects would hear the air stop as long vowel. There are also cases where the subjects heard the short vowel as a long vowel.

Type D, other types of misperception, are cases where the subjects could not perceive a palatalized consonant. There were also difficulties in distinguishing between a voiced and a voiceless sound. One example is perceiving the voiceless palatalized consonant /ch / as a voiced palatalized consonant /j/. Another example is perceiving the voiceless /t/ as a voiced /d/.

Correct answers and self-assessment

We conducted a self-assessment on the second group of subjects at the time of the second test (after introducing hiragana) and at the time of the third test (at the end of the semester). The subjects assessed themselves using a scale from 0 to 5: "Strongly disagree" to the question ranks a 1. "Disagree" is a 2, "I do not know" is a 3. "Agree" is a 4, and "Strongly agree" is a 5. The questions are as follows.

Questions: (After introducing hiragana):
(a) Overall do you think you catch Japanese sounds better after learning hiragana letters in this class?
(b) Do you think you catch Japanese long sounds, stopped sounds, and Y-sounds better after learning hiragana letters in this class?

Questions: (At the end of semester):
(a) Overall do you think you catch Japanese sounds better after learning Japanese in this class?
(b) Do you think you catch special Japanese sounds (long sounds, stopped sounds, and Y-sounds) better after learning Japanese in this class?

Table 5 shows number of correct answers and the self-assessment score from each subject.

The average self-assessment score is 4.0 on question (a) (overall is better) and 3.7 on question (b) (special sounds are better) after introducing hiragana. It became 4.0 on question (a) and 3.8 on question (b) at the end of the semester. The score does not represent a big difference. As for the correlation between self-assessment and hearing ability, there is a tendency for subjects who could correctly catch sounds more than 40% of the time to think they perceive Japanese sounds better at the end of semester (self-assessment is more than 4). The subjects who ranked themselves a 3 did not perceive Japanese sounds well. There is a positive relationship between self-assessment and hearing ability. There was one subject who gave herself a 2. This subject withdrew from the course at the end of the semester in spite of doing better than some subjects who rated themselves high. This suggests that if learners give themselves a lower number than they deserve, it affects the learner's commitment to learning.

Correlation between perception of Japanese sounds and the learning period

Min (1993) reports that there was no correlation between the results of a hearing test by Japanese language learners and their learning period. To test this claim, we conducted the same test on JA102 learners who had finished one semester of Japanese. The ethnic background of these subjects is Chamorro and Filipino. Their first language is English. The result of the JA102 learners does not show a significant improvement in the perception of sounds. The results are shown in Table 6. The average number of correct answers at the beginning of the semester is 35.9%, which is higher than JA101. It became 42.27% at the end of the semester, which is lower than JA101. The highest increase for an individual subject is 100.00%, and the lowest is -66.67%, both of which are lower than the JA101 subjects. The highest individual subject score at the beginning of the semester is 62.5%, which is lower than the JA101 subjects. The lowest score is 12.5%. The highest score at the end of the semester is

66.67%, and the lowest score is 8.33%, both of which are lower than the JA101 subjects. The increase rate through the semester is just 17.39%. Our data shows that hearing ability is more easily influenced at the very beginning stage of learning.

Table 5 Self-assessment results by subject

Subject	Beginning of semester Number of Correct Answers (%)		After Introducing hiragana Number of Correct Answers (%)		Self-Assessment (a) overall better	Self-Assessment (b) special sound better	End of semester Number of Correct Answers (%)		Self-Assessment (a) overall better	Self-Assessment (b) special sound better
#1	8	(33.33)	14	(58.33)	5	4	16	(66.67)	5	5
#2	1	(4.17)	1	(4.17)	3	3	3	(12.5)	3	3
#3	14	(58.3)	11	(45.83)	4	4	13	(54.17)	4	4
#4	7	(29.17)	7	(29.17)	4	4	10	(41.67)	5	5
#6	1	(4.17)	5	(20.83)	4	4	4	(16.67)	3	3
#7	11	(45.83)	7	(29.17)	4	4	10	(41.67)	5	3
#8	2	(8.33)	3	(12.50)	4	3	5	(20.83)	4	3
#9	5	(20.83)	16	(66.67)	3	3	13	(54.17)	4	4
#10	4	(16.67)	5	(20.83)	4	4	17	(70.83)	4	4
#11	11	(45.83)	20	(83.33)	5	5	22	(91.67)	5	5
#12	4	(16.67)	10	(41.67)	4	4	17	(70.83)	4	4
#13	10	(41.67)	12	(50.00)	4	3	16	(66.67)	4	4
#15	4	(16.67)	6	(25.00)	3.5	3.5	9	(37.5)	**2**	**2**
Average	*6.31*	*(26.28)*	*9.0*	*(37.50)*	*4.0*	*3.7*	*11.9*	*(49.68)*	*4.0*	*3.8*

Table 6 JA102 students' dictation test results

Subject	Beginning of the semester Number of correct answers (%)		End of the semester Number of correct answers (%)		Increased Rate
#1	5	(20.83)	6	(25.00)	**▲20.00%**
#2	6	(25.00)	2	(8.33)	**▼-66.67%**
#3	7	(29.17)	11	(45.83)	**▲57.14%**
#4	15	(62.50)	14	(58.33)	**▼-6.67%**
#5	7	(29.17)	12	(50.00)	**▲71.43%**
#6	3	(12.50)	2	(8.33)	**▼-33.33%**
#7	8	(33.33)	8	(33.33)	**0.00%**
#8	5	(20.83)	10	(41.67)	**▲100.00%**
#9	13	(54.17)	16	(66.67)	**▲23.08%**
Average	*8.625*	*(35.9)*	*10.125*	*(42.2)*	**▲17.39%**

Our results suggest the importance of instructor's attempts to improve the learner's sound perceptions at the early stages of learning. Knowing the effect of learning characters is also important. Some instructors do not attach much importance to writing Japanese characters, and even some

textbooks do not use Japanese characters at all, but use romanized alphabets. However, as our results suggest, learning characters can improve the learners' sound perceptions. Instructors should take advantage of the benefit from learning characters and teach them at the earliest stages of learning. This method applies to other languages too. Characters help learners to effectively recognize the sound system of a language.

Conclusions and Implications

Our results show that learners make four types of errors in perceiving Japanese sounds: non-perception, insertion, shortening & lengthening, and others. As many researchers have discussed, special morae are difficult to perceive for Japanese language learners. Our data also show that the syllabic nasal inside a word like _untenshu_ is difficult to perceive. Muraki and Nakaoka (ibidem) state that the syllabic nasal in front of the same type of nasal sound is difficult to perceive. However, their claim cannot explain our results. Subjects are sensitive to even a slight stoppage of airflow and sonority, and they could mistakenly perceive them as a long consonant or a long vowel. In our data, there are many incorrect answers made by inserting a long consonant or a long vowel. Many of these occurred at the ends of words, in front of a syllabic nasal, plosive, affricate, trill, or fricative sound. There are also cases where subjects heard the syllabic nasal as a long sound.

Our results imply that it is hard for learners to acquire Japanese sounds from just listening. In addition, sound perception does not necessarily improve along with learning time. However, our data show that   introducing hiragana characters can   improve a learner's sound   perceptions.   This   paper examined the case of the Japanese language learner. But this can be generalized to include any other language instruction. We suggest that learning sounds along with learning characters is an effective method at early stages of learning.

References

Asano, M. (2007). Syllable Quality and Learners' Errors in Vowel Length, _Aspects of Linguistics: In Honor of Noriko Akatsuka_ (pp.243-254). Japan: Kuroshio.

Beckman, M. (1982). Segment duration and the 'mora' in Japanese, _Phonetica_, _39_, 113-135.

Campbell, W. N & Sagisaka, Y. (1991). Moraic and syllable-level effects on speech timing, _Denshijyohotsushin gakkai gijyutsu kenkyu hokoku_, _90_ (107), 35-40.

Hoequist, C. (1983). Syllable duration in stress-, syllable-, and mora-timed languages, _Phonetica_, _40_, 203-237.

Fukui, S. (1978). Perception for the Japanese stop consonants with reduced and extended durations, _Onsei gakkai kaiho_, _159_, 9-12. Nihon onsei gakkai,

Han, M. (1962). The feature of duration of Japanese, _Onsei no kenkyu_, _10_, 65-80.

Min, K-J. (1993). Nihongo sokuon no kikitori handan ni kansuru kenkyu, _Sekai no Nihongo kytoiku_, _3_, 237-250.

Minagawa, Y. (1995). _Nihongo gakushusha ni okeru chon chikaku no shoyoin -eigo/kankokugo washa no baai-,_ Paper presented at the meeting of the Heisei 7-nen-do Nihon onseigakkai zenkokutaikai, Japan.

Minagawa, Y., Maekawa, K. & Kiritani, S. (2002). Effects of pitch accent and syllable position in identifying Japanese long and short vowels: comparison of English and Korean speakers, _Journal of Phonetic Society of Japan_, _6_ (2), 88-97.

Muraki, M.& Nakaoka, N. (1990). Hatsuon to sokuon -eigo/chugokugo washa no hatsuon-, _Koza Nihongo to Nihongo kyoiku 3 Nihongo no onsei/onin II_ (pp.139-177). Tokyo. Meijishoin

Muroi, K. (1995). Problems of perception and production of Japanese morae- the case of native English speakers, _Sophia Linguistica Working Papers in Linguistics_, _38_, 41-60.

Oguma, R. (2000). Eigo bogowasha ni yoru cho'on to tan'on no chikaku, *Sekai no Nihongo kyoiku*, *10*, 43-55.

Oguma, R. (2001). Acquisition of Japanese long vowels production, *Nihongo kyoiku*, *109*, 110-117.

Oguma, R. (2002). A review of interlanguage studies in Japanese long vowels and short vowels, *Gengobunka to Nihongo kyoiku, May Tokushugo*, 189-200.

Sato, Y. (1993). The duration of syllable-final nasals and the mora hypothesis in Japanese, *Phonetica*, *50*, 44-67.

Uchida, T. (1993). Characteristics of auditory cognition of long vowels and double consonants for Chinese learners in learning Japanese language, *Japanese Journal of Education Psychology*, *41*, 414-423.

Uchida, T. (1998). Categorical perception of relatively steady-static speech sound duration in Japanese moraic phonemes, *Journal of the Phonetic Society of Japan*, *2* (3), 71-86.

Evaluation of a Sport Education Program in the Pacific Islands

Jeremy Dorovolomo

Abstract

A Nominal Group Technique (NGT) was implemented with the Oceania Sport Education Program (OSEP) Educators via email. An email was sent to 31 OSEP Educators in Pacific Island Countries (PICs), of which 6 replied initial responses, and 3 completed the NGT process. OSEP is a program of the Oceania National Olympic Committees (ONOC), and the study intended to solicit the strengths of OSEP and investigate areas the program could be improved. It was found that OSEP develops the coaching and administration knowledge and skills of participants, is viewed as flexible and relevant, fills a gap, provides a pathway for coaches and administrators, and is being delivered by knowledgeable facilitators. Participants suggested areas of improvement to OSEP in the continual review of the course contents, such as facilitating funding of OSEP activities at National Olympic Committees (NOC), making it a pre-requisite to Oceania Sports Federation courses, and issuing certificates in a timely manner for those completing the course. Delivery of structured sport education at community level is foundational to building Olympic sports in the PICs and of small and various island contexts, it is important to evaluate OSEP programs in the region.

Keywords: *Oceania Sports Education Program, Pacific Islands, Olympic sports*

Literature Review

Large scale coach education programs that attempt to train a large number of coaches in different sports, using many course conductors, need to be evaluated to gauge its effectiveness. The way the coach education program is delivered may vary widely among instructors (Gilbert & Trudel, 1999). This paper intends to highlight consensus from sport educators who have gone through the Oceania Sport Education Program (OSEP) of the Oceania National Olympic Committees (ONOC). It involves sports education delivery in many PICs such as Fiji, the Federated States of Micronesia, Kiribati, Palau, Papua New Guinea, Marshall Islands, Samoa, Tuvalu, and Vanuatu. It is a large operation, involving multiple educators, countries, NOCs, and sporting organizations.

Jenkins and France (2013) purported, in an evaluation of a sports programme over 19 countries, that it can have positive impact on sports participation, improved attitude towards women and those with disabilities, cultural awareness, and application of skills in other areas of life. Jenkins and France stressed that for multi-country sports programmes, a clear framework for delivery is important that takes into account short, medium and long-term outcomes. This framework should also focus on various levels of society, not only at policy, but people and practitioner levels as well. Moreover, regular communication and strong relationships among stakeholders are vital. Throughout the programme implementation, there needs to be embedded monitoring and evaluation, and external evaluators who give feedback on robustness of the delivery. For longevity, change agents can be identified and find ways to cascade training to other individuals (Jenkins & France, 2013).

Dugdill and Stratton (2007) posited the importance of evaluating sports and recreational programs more than once. In any sporting programs that are being implemented over a longer period of time, the evaluation framework should allow more than one evaluations in between. The purpose is to instigate program effectiveness and helps in program sustainability. Dugdill and Stratton suggested including the following in the evaluation: a) reach – which gauges whom the program reached, b) effectiveness – effectiveness in reaching goals, c) adoption – refers to the acquisition of relevant benefits and intended impact, d) implementation – entails how the program is delivered and managed, funded and resourced, and e) monitoring – is the monitoring and evaluation strategies put in place (Dugdill & Stratton, 2007).

Field (2014) emphasized that coaching programs must ensure that it prepares coaches for the real life of coaching. Coaches' experiences then are vital to shaping coaching programs. Therefore, it is not only gaining a qualification but experience massively helps coaches' practice. Coaching should involve a lifelong process that allows continuous learning and development which has a combination of continued certification as well as experience. The combination of a coaching program and experience can improve problem solving abilities and are important in a practical context (Field, 2014). Nash (2003) identified coaching program effectiveness as key to the development of coaches. In her study of Scottish and US coaches, Nash noted that skills coaches feel are necessary are normally not included in the coach education courses they attended. This points to the need for regular evaluation of coach education programs and the inclusion of participants' views in the design and re-design of the coaching curriculum. A difference Nash found between US and Scottish coaching was that in the American system coaches tend to work in a highly structured environment where they also generally have long-term commitment, have wider skills and into team coaching, while Scottish coaches appeared to emphasize an episodic and a single coach approach (Nash, 2003). Thus, this study sought to evaluate the Oceania Sport Education Program that was delivered in several countries in the Pacific Islands.

Methodology

The Nominal Group Technique (NGT) was used to gather information and consensus from participants. The NGT was developed in the late 1960s to enhance group problem solving. It consists of individual generation of ideas, having each group member's ideas shared by using round robin reporting, and ranking and polling of items to condense responses to specific solutions (Davis, Rhodes, & Baker, 1998). The NGT is advantageous in that participants work alone in the generation of ideas, avoiding the domination of extroverts and people of different hierarchy in the organization. It is a useful tool for decision making and arriving at consensus on ideas (Boddy, 2012). The NGT had been used in the areas of sports, physical education, and physical activity such as in identifying the environmental facilitators and barriers of physical activity among children (He, Cerin, Huang, & Wong, 2014), assessing environmental and parental influences on children's physical activity levels (O'Connor, Cerin, Hughes, Robles, Thompson, Baranowski, et al., 2013), eliciting sports leaders' views on facilitating sport participation (MacPail, Kirk, & Elery, 2003) or evaluating solution-focused coaching (Roeden, Maaskant, & Curfs, 2012). The NGT is a useful tool in the formal evaluation of programs or performance in organizations (Bailey, 2013; Lee-Han, Dwyer, & Johnson, 1996).

There have been modifications to the original NGT to suit circumstances. One is the use of cards to input ideas rather than verbal inputting (Bailey, 2013), an alternative that is rejected by a specified number of group members is rejected, and providing 'pause' in between processes to provide participants time to reflect on whether proposed solutions are adequate (Bartunek & Murninghan, 1984). Another modification utilizes an online NGT (Tseng, Lou, Diez, & Yang, 2006), while an alternative is to utilize the

email system to conduct an NGT (Russell, 2007). This study utilizes the NGT via emails due to having participants being scattered at different countries throughout the Pacific Islands. An OSEP Educator each from Vanuatu, Fiji, Samoa, Tonga, Palau, and Federated States of Micronesia responded, out of the 31 invitations sent out. The study incorporated NGT steps as suggested by Bailey (2013, p. 262-263) in the individual generation of ideas, recording of participants' ideas, discussions of generated ideas, and voting to rank the most important ideas.

Results

An initial email was sent to participants, explaining who the researchers are, explaining the NGT process, telling that their participation will be kept anonymous and that by participating they provide consent, and asking for the generation of ideas in the first step instructing the following:

For the first stage, please provide answers to these two questions by replying just to me on this email, not to the rest of those on the email listing:

1. Please provide what you see as the 3 strengths of the Oceania Education Program (OSEP).
2. Please provide 3 suggestions for the improvement of the OSEP.

Six of the 31 invitees responded to the first stage. There were 13 strengths and 17 areas of improvement recorded, making a total of 30 items. An email was sent with this list of suggestions for participants' to comment further or seek clarification on any of the items on the list. As example, one of the participants commented that:

There needs to be funding available for the program. This should be the job of NOCs [National Olympic Committees] to solicit possible funding avenues. Liaison with NFs [National Federations] on the program to be reviewed so that the program is accepted across the board. Marketing will follow suit and consistency in certification and follow ups to participants will flow. I strongly believe that the system and procedures needs to be in place first with the availability of funding (to have a full time officer to coordinate the program).

This participant was commenting on the funding, certification, and systems development and coordination aspects of the OSEP that were on the list of suggestions. Another participant commented:

Having lived in _____ and being there since the beginning of OSEP it was hard for us to be seen as 'Qualified trainers and assessors' as we were not recognized by the NOC body yet. We trained people in the villages/schools in the sports administration program out of our own desire and knowledge that it could work in _____. Our NOC was not supportive of what we were doing, nor did they care to support many of the NFs which have gained most of their support through Australian Aid: Pacific Sports Partnerships - Australian Sports Outreach Programs.

This comment points to the need for greater recognition and ownership of the OSEP program by NOCs, rather than seeing it as peripheral to their operations under ONOC. Only 3 of the 6 respondents participated in the final rankings. These participants then made rankings to the suggestions, as to which ones were their first, second and third rankings for both the strengths and areas of improvement listings. The study applied the 3-2-1 method of ranking and prioritization in a NGT (Hall, 2014), assigning 3 points

for the most important, 2 points for the item each individual regards second in importance and 1 point for the one considered third in their ranking of strength or areas of improvement.

Table 1 Rankings of OSEP's strengths using the 3-2-1 method

Items and rank	Votes	Points
1. It helps to equip, strengthen and increase coaching and administration knowledge and skills of youths and sports leaders (administrators and managers). Most of which are athletes turned leaders (coaches or administrators).	1, 1	6
2. Provides a structured learning and career pathway for the coaches to improve their practical skills. It fills the empty gap that coaches needed to better themselves so they can in return help better develop athletes.	2, 2	4
2. The program is very beneficial mostly because of the way it is taught/facilitated. The program has some very knowledgeable educators and mentors. They are able to understand/know the participants so they are able to address their learning needs individually and as a group.	1, 3	4
3. It increases professionalism in administration and coaching in the sporting leagues, associations or federations. Better management and delivering of activities.	3	1
3. Teaching and presenting in front of many people brings confidence.	3	1
Below are unranked items:		
The program is flexible and relevant to the development of sports in our island communities.	0	0
It enables Trainers and Assessors to be able to gain Cert IV Trainer and assessor qualifications from recognized institutions.	0	0

Table 1 shows that 5 items were ranked, as a result, will be considered in the discussions. 2 items were unranked and are eliminated from the NGT process.

Table 2 Rankings of OSEP's areas of suggested improvements using the 3-2-1 method

Items and rank	Votes	Points
1. The Training package of the Basic Sports coaching program needs to be improved as well as the lack of games resources provided in the training or link to resources from NOCs.	1, 2	5
2. Encourage NOCs to ensure that NF board members or staff complete OSEP admin courses (SiC, MiSO or MOSO).	1	3
2. Find ways to assist NOCs to secure funding to organize OSEP.	1	3
3. Encourage Oceania Federations to use OSEP courses as prerequisite criteria for their specific courses.	2	2
3. Systematic and up to date issuance of certificate to those that had completed the course.	3, 3	2
3. The process of those trained by the trainers and assessors in-country being accredited and recognized as being trained is not succinct.	2	2

4. Support in-country for those who are trained to continue on pathways of improving and up-skilling.	3	1
Below are unranked items:		
The course must be conducted for more than a week. Conducting a course for a week is not enough for so many information.	0	0
Better system of reporting. Need to set up the on-line data base for easy reporting and access to information.	0	0
There is a need to conduct more courses.	0	0
We need to do more hands on doing the activities, than sitting and listening to the instructor.	0	0

Table 2 shows the ranked items on the suggestions made by participants on areas that OSEP can be improved. The 4 unranked items are eliminated.

A limitation of the study is the 19% response rate and half this saw the NGT process through to the end. The NGT, being a more face-to-face tool, may have lowered the response rate, however, the NGT process via email may have induced some consensus on certain ideas that the OSEP may consider.

Discussion

This study aimed to investigate the strengths and perceived areas needing improving of the OSEP using a NGT to gain consensus. This study found that participants agreed strongly that OSEP helped equip and strengthen coaching and administration knowledge and skills of youths and sports leaders. These coaches and administrators are often athletes or former athletes themselves. Wiersma and Sherman (2005) studied 25 youth coaches and found that participants supported continuing volunteer coaching education. They argued the importance of continuous coach education as there are inevitable recruitment and retention issues with volunteer coaches and thus the need for ongoing coaching development. In addition, there is recognition too that carefully designed coach education can also improve retention. Participants to this study agreed that the OSEP provided structured learning and career pathways for coaches and fills an important gap in coach education. Jenkins and France (2013) support the notion of structured and clear delivery frameworks in the design of international sports program, which they advise should focus on different levels of society at policy, practitioner and people levels. They advised taking risks, learning lessons and supporting continuous improvement. Jenkins and France went on to reinforce the salience of integrating the program with the broader Olympic and Paralympic strategies. It is important to also work with lead delivery partners for greater impact and for the unique contribution they can have on the program.

As a consequence of structured OSEP delivery, participants in the study acknowledged that it helped increase the professionalism in the administration and management of sporting associations, leagues and their activities. These are mostly conducted by volunteers, as it would throughout the Pacific Islands. In the New Zealand context, Ryan and Martin (2012) stated that the traditional values of volunteerism and amateurism have been the essence of organized sport in the country. Few Olympic athletes derive a livable income from elite participation. Most elite athletes and coaches come from amateur systems who extol the mere gain from the cultural experiences of the sport itself rather than extrinsic rewards. Young and McChesney (2013) argued further that capitalizing on volunteerism is critically important, as a highly valued human resource, especially in situations where there are fewer human and financial resources to manage in order to complete core tasks. Volunteers are integral to the success of sports, but it is vital to ensure that they have "impactful experiences" (Young & McChesney,

2013, p. 26), in which volunteers feel they are making a difference. They also need to understand that they are making a difference. Misener, Doherty, and Hamm-Kerwin (2010), interviewed 20 volunteers who are older and in their 60s, and found that there were three positive volunteering experiences. The first relates to making a contribution and difference to the sport organization. The second pertains to being a sport volunteer enabled active living and the accrued health benefits. The third positive experience is the social aspect of friendship, social contact and relationships. It was also noted that the benefits to volunteering override the shortcomings such as inevitable tensions, anxiety and disappointment at times. In order that the volunteering experience is enhanced, it was stressed that there is a volunteering policy, better communication and coordination within the sport organization (Misener, Doherty, & Hamm-Kerwin, 2010). In the PICs, volunteerism and amateurism abound, making continual and ongoing coach education imperative.

This study found that participants agreed that the OSEP program has educators that are knowledgeable, are able to understand individuals and the needs of the group, and proficient in facilitating sessions. In addition, the study found that participants themselves were able to gain confidence by teaching and presenting in front of others. Ware and Meredith (2013), in their study of a sports program with Aboriginal Australians, emphasized the importance of quality delivery of programs in order to maximize engagement in sports and recreational activity. They also advised providing long-term sustained, regular contact between experienced sportspersons and participants to consolidate learning and continued involvement in the program. Jenkins and France (2013) reinforced this by saying that there is need to establish a champion or change agent who manages a steering committee in-country who can help with the program's sustainability. In the delivery of a sports program in multiple countries, there needs to be flexibility and tailoring the approach to each. There also is need to influence policy in order that program concepts and activities have a chance of being embedded and sustained (Jenkins & France, 2013).

In the suggested areas that OSEP could look into in improving its programs, the most agreed upon recommendation was to improve the training package of the basic sports coaching course by including games resources or to have link to resources on the NOC or ONOC website for access. Wiersma and Sherman (2005) see the importance of asking recipients of courses on the contents of course materials. In their study Wiersma and Sherman found that the contents participants see as of greatest concern were pedagogical, psychological and managerial aspects of coaching. Coaches in their study recommended the inclusion of mentoring between veteran and novice coaches, opportunity to discuss what works with other coaches and the availability of resources on a website (Wiersma & Sherman, 2005). Wiersma and Sherman (2005) assert that coaches' feedback are important to the structural changes to the format and content of coaching manuals, even if they challenge current standardized contents. Feedback such as these, provide OSEP opportunity to continually revise and tailor its program to varying contexts.

The second most agreed recommendation to the improvement of OSEP related to National Olympic Committees (NOCs). Participants suggested that NOCs encourage NF board members and staff to do OSEP administration courses. The other suggestion requests OSEP to assist NOCs to secure funding to deliver OSEP programs. In terms of helping NOCs fund OSEP-related activities, OSEP had started in 2015 a development grant that they can apply for, depending on their needs. The needs NOCs that applied for the grant were varied, from training sports administrators, coaches and physical educators; to establishing effective reporting; assisting community clubs; performing self-assessment; to awareness of community health issues. The OSEP delivers its administration and coaching courses year round at several locations in the Pacific Islands region but there is more to do. The grant will assist in the further development of

sports in the countries. It also rests on the NOCs to encompass OSEP and not to see it as peripheral to their activities and plans.

MacIntosh, Couture, and Spence (2015), in their study of challenges in an international sport and development program, found that funding and human resources constraints were major impediment to maintaining the program and curtailed achieving desired outcomes. Thus, funding and human resourcing issues are not unique to PICs. Robinson and Minikin (2011), however, cautioned that in the Pacific Islands, NOCs and NFs can be influenced quite heavily by external expectations of the Olympic movement in formulating their priorities and organizational structure. PICs are often reliant on Olympic Solidarity funds to finance their sporting plans which may be guided by various criteria set by the external agency. When programs are delivered in a manner without actually finding out what is relevant, among other implications, can lead to running coach education programs without an established competition structure (Robinson & Minikin, 2011).

As such, OSEP utilizes the Readiness Assessment Tool (RAT), a web application, to gather perceived deficiencies and strengths of NFs in PICs. It measures the level of development of NFs. It is a gap analysis tool with 8 pillars: governance, management, sport activity, communication, finance, physical resources, human resources, and values. OSEP attempts to minimize wasteful use of limited funds. According to Robinson and Minikin (2011) this is crucial as spending resources effectively is important for sport managers in a milieu of scarce financial resources. Robinson and Minikin went further to explain that in the bid to achieve at the elite level, PICs and NOCs may often spend most of their resources on high performance and this puts pressure on managing sport development priorities, or vice versa. Pursuing both elite and sport development goals demand different delivery systems and rigor and stretched resources will be a disadvantage to adequately cover both (Robinson & Minikin, 2011). NFs need to be involved in programs and activities that meet their objectives and that they are capable of delivering. In Pacific Island NOCs, funding for coach education, for instance, could be sourced from the Olympic Solidarity scheme, but if provision for infrastructural development and a competition structure are not in place, there could be difficulty in the capacity of sport organizations to implement relevant programs. In other words, in order for sporting organizations to have an effective development and implementation strategy, they need to match capabilities of the internal environment with the opportunities available in the external environment. This is why sporting organizations need to conduct a thorough internal review to establish strengths, weaknesses and their capacities (Robinson & Minikin, 2011).

Participants to this study also want to see Oceania Sports Federations to use OSEP coaching courses as a prerequisite to their sport-specific ones. To date, OSEP forged partnerships with Oceania basketball, table tennis, hockey, volleyball and badminton, to implement OSEP courses in conjunction with their sport-specific activities. OSEP is planning to form further alliances with other Oceania Sports Federations. The final areas that participants suggested for the improvement OSEP surround issues of certification, accreditation and professional development. Participants suggested the systematic and up-to-date issuance of certificate to those that had completed the course. They also wanted clarity of accreditation and recognition of their certification and that there is support in-country for pathways to continued up-skilling.

When a coaching program is being implemented, Vickers and Schoenstedt (2011) noted that participants would want to know the adequacy and recognition of a particular certification. Thus, clear standards, competencies and certification are critical to producing coaches that can provide quality experience for athletes. OSEP has a framework that guides its delivery of programs and works towards having the program awarded in existing educational institution such as have been achieved at Kiribati and

Palau. Continuous coach development needs attention to ensure athletes' experiences are positive. The adequate preparation of coaches should continue to be priority in PICs, as so many individuals and children go through sporting activities each year. In the US context in 2006, for instance, 57.3 million children under the age of 18 participated in organized sports (Vickers & Schoenstedt, 2011). Even though the athletes' experiences in the participation in sports, whether positive or negative, are all not necessarily from coaches, as there are parents, administrators and other officials involved, but coaches and continuous coach education are important to productive outcomes for participants to sporting activities in the PICs.

Conclusions

Evaluating OSEP Educators' perceived strengths and areas needing improvement was a valuable exercise to guide revision and input into programs that OSEP delivers in the Pacific Islands region. Due to myriad of situations, contexts and needs, it is of importance to continually gauge views of those who implement programs in the PICs. The manner in which the OSEP was delivered was positively received, providing opportunity for growth rather than being prescribed and simplistic. Facilitators were seen to provide an environment that is educative, secure and supportive. By developing structured resource packages, however, OSEP provided consistency, even though it is no guarantee that any two groups of coaches graduating from the same course will have been coaching similarly due to individual differences and context. It is therefore important to contextualize the objectives and assessment of the coach education course. The OSEP may offer the only opportunity for many to attend coaching and administrative courses and can provide a pathway for continuous development for coaches. Professional development intends to bring about positive change and improvement and such evaluation will help guide reforms and changes to the way sport education is delivered in PICs.
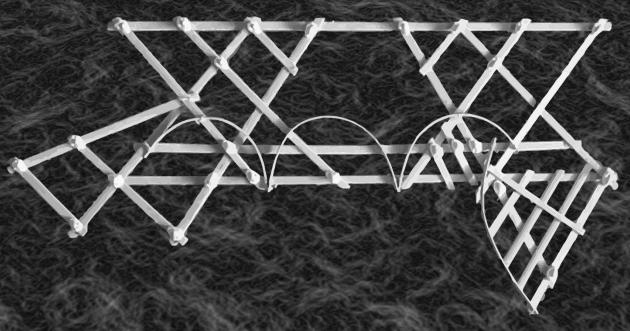
References

Bailey, A. (2013). The use of nominal group technique to determine additional support needs for a group of Victorian TAFE managers and senior educators. *International Journal of Training Research, 11*(3), 260-266.

Bartunek, J. M. & Murninghan, J. K. (1984). The nominal group technique: Expanding the basic procedure and underlying assumptions. *Group and Organization Studies, 9*(3), 417-433.

Boddy, C. (2012). The nominal group technique: An aid to brainstorming ideas in research. *Qualitative Market Research: An Internal Journal, 15*(1), 6-18.

Davis, D. C., Rhodes, R. & Baker, A. S. (1998). Curriculum revision: Reaching faculty consensus through the nominal group technique. *Journal of Nursing Education, 37*(7), 326-328.

Dugdill, L. & Stratton, G. (2007). *Evaluating sport and physical activity interventions.* Manchester, University of Salford.

Field, P. (2014). *An evaluation of UKCC level 1, 2 and 3 coach education coarses and whether they adequately prepare coaches for the realities of coaching.* (Bachelor of Science Honours thesis, Cardiff Metropolitan University, Cardiff.

Gilbert, W. & Trudel, P. (1999). An evaluation strategy for coach education. *Journal of Sport Behavior, 22*(2), 234-250.

Hall, H. (2014). *How to perform the nominal group technique.* Retrieved November 17, 2015, from http://www.pmsouth.com/2014/05/08/how-to-perform-the-nominal-group-technique/

He, G., Cerin, E., Huang, W. Y. & Wong, S. H. (2014). Understanding neighbourhood environment related to Hong Kong children's physical activity: A qualitative study using nominal group technique. *Public Library of Science(Plos) One, 9*(9), 1-7.

Jenkins, S. & France, J. (2013). Final evaluation of the international inspiration programme. London: Ecorys UK.

Lee-Han, H., Dwyer, J. J. M. & Johnson, I. L. (1996). Application of nominal group technique to evaluate a community health status report. *The Canadian Journal of Program Evaluation, 11*(1), 139-144.

MacIntosh, E., Couture, A. L. & Spence, K. (2015). Management challenges in delivering an international sport and development program. *Sport, Business and Management: An International Journal, 5*(3), 276-296.

MacPhail, A., Kirk, D. & Elery, D. (2003). Listening to young people's voices: Youth sports leaders advice on facilitating participation in sport. *European Physical Education Review, 9*(1), 57-73.

Nash, C. (2003). Coaching effectiveness and coaching education programmes: Perceptions of Scottish and US coaches. *International Sports Studies, 25*(2), 21-31.

O'Connor, T. M., Cerin, E., Hughes, S. O., Robbles, J., Thompson, D., Baranowski, T., Lee, R. E., Nicklas, T. & Shewchuk, R. M. (2013). What Hispanic parents do to encourage and discourage 3-5 year old children to be active: A qualitative study using nominal group technique. *International Journal of Behavioral Nutrition and Physical Activity, 10*, 93.

Robinson, L. & Minikin, B. (2011). Developing strategic capacity in Olympic sport organizations. *Sport, Business and Management: An International Journal, 1*(3), 219-233.

Roeden, J. M., Maaskant, M. A. & Curfs, L. M. G. (2012). The nominal group technique as an evaluation tool for solution-focused coaching. *Journal of Applied Research in Intellectual Disabilities, 25,* 588-593.

Russell, L. (2007). *10 steps to successful project management.* Baltimore: Victor Graphics.

Ryan, I. & Martin, S. (2012). The practice of intersectionality; The amateur elite sport development game. *Equality, Diversity and Inclusion: An International Journal, 32*(7), 688-700.

Tseng, K., Lou, S., Diez, C. R., & Yang, H. (2006). Using online nominal group technique to implement knowledge transfer. *Journal of Engineering Education, 95*(4), 335-345.

Vickers, B. & Schoenstedt, L. (2011). Coaching development: Methods for youth sport introduction. *Strategies, 24*(4), 14-19.

Ware, V. & Meredith, V. (2013). *Supporting healthy communities through sports and recreation programs.* Canberra: Australian Institute of Health and Welfare.

Wiersma, L. D. & Sherman, C. P. (2005). Volunteer youth sport coaches' perspectives of coaching education/certification and parental codes of conduct. *Research Quarterly for Exercise and Sport, 76*(3), 324-338.

Young, M. J. & McChesney, J. (2013). Contemporary trends in recreation volunteerism. *Journal of Physical Education, Recreation and Dance, 84*(6), 25-28.

TECHNICAL REPORTS

Use and Availability of Instructional Technology for Schools on Guam

Dean Olah

Abstract

When considering schools on Guam, there are many options - both public and private – on the United States Territory Island. The variety of educational K-12 options include various curriculum choices and resources. Similarities and gaps in these resources have not been explored. This study sought to investigate the use and availability of instructional technologies at a cross section of some of the schools and districts that were willing to share with the researcher. The data gathered reveals similar technologies available to students and teachers, and reveals opportunities for discussion on collaboration. The results of this study reveal possible gaps in teacher preparation as it pertains to instructional technology preparation and training. The data collected in this study can inform future teachers on Guam as to what is currently in use in various schools and help focus teacher preparation skillsets with instructional technologies.

Keywords: *Instructional technology, Guam, Teacher preparation*

In this age of technology, the use and application of information technology is being incorporated into every nerve of the world's economy. In a short while, it will be impossible to survive for those considered to be illiterate in matters IT. From this information revolution have emerged two new terms; instructional technology and educational technology. It is common theory to consider these two terms to be synonymous. However, there is a difference. According to the Association of Educational Communications and Technology, "Instructional Technology is the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning (Seels & Richey, 1994)." "Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technology processes and resources (Januszewski & Molenda, 2008)."

Development of such ideas is evidence that the impact of technology has found its way well into the teaching and learning processes. Instructional and educational technology is paving way for the future of education. We are currently in a digital age and the future shows prospects for more advanced technology than we have already seen (Smith, 2014). It is therefore necessary that schools prepare students who can adapt to the future technology, and one way to do that is to embrace the current use of technology in schools.

To fully realize the benefits of technology in our education system and provide authentic learning experiences, educators need to be properly prepared to use technology effectively in their practice Office of Technology Education, 2017). The Internet is connecting students and teachers across the globe. They can share information, curriculum and develop global learning communities. Digital gadgets are providing a problem-based learning environment that sharpens the students' skills through active learning. Moreover, these devices appeal to and activate the senses and thus provide individuals to develop their

intellectual and creative abilities. Despite these advantages, some drawbacks come along. Moral concerns surrounding the internet are a hot debate. Another boiling issue is the safety of student's sensitive data. There is doubt about just how safe students' data can be and who will have control over it access and manipulation (Nagel, 2013). How to effectively apply these technologies and whether they positively impact performance coupled with the challenge of online curriculum are some more challenges. The following is a report on the survey of use and availability of instructional technology in Guam K-12 schools.

The Problem

Borrowing from the increasing focus on use of instructional technology in schools, the purpose of this study was to establish the extent of the use of this kind of technology in Guam K-12 schools. More than that, it seeks to understand the availability of such kind of technology to the area. It surveys what kinds of technologies are available and how widespread is their use. The aim of data assembled form here is to assist the next generation of teachers in this island of Guam. It should give an understanding of the status of technology in this area and the potential available. Moreover, it will equip them to face the challenges revealed so they can handle them better and device solutions for their time. This is an age of computing and technology and the education sector has realized it cannot lag. It must keep up with the pace because the unforgiving technology will spare no sector its influence for good or bad. Conscious efforts are underway therefore, to harness the good will of technology for improved teaching-learning experiences. Just how far is this technological advancement in Guam? What are its impacts and what are the ensuing challenges for preparing future teachers?

Research Questions

The information gathered in this study was procured through interviews with directors of technology and technology leads at various schools. For this study, the following research questions were put forward to participating parties to lead the discussion;

1. Are there any iPads utilized in the schools?
2. Are there any Chromebooks and or android tablets utilized in the schools?
3. Are there any Computer labs? If there are any, how many are labs and computers? Do they use Mac, Windows operating systems or both?
4. Is the staff provided with computers? I f so, what computers are available to faculty, is it laptops or desktops?
5. Are there any 1-1 classrooms?
6. How many websites and or Apps and which one in particular does the district and/or schools have licenses for (brianpop, edutopia.....)?
7. What kind of Learning Management systems (LMS) are used? Do you have Blackboards, Moodle, Canvas, etc.?
8. Do you operate on E-binder or portfolio utilization (for example livetext, livebinder, TK20 etc.?
9. Do you have assistive technologies? If so, what kind do you have?
10. Do you offer Online - distance learning and is blended learning utilized, for example Google Classroom?
11. Does the school utilize interactive white boards like Promethean or Smartboard brands? If so, how many are available to teachers' K-12?
12. Are there plans and budgetary adjustments to acquire more boards?
13. Anything else you think may be applicable?

Procedure

The study was conducted through interviews. The above questions were organized into an interview which was then administered to different school management. The schools involved include;

the department of defense federal schools in Guam, Guam public schools, two charter schools and two private schools.

Results (From Department of Defense Federal School)
1. About interactive whiteboards, we have interactive whiteboards in every classroom in our schools K-12. The brand in use is Smartboard and we have a dedicated trainer/support person.
2. We have a pilot iPad program for our sped department in each school. However, we are facing problems with connectivity and using it to full potential because our network is secured and on backbone of .mil for DOD so our options are very limited. We are limited to the type of apps and cloud services we can use.
3. We have no chrome books. We are using desktops and laptops with restrictive operating system. They are also standardized across the department of defense.
4. We ran a 1-1 laptop initiative at our high school for the last four years with success. They are out of warranty now so we are back to labs there and in all our other schools. As a rule of thumb, we have a two to one ratio for computers and are on a five-year refresh cycle to keep our equipment up to date.
5. About websites, new cloud restrictions cut us from hundreds of different sites. We are only allowed subscriptions to only those vetted by headquarters and run through the department of defense security systems. That means we have about thirty only. PII requirements and third-party hosts access to our sensitive military data are the cause for limitations.
6. We recently adopted Schoology as our Learning Management System throughout our area of influence and it has proven to give us all the functionality we needed for our use.
7. We have nothing notable with e-portfolios.
8. We have good funding for our SPED population and have an extensive assistive technology library with generous staffing for our special needs population.
9. As a system we host an accredited online virtual school for distance learning courses that meet high school graduation requirements and offer kids in remote locations an opportunity to take courses not offered at their schools. This includes not only mainstream courses for remediation but also a variety of advance placement classes that may not be available to small schools with limited staffing.

Results (From Guam Public Schools)
1. There are approximately 300 Promethean boards in the district. The Enhancing Education through Technology Project has 200 of those distributed by school. Some are purchased from the local budget and the rest are Title V-A Funded.EETT has requested approval the 2016 Consolidated Grant Application to purchase 8 more boards. Career Pathways that works with our GCC programs at George Washington plans to purchase 12 more. There are plans to purchase portable, back-lit Promethean boards in the near future for all schools.
2. Yes, there are iPads used. Striving Readers is a discretionary Grant that has provided iPads to teachers in their program. I will be piloting iPads for Kindergarten in the next application with 7 K classes at Finegayan. Librarians have used some of their funding to purchase some as well.
3. We have been only using personal computers. The next purchase for student use will be hybrid laptops. We have not used chrome books before.
4. Most of the schools abandoned the computer lab model as the technology is best when integrated with the instruction. However, there was a request for a few schools to go back to a dedicated computer lab. These labs are approved in the present grant application. They will be outfitted with a mobile cart that houses 30 hybrid laptops, a projector and document

camera. 7 schools will have the newly equipped labs. Not sure how many of our other schools have a lab as a dedicated room.

5. We purchased using ARRA funds during my first year here, 1700 laptops for teachers. Not all teachers availed of the program. Teachers still may sign-out a laptop. Those 1700 laptops are recycled to new teachers if turned in by a teacher leaving the district or a contract teacher. Some teachers had some desktops in classes for student use. Prior to the laptop project, teachers would not be provided a laptop when they are hired. They would need to provide their own.

6. I hear of teachers that are having students use personal devices. As concerning a formal 1:1 program, we are not yet there. The new application as I mentioned above will provide a 1:1 all day for the kindergarteners at Finegayan but they will not be taking the iPads home.

7. I believe there is Brainpop. Khan Academy is popular and free. Curriculum and Instruction does purchasing of licenses and subscriptions with their funds. I am not sure what programs for sure.

8. We do not use a Learning Management System. However, we would love to have one especially for single-sign on for our teachers using multiple accounts/dashboards.

9. I am familiar with some schools using Livebinder. I have not heard of any others being used.

10. Absolutely. We have two team leads who oversee our assistive technology specialists in Special Education.

11. Several teachers use Google Classroom and several more are beginning after a conference in August where it was presented. We offer training for the district's student management system on-line for new teachers or those in need of a 'refresher' course. We will offer online courses in connected educator. In the next application, there will be bundles of on-line courses related to connected educators which will be 7 online courses teachers may take related to integration of technology in schools.

Moreover, we provide all our teachers with email. Student emails to conduct Google Classroom is just beginning. I was not comfortable with students using private email accounts. Our technical office creates a bank of emails for a teacher if they want the students to have email but in that case, the teacher manages the email account including passwords and password resets. 30,000 emails was a lot for us to just start providing to students.

Results (From the Charter School 1)
1. We have no interactive whiteboards.
2. There are no chromebooks in our school.
3. Yes, there is an iPad for every student. It is part of the curriculum and is integrated with McGraw-Hill applications.
4. There are no computer labs.
5. Faculty receive a Macintosh laptop computer.
6. We do not use a learning management system.
7. There are no electronic binders utilized.
8. We use the McGraw-Hill online apps and website.
9. There are no assistive technologies used at this time.
10. There is no Google classroom or other online learning used.

Results (From the Charter School 2)
1. We have one interactive whiteboard. It is not working and I am unsure of the brand.
2. We have 75 Chromebooks shared throughout the school.

3. We have 75 iPads shared throughout the school.
4. There are no computer labs.
5. Faculty currently supply their own computer and they receive an iPad.
6. We do not use a learning management system.
7. There are no electronic binders utilized.
8. We use the McGraw-Hill curriculum website.
9. There are no assistive technologies used now.
10. There is no Google classroom or other online learning used.

Results (From private school 1)
1. We have 44 iPads
2. We have 40 Chromebooks
3. We have a Lower Computer classroom with 16 iMacs and a classroom with 12 PCs. Neither is being used primarily for scheduled "lab" use, but rather as classrooms.
4. We have around 60 faculty members; each has an iMac. The total number of iMacs on campus is around 150.
5. We do not have 1:1 classrooms. We have carts of 12 MacBook Pros for MS, 10 iPads for MS, 16 iPads for LS, 16 Chromebooks for LS and 16 Chromebooks for MS that we use for 1:1 environments. The Upper School operates under the Buy Your Own Device policy.
6. We are not sure what to indicate for this one. We have some online textbooks that we are using and dozens of iPad apps as well. It varies greatly from room to room.
7. We are a Google Apps for Education school. The Lower School uses Renaissance Learning for online reading assessments and some math classrooms use ALEKS.
8. Not formally. I've been pushing for a portfolio program using Google Drive.
9. We have no assistive technology applied across our entire campus; the closest we have come would be in our ESL classrooms.
10. We use Google Classroom mostly. Some teachers use wikis or classroom websites.
11. Yes, we do use interactive whiteboards. We have 2 Promethean boards and several Mimio systems.
12. We have plans to acquire more boards but it is not possible without grant assistance.
13. My inventory sheet has approximately 480 technology items listed on it. Of that, 214 have been acquired through the Federal ARRA grants. Needless to say, the Federal assistance has been a tremendous help to modernizing Guam's public and private schools. I've conducted training sessions for department of education teachers starting in 2011. I'm not sure what the current situation is like in the public schools, but I hope the grant equipment is being managed and used efficiently. The teachers need meaningful professional development more than they need equipment.

Results (From the Private School 2)
1. We do not have any interactive whiteboards.
2. We do not use chromebooks
3. Students can bring in their iPads or other devices with parent/teacher permission.
4. We have one computer lab.
5. Faculty currently receive a windows laptop.
6. We do not use a learning management system.
7. There are no electronic binders utilized.
8. Some teachers use online learning sites but I do not have all the data for use.
9. There are no assistive technologies used now.

10. There is no Google classroom or other online learning used.

Discussion

The survey reveals that a few of the instructional technologies are available and are used both in private and public schools in Guam. The following sections discuss these technologies.

1. Interactive whiteboards

Interactive whiteboards are available in Guam schools. They provide for interactive learning. Users can control objects on the screen through a touch sensitive interface. They are advantageous in that they provide an opportunity to open all necessary resources needed for a particular lesson. The teachers can also input their lesson plans into the boards and find ready-made lesson online. Moreover, students with digital gadgets like iPads can access the boards remotely. In total, they provide an unforgettable learning experience by arousing the students' interest and mostly importantly changing their attitude. The Department of Defense Schools use the Smartboard brand while The Guam Public Schools use the Promethean brand. The federal school's boards are supplied through the federal government while the Guam Public Schools use a local provider who installs, supports and warrantees them. There is no local provider for Smartboard brand.

2. iPads

IPads are slate computers that are quite portable and can even be handheld when using. In Guam, they are used very sparingly in the public and private schools. One charter school utilizes the iPad for every student.

3. 1-to-1 computing

1-to-1 computing is an initiative to provide each student with their own digital device for learning. The push factor behind this idea is the need to have standardized online texts for students. Students cannot share devices because of that reason. Initially, laptops were preferred for the implementation of 1-to-1 initiative, but with the advent of newer devices, the preference has changed a lot. Now Chromebooks and iPads are the devices of choice for some schools. In Guam, Chromebooks are yet to make an impact in the area because they are a relatively new concept. They are only available in one private school and one charter school.

The 1-to-1 initiative however, has faced a myriad of challenges in Guam. The federal defense school for instance started a pilot project with laptops in their high school for four years, but eventually it failed due to warranty issues. Now they resorted back to computer labs. The major challenge with the initiative is acquisition of the gadgets and equipment necessary and maintaining it. Another challenge is unavailability of sufficient bandwidth to accommodate all students for internet access at the same time.

4. Online and long-distance learning

Online learning refers to the use of online tools for academic purposes. It encapsulates e-learning as well. Distance learning was created to allow student from any part of the world to enroll in an institution of their choice if they meet entry requirements. That way, a student can enroll in a college in another continent for instance without having to physically travel to the college. A combination of distance learning and on-site learning gave birth to the form of learning known as blended learning.

In Guam schools these facilities are sparingly established. Of the interviewed schools, the Department of Defense school has an option for distance learning for subjects not available locally. This subject is an issue under great debate and scrutiny the world over. There are concerns raised about its

credibility even with more and more people enrolling in online courses. Many stakeholders are in doubt of its accountability, while on the other end some states have made it a law for students to undertake an online course before they can graduate.

Its impact on learning, however, cannot be pushed aside. Students in remote areas are now able to access course and teachers from other areas without having to incur travel expenses. They get to do courses that eve n their own institutions where they are enrolled do not offer. In public schools in Guam, this facility has been extended to teachers as well. New teachers can enroll for the online courses. Even those who are not new can still do refresher courses on the online platform.

5. Websites and online resources

As the schools shift into the digital platform, they will require online curriculum and materials to replace the traditional hard copy ones. There is a great challenge in this part of the system. Restrictions and subscription requirements are limiting the amount of content available for teachers and students. Some free online instruction references and curriculum is available but it is a hectic task to dig into all of it to find suitable material. For this reason, the establishment of strong digital systems has become a challenge.

6. Assistive Technologies

Assistive technologies are available with the Department of Defense Schools and the Guam Public Schools. These services are not widely available at the charter and public schools.

7. Computers for Faculty

All schools except for one supplied faculty with laptop computers for their jobs.

8. E-Portfolios and Online Classrooms

Only one private school utilizes E-Portfolios and online classrooms now.

9. Chromebooks

Only one private school and one charter school uses chromebooks at this time. It is being considered in the Guam Public Schools.

Recommendations

For the teacher preparation, it appears that training on Promethean boards will be beneficial. Most of the teachers graduating from the University of Guam will be teaching in the Guam Public Schools. With over 300 boards and plan to acquire more, training on this technology would best prepare them for their jobs.

The Guam Public Schools are looking to possibly implement Google Classroom and Gmail into the school. Training for future teachers on this platform will be beneficial.

There is need to establish enough bandwidth to support digital academics. This topic was discussed with many of the technology directors as to the ability to get all students online in their schools. Wi-fi networks would need to be updated and improved in many cases.

More funding should be ploughed into this project for acquisition of equipment and maintenance. Considering the different socio-economic conditions of students, it will be wise for the institutions to be

able to purchase and warrant devices for their students. The bring your own device option may be applied for secondary institutions providing a secure network is available.

Attention should be given to the 1-to-1 initiative. It has potential to transform learning for students and families who lack the resources outside of the school.

All stakeholders should come together to develop a comprehensive curriculum for all the schools in their area. Moreover, they should organize online material and references into a pool of credible sources for easy access and sharing. This digital content can then be made available to all schools to overcome the policies that restrict access to it.

Conclusion

Several instructional technologies as presented above are available in Guam. Many of them are not fully established but they have found place in some schools and are being used adequately. It shows an incredible acceptance of these technologies in the area, right from interactive whiteboards all the way to digital gadgets. Some of them, however, like the use of e-portfolios is yet to be recognized and formally implemented. For such technologies, there is hope in the few teachers who are pioneering them despite them not having received formal approval. It is just a matter of time before they get accepted everywhere in the area.

With such funding as shown from the interview result, the use of instructional technologies is expected to grow soon. It is a challenge, therefore, to incoming teachers to be proactive and join the bandwagon. They are the future of these efforts started and they will determine their success. Knowledge from this paper should be used to equip these new teachers for the task ahead of them. This paper can may also be revisited in the future for updates on available technologies on Guam.

References

Januszewski, A., & Molenda, M. (2008). Definition. In Januszewski, A., & Molenda, M. (Eds). Educational technology: A definition with commentary (1-14). New York, NY: Routledge.

Nagel, D. (2013). 6 Technology Challenges Facing Education. Retrieved March 18, 2017, from https://thejournal.com/articles/2013/06/04/6-technology-challenges-facing-education.aspx

Office of Technology Education. (n.d.). Retrieved April 18, 2017, from https://tech.ed.gov/

Seels, B., & Richey, R. C. (1994). Instructional technology. Bloomington, IN: Association for Educational Communications and Technology.

Smith, A. (2014, April 16). U.S. Views of Technology and the Future. Retrieved April 18, 2017, from http://www.pewinternet.org/2014/04/17/us-views-of-technology-and-the-future/

Journal Reflections of Pre-Service Teachers during Teaching Practice on Fiji

Kusum Prakash

Introduction

This paper discloses the personal thoughts and feelings of pre-service teachers reflecting on their experiences during their second phase of a fourteen-week practicum in local schools on Fiji. Each reflection comes from the journals in its original form, part of an assignment at The University of the South Pacific, in Fiji. The journals are meant to express their hopes and desires for the classes they taught, their methods for dealing with issues as they arise, and the tribulations and triumphs encountered in the process. These are noteworthy if highly subjective anecdotes that one assumes are of intrinsic interest to both scholars and prospective pre-service teachers. They are certainly of interest to the Practicum Coordinator, who needs to observe and scrutinize the pre-service teachers' experiences. There is a need to focus on the meaning of the experiences from the trainees' perspective, and to scrutinize those events which are unexpected. Successes and failures are equally significant; indeed, disappointments expressed by the trainees might provide valuable insights into the relative effectiveness of the practicum.

The purpose of this paper is to primarily disclose the journal reflections, with a subsequent paper being tasked to interpret the major issues that arise, and the meaning and significance of these issues for teacher training. The goal is of course to increase teacher efficacy through teacher preparation programs. The challenge remains for the Coordinator as she struggles to refrain from short-term judgment and remain focused on a fine balance between accomplishing the university teaching goals and processing the experiences of teaching reflected in the student journals.

Literature

Teaching practice is a reliable process in an authentic setting where the pre-service teachers experience and demonstrate the sum total of curriculum and teaching competencies learnt at the teacher institutions, under the guidance of a experienced and competent teachers. A compact, efficiently organized practicum beats any textbook explanation of the school and classroom. It places the teacher trainees on the other side of the fence for the first time. They see the real world of teaching (Quick & Sieborger, 2005). And as such practicum provides for the genuine context within which the pre-service teachers are exposed to experience the difficulties and richness of the practicality of being a teacher. Daher (2013) believes that practicum is the most powerful instrument of education to bring about desired changes in the trainees. Reflection gives teacher trainees the opportunity to evaluate the effectiveness of one's own teaching during the practice stage.

The student teachers' feedback on their experiences need to be part of the focus for teacher educators and education experts to improve and if need be, restructure and revamp the teacher preparation program, thereby increasing the power of teaching. Tisher (1990: 76) reports that "student

teachers believe that the practical experience of observing expert teachers, receiving feedback, and practicing strategies are the most important factors in their growth as teachers". Hougan (2008) believes that the pre-service teachers' self-reflection should not be a difficult process. He further articulates that sometimes just writing down a few notes on what they can improve on is enough. The main idea is to find a system that allows the trainees to adjust and improve on their lessons.

Context

The excerpts come from the pre-service teachers from The University of the South Pacific, in Fiji, who are undertaking their second phase of fourteen weeks practicum in schools. They all had been asked to write a 'Reflective Journal' on their teaching practice experiences. It can be determined from the excerpts that the trainee teachers gained relevant opportunities to learn from the school professionals. It also seemed to break their personal myths of being successful teachers in the classroom and gave them great opportunity to learn a lot of teaching and classroom management skills from the teacher experts in the schools.

Organization

The pre-service teachers' excerpts are divided into three sections. The first one states the students' specific comments on their first experience in the classroom during practicum. The second section lists the trainees' comments on teaching practice in general. And the final section notes the student teachers' concluding remarks on their experiences.

Section One: Specific comments on Pre-service Teachers First Experience in the Classroom
Respondent 1

It was the first day of my first-ever teaching round. I was excited but anxious, so to keep calm I concentrated on my breathing. I was to teach lesson one, two and three! I was fairly jittery. This must be what's it's like to be on fire,' I thought to myself. My stomach was churning and I was beginning to wonder what I was about to undergo. First up would be Chemistry. OMG! I was badly perspiring by the time my associate teacher came to take me to the class. The waiting was over. 'OK, here goes. I will be ok, I told myself.' I followed my teacher to the classroom. 'So you ready to start' he asked. 'Oh, yes' I said a little hesitantly. Then I croaked, 'But I am really nervous!' When we arrived at the class he introduced me. His eyes focusing in on me, and I looked down feeling uneasy. 'Now', he started, 'Be nice to madam. She's a bit nervous.' Forty four pairs of devilish and now intrigued eyes turned on me. Aagh! I felt so tiny.

Respondent 2

The beginning was hard, for I remember at the university you're hearing all these ways and methods and it all sounded so easy. But when you actually get out there in the schools it's different, when you try putting it into actions. I was sort of stumbling through things and making many mistakes, it was a real struggle and a real battle. What I didn't really have was any modeling to follow.

Respondent 3

I can still remember my first day at school, students staring as I walk by them; teachers looking on, busy getting sorted for the day. I felt like I could hear their thoughts: who is she? Why is she here? A parent or new teacher? I was told to see my Head of Department to inform me of who was going to be assigned as my Assistant Teacher.

Respondent 4

On the very first day of school, after assembly, I was told to go and supervise a year 10 class and I was shocked in surprise that no teacher will be assisting me there because the school was running short of teachers at that moment. As I entered the classroom with a student, the fifty plus students kept on talking with each other. Suddenly, they all became calm and then I introduced myself to them. At that moment I made a mistake by saying to them that I am a practical teacher because some of the students take that as an advantage.

Respondent 5

Seeing unfamiliar faces and being in the environment which was very new to me with the different vernacular language spoken gave me a similar feeling of those who were lost in the wild jungle. Those people who were always helplessly seeking for comfort and refuge when they were in the middle of the jungle without knowing where to move to. I really didn't believe what I faced that moment because when I prepared myself to school that morning, I thought that I would face no problem. I thought that the situation would be similar with what I had been into during my school years back in my country. However, this was very distinct from what I thought and so the fear of staying in this new school expanded inside my body.

Section Two: Overall comments on teaching practice experiences
Respondent 6

I am fascinated with my profession because I have learnt that a teacher not only teaches a subject or a language, a real teacher teaches about life.

Respondent 7

During the observation period one trainee wrote: I fell asleep in class. Then, I dreamt about playing volleyball with my friend. Unconsciously, I threw my pencil case to the blackboard and all of a sudden the class became so quiet because of me. Instead of scolding me, my associate teacher cracked a joke and all the students laughed.

Respondent 8

I found that this job could be quite stressful. During the early weeks of my stay, all the trainee teachers were given lots of supervision each day. Never would a day go by when we were not given less than three supervisions. My associate teacher gave me a simple advice. He said for me to learn to say no to teachers or I would not be able to meet the requirements of my university course.

Respondent 9

Given very less time, I felt that I had adjusted well with the new environment, learning the content from teachers, how to teach better, how to control students, what to do when students do not listen, how to explain to academically poor students.

Respondent 10

Sometimes the teachers complained that some of the forms were very mischievous so I took up the challenge to go and test whether I could handle the students. At first, I felt that by scolding children, I can gain respect but soon I realized that I was only creating fear and hate for myself. There was a huge shift in my technique of controlling students.

I became friendlier, yet more firm than before rather than being a person who scolds children all the time. While observing other teacher's classes, I did not focus on the content but rather on the style of the teacher. I always asked myself whether I could do something similar to the teacher. My style however was very different from other teachers. I felt that the students should be given the content as a puzzle to do and true learning would occur when they themselves make sense of it.

Respondent 11

I felt that this job was quite stressful but one should not get angry and should always mingle with other teachers to relieve bad moments. My associate teachers taught me to keep laughing and enjoying with teachers once you are outside the class.

Respondent 12

I was given a white board marker to write notes in the class but I was scared to use that in class because I was not used to it. My writing on the white board was very horrible so I was writing slowly and that was one drawback and challenge for me.

Respondent 13

I was blessed enough to blend well with the teachers in sharing their teaching skills with me. For example, in the science lab they were able to show me how to improvise and to change teaching technique in a difficult situation during delivering of lesson to students. I wish I had these teachers during my schooling year at high school.

Respondent 14

One challenge I faced during my practical was controlling large classroom having total roll of 45-50 students. This is where classroom control is so difficult to maintain in the allocated one hour period. As a result, it consumes a lot of time and teachers do think that it's a factor that teachers could not achieve their task.

Respondent 15

The challenge I faced was coping with slow learners. I did not account them as slow learners that might race discrimination with upper students. I had to be patient with them, apply multiple teaching techniques that enable them to understand. Although it was tough I really enjoyed it as I tend to lift their standard. The problem arises when there is late in coverage then I have no choice to deliver the lesson at a very fast phase that leaves slow learners behind. At times, I feel incomplete with my work seeing this slow learners perform poorly.

Respondent 16

The only failure I encounter is the implementation of constructive learning to large number of students as in year 3, 4 and 5. It was difficult to control the class and the resources provided were very limited to large class. At times, I ran out of time for the reason of managing the class.

Respondent 17

One of the most significant things I found out was that teachers were very skillful and talented. All the teachers I observed had their own techniques and were also resourceful when delivering their lessons. Also, they were always well prepared and active inside the

classroom. This really helped them in capturing the students' attention and to achieve the objectives for that lesson. Teachers' extraordinary teaching strategies were clearly shown by students' obedience and interest in the lesson.

Respondent 18

I came to realize the importance of group activity whereby students learnt a lot from their peers since they understood each other better. The students were very responsive and performed better. When the head of social science department came to assess me I used group work and moved around the classroom directing and motivating students and explained in the language they understood better. My reporter commented that she learnt a lot from me because her class was teacher centered all the time. I came to realize that though we are student teachers but we can still make a difference and influence others

Respondent 19

My associate teacher was a university graduate of year 2000. However, his students were all I- taukei and the teacher always found it difficult to understand his students or to impart knowledge to the students as the students are poor in English. Also the teacher does not know his content well. Thus, it was really relieving to him when I came. I had to take his classes, teach the students and translate my teaching in I'taukei language. Through this I had to do research and extra reading on the content. I had to go another mile. This had helped me a lot and I gained a lot of knowledge.
[*I-taukei* refers to Indigenous Fijians].

Respondent 20

From what I observed and learned from the teachers I thought that when it came to my time to take the class, teaching would be very easy. However, my assumptions were incorrect since the time I started my teachings. Most of the students from the year I was assigned to burdened me with the way they reacted and behaved inside the classroom. I didn't believe my eyes to see that most students always behaved differently from what I had observed before. Take for instance, if they wanted to stand up or shout out to their friends in the classroom despite the fact that I was there teaching them, they just did it pretending that I did not exist inside the classroom. I was very frustrated with the way they behaved.

Respondent 21

Almost three times in a week there is staff or department tea. This is a good thing because teachers and the admin staff get to meet, discuss, and share ideas and problems. It also makes the teachers feel superior that their hard work is appreciated by the school.

Respondent 22

Taking part in events such as prefects' induction, Easter service, inter-house , inter-school sports competition and parents teachers interviews organized by the school taught me a number of important lessons. The most important lesson that I had learnt here was that teachers' responsibility was not just to develop students' academic performance only but to develop other performances as well such as physical and spiritual performances.

Respondent 23

One very common thing I noticed was that students make noise when we go to supervise. I knew the saying that I 'An empty mind is a devils workshop' holds very true. To overcome this problem, I started talking to the students and sharing with them interesting educational games, jokes, moral stories, and riddles, etc. I saw that students get excited and get involved in all this and they actually share some of theirs as well and do not make unnecessary noise. I realized such activities could be very good teaching strategies to gain student attention and make class interesting.

Respondent 24

One of the common problems with ethnic school is that I-taukei students are swearing in their language to subject teacher and other non I- taukei students. In the beginning I would get irritated and often counseled students with regards to this problem. Until I realized that students could have developed this method to buy into my class time so I applied the technique of ignoring these swears in the class and continued teaching. In two weeks' time I noticed that this behavior began to reduce and students knew that despite all the swearing the class would continue as planned.

Respondent 25

One of the things I appreciated was the recognition of special children in school and helping them to learn. These children have been neglected for having learning problem for a long time. It was good to see that teachers and the principal were taking out time to help them overcome these problems. I saw that giving them attention has made them keen to study.

Respondent 26

My experience with my university lecturer was quite a memorable one because with all my ready made plans and expectations for the lesson, it started with a few students coming in late to class after lunch which I had to address before the start of the lesson. This added more to the pressure I was feeling at the time. That incident swayed me a little but I quickly got back on track with the lesson.

Section Three: Pre-service teachers' concluding remarks

Respondent 27

Just improved so much in teaching kids to think for themselves by asking productive questions. I don't think any university course could have given me what teaching practice gave me in these few months.

Respondent 28

Being a teacher means that we need to be a role model, have good leadership skills and knowledge and teacher who is friendly and kind.

Respondent 29

I would like to say that giving us a chance to do practicum at various schools before entering the real field of teaching was a worthwhile decision. This was because it enhanced our knowledge and skills with new ideas and teaching pedagogies on how to work with parents, our peers and students in a school. It also helped us explore the real environment of teaching in the sense that teaching was not only teachers major

responsibility in the school but also should be equipped with other various knowledge and skills in order to cater for students' other needs such as physical and spiritual needs.

Respondent 30

Personally, I experienced many great moments while teaching. These were days when I ended so happy and enthusiastic that I knew I had selected the right profession. On the other hand, I had days where I definitely questioned teaching as a career. These were days where the students seemed uninterested, too talkative, or even worse and nothing got accomplished.

Respondent 31

I had always envied myself as a confident educator. My first step in the school environment, I knew that I would excel because I was confident and thought I knew it all. But as my first week flew I found that it was different, it was challenging!

Respondent 32

Being organized and good planning are two things I learnt during this experience. Organization allows me to be an effective teacher. Throughout the whole process I found out that I am still learning. I will never know everything as there are always changes taking place. I have realized that I am a lifelong learner.

Respondent 33

When I first arrived for this practicum, I was not expecting to gain as much experience or inspiration than I had. For the first time I was able to see how the students respond towards me as a teacher and a playmate. I could tell with each and every one of them that they more than enjoyed their time with me. Even with the smallest facial expressions and body language, it was easy to see that they were enjoying every minute of the day.

Respondent 34

One of the important things that I learnt during my teaching practice is that lesson preparation plays a crucial role in the success of a lesson. If a lesson is prepared well, then the likelihood of having a great lesson increases. The opposite is true if one fails to make adequate preparation for a lesson. I realized that students are quite smart in a sense that some of them are able to make out if a teacher goes into the class prepared or not. I have seen that when the teacher is not prepared, class disturbances become a common occurrence where students are not focused and end up misbehaving.

Respondent 35

From the practicum that conducted, invaluable lessons have been learnt with regards to my role as a teacher. I now see that lesson planning is an integral part of the teaching and learning process. Without planning, one becomes susceptible to the taunts of students. They also lose their credibility in the eyes of the students they teach. I learnt therefore that relationships between teacher and students affect how teaching and learning occurs in the classroom. I found that good judgment must be used during lesson delivery to ensure that any change in the lesson plan is actioned. I also see that by taking time to reflect on my experiences, learning from my weaknesses and thinking of ways to improve in future lessons is a very important tool in teaching and learning.
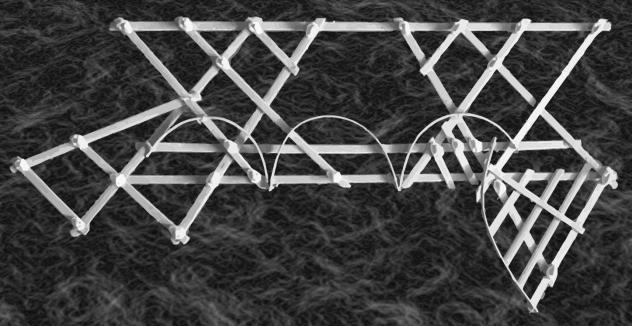
Summary

There has never been a "one-size fits all" solution to the issues and dilemmas of the pre-service teachers, but it is important to record and interpret their voices and different responses. Such raw subjective data provides the opportunity for positive as well as negative outcomes to be explicated for their meaning and significance. They provide opportunity to prepare for and practice what to do in the face of the unexpected, thus, completing the possible consequences of the responses. Hence, the anecdotes of the pre-service teachers' teaching experiences have been recorded in this paper in its raw form. The reader finds journeys of triumph and fear, of discovery, of learning and 'unlearning'. The old myths of classroom teaching have surely been demythologized in different ways by each individual. These journal entries, if interpreted rigorously in the proper context, may enable the trainees to face challenges and seek solutions to the challenges they encountered ranging from interpersonal to pedagogical issues.
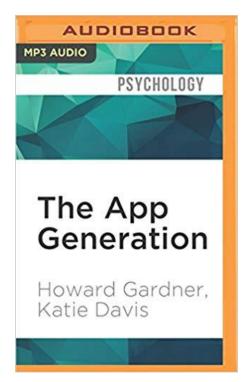
References

Daher, J. (2013, January 8). *Teaching and Learning process*. Slideshare:
    http://www.slideshare.net/sjaser/teaching-and-learning-process
Hougan, E. (2008). *Road to teaching: a guide to teacher training, student teaching and finding a job.*
    Charleston, SC: BookSurge. US.
Quick, G., & Sieborger, R. (2005). What matters in practice teaching? The perceptions of schools and
    students. *South African Journal of Education.* 25 (1). 1-4.
    http://www.ajol.info/index.php/saje/article/view/25009
Tisher, R.P. (1990). One and a half decade of research on teacher education in Australia. In R.P. Tisher &
    M.F. Wideen (Eds), *Research in Teacher Education: International Perspectives.* 67-87. London:
    Falmer Press.

REVIEW ESSAY

I App, Therefore I, Like, Sort of Am (for now)

Howard Gardner and Katie Davis, *The App Generation: How Today's Youth Navigate Identity, Intimacy, and Imagination in a Digital World*. Yale UP, 2014.

Reviewed by C. S. Schreiner, University of Guam

Avery: "I don't like digital."
Sam: "It's where film is going."
Avery: "Well, then it won't be film anymore."
--From *The Flick*, a play by Annie Baker[1]

Howard Gardner, a psychologist who holds a distinguished chair in the Harvard Graduate School of Education, is widely known and respected for his research on multiple intelligence, which showed that intelligence manifests itself in patterns and practices outside the officially sanctioned bicameral paradigm of verbal and mathematical reasoning.[2] Thought has an integral relation with imagination that produces, if we are willing to recognize them, a rich diversity of expressions. In theory, high school students previously rebuked for drawing seahorses and starfish instead of taking lab notes in biology class are to be lauded for their pictorial intelligence, itself a new label for the old wine hitherto called *visual imagination*. Gardner's discovery was indeed old news to philosophy, where it has been argued since the 1920s that the founding role of the imagination in the syntheses of cognition was insufficiently appreciated (if not suppressed) in Kant's *Critique of Pure Reason*. Put simply, to establish the purity of

---

[1] Annie Baker, *The Flick* (New York: Theatre Communications Group, Inc., 2014), 47.
[2] See Howard Gardner, *Intelligence Reframed* (New York: Basic Books, 1999).

reason, Kant downplayed the imagination that enables it.[3] In most secondary schools, alas, theory and practice go their separate ways, for old habits die hard; as Gardner observes in his new book, "arts programming has been sidelined or even eliminated as administrators place test preparation at the center of the curriculum and the heart of the day."[4] With fewer opportunities to flex their creative powers of expression in childhood, students adopt digital apps as surrogates, increasing the predictability of their creative efforts while diminishing experiments in style and genre (133). If digital app users lack prior craft experience or disciplinary savoir faire, their capacity for selective deployment of apps is stunted, and they become so dependent on them that apps serve a prosthetic function indistinguishable from the skill mastery of the artist or scholar. In short, rather than supplement achievement, the apps become its necessary precondition.

Gardner hoped to forestall such developments when he argued, in his earlier work, *The Disciplined Mind*, for the permanent place of art in the curriculum. His thoughts on this matter now strike us as idealistic, if not romantic: "It would be wonderful if each growing individual had some opportunity to create in an art form…Education early in life ought to provide such opportunities to think and perform in an artistic medium."[5] In retrospect, we see that the capacious, creatively inclusive approach he demonstrated in his path-breaking work on intelligence remained the hallmark of his subsequent efforts, as did his robust idealism. Gardner's intellectual ethos includes an admirable hospitality, as if the scientist in Gardner, however bound by convention, always keeps a place at his table set for the artist (as did William James and George Santayana, two of his esteemed precursors at Harvard.) His approach also presupposes a critical rigor*,* as when Gardner sought to desimplify or unlock stereotypes of intelligence, ways of knowing, and student achievement that had excluded outliers and eccentrics whose performance outcomes were not recognized by the conventional metrics of standardized testing. Implicit in such research is a *critique* of institutional norms that govern everything from college entrance criteria to student learning assessment.

As I read Gardner's recent study, *The App Generation: How's Today's Youth Navigate Identity, Intimacy, and Imagination in a Digital World,* I noticed that his hospitality is still functioning, but I wondered whether his critical acuity has to some extent waned. Gardner's fair-minded if not gregarious style of writing modulates the reporting of his recent controversial findings to facilitate discussion and avoid alarmism. In this text, based on a recorded conversation that took place in Gardner's office in 2012, his own voice and perspective are interwoven with those of Katie, his co-author and former student, and Katie's daughter, Molly, creating a harmonious interplay of testimonies regarding their radically divergent experiences with digital media technologies. Gardner, now in his sixties and born before the internet, is a digital immigrant, while Katie, in her thirties, and Molly, a teen, are digital natives. The narrative structure of the *App Generation* lends itself well to conveying generational differences among users of media technology and apps. But it is arguable whether the amicable to-and-fro of this anecdotal reporting is the best vehicle for conveying the urgency of the matter at stake, which is changing forms of truth, knowledge, memory, and identity under digital hegemony. The overall concinnity of the triadic flow of testimonies, not unlike shared reminiscences during a family picnic, starkly contrasts with appalling revelations concerning the unfreedom of young app users. These findings, sifted from dozens, include the following:

---

[3] See Martin Heidegger, *Kant and the Problem of Metaphysics*, trans. Richard Taft (Bloomington: Indiana UP, 1992).
[4] Howard Gardner and Katie Davis, *The App Generation: How's Today's Youth Navigate Identity, Intimacy, and Imagination in a Digital World* (New Haven: Yale UP, 2014), 147.
[5] Howard Gardner, *The Disciplined Mind* (New York: Penguin Books, 2000), 151.

- Inhibition of risk taking in learning contexts and career choices due to the possibility of making a mistake that leaves a digital footprint witnessed by "shame culture," resulting in a guarded, unadventurous existence clouded by *tedium vitae* or ennui. In the era of social media, "I am bored" means "I am afraid to be stimulated by something of which my peers disapprove."
- *Psychasthenia*, a condition ensuing from a user's constant online presence, "which weakens their sense of self to the point of full renunciation."
- Ephemeral self-esteem, lacking confidence, and based on images more than deeds, seeks hourly reassurances via online and cellular modes of communicative feedback: "Do I look good? Did you see my new handbag? Don't you think my lunch at Ruby Tuesdays looked delicious?"
- Anxiety and awkwardness in face to face contact with others, caused by the collapse of the distance afforded by screens and other interfaces of digital media.
- Habitual reliance on apps for speed and convenience, resulting in a reactive lifestyle that instantly connects users to programmed solutions and options without personal investment in the process or outcome. (77-86)

This alarming basket of behaviors identified by Gardner, which shows individuation scrambled by frantic outsourcing, represents deformations of adolescent selfhood whose ontological depths pose a challenge to the psychology that is Gardner's métier. It is curious that he detracts from the severity of his findings by questioning their merit in the following passage:

Much of what we've written in this book can be seen as critical of the current generation. Characterizations such as "risk-averse," "dependent," "superficial," and "narcissistic" have been asserted, even bandied about. We have to stress, accordingly, that even if these descriptors have merit, in no sense are we blaming members of the App Generation. Clearly, these characterizations have come about, at least in significant part, because of the ways in which young persons have been reared (or failed to be reared) by their elders—in this case, Howard's generation and the ones that immediately followed his. If there is a finger to be pointed, it should be aimed at earlier generations and not at the adolescents and young adults of our time. (167)

This passage epitomizes the softening effect of Gardner's prose, which, via a rhetorical slight-of-hand, partially withdraws or diminishes what his research has discovered, most likely to protect the feelings of young people such as Molly. The overall tone is subtly defensive. Instead of saying his book is critical, Gardner says it *can be seen as critical*. Furthermore, he attributes blame for the App Generation's behaviors to previous generations, most pointedly his own. Even if accurate, or credible, the blame gesture seems counterproductive, rendering the current crisis a cultural-historical *fait accomplit*, a situation that has *already* befallen young people, hence out of their hands. Hence the new generation is deftly exonerated; responsibility is annulled, let off the hook before it has a chance to respond. In this regard, it occurred to me upon completing *The App Generation* that its congenial mode of communication providing access to a wide audience, which has admirably served Gardner's mission in the past, now blunts the sting of findings that expose a cultural catastrophe in the making. In short, the virtue of his prose has become a vice. Catastrophe, however, is not Gardner's word, but the term Bernard Stiegler uses to summarize the "toxic, addictive, and self-destructive" use of digital technologies inducing "idiocy, stupidity, and foolishness," as well as "global attention deficit disorder," leaving "the human beings of the

twenty-first century totally defenceless and unarmed in the face of a situation that appears hopeless."[6] Here, on the contrary, is an extended example of Gardner's gregarious tone:

> Messaging apps remove risks associated with interpersonal communication by doing away with the discomfort one might feel when confronting someone face to face. Information apps take away the risk of giving an incorrect answer, whereas location apps eliminate the risk of getting lost in an unfamiliar place. It strikes Katie and Howard as a remarkable fact that Molly has never had the experience of being lost. Each of us can recall instances from our youth when we didn't know where we were and didn't have immediate access to a parent to guide us to familiar territory. Though scary, these experiences stand out in our memories because they tested our resiliency and gave us a sense of autonomy. Such experiences are foreign to Molly. With her map app and ability to call her parents at any time, she can always be sure of where she is and how to get to her next location…unless she loses her cell phone! (84)

Is it my mistaken impression that the exclamation which concludes this passage does not admonish Molly or judge a state of affairs, but conveys an avuncular tongue-in-cheek alacrity? If there is any existential truth in the adage, "one must become lost to find oneself," Gardner's observation that it is a "*remarkable fact* that Molly has never had the experience of being lost," seems a conspicuous euphemism. But to say *disturbing fact* would violate the neutrality of his congenial prose. The first-name intimacy of Gardner's discourse diminishes the cultural significance of a fact deemed remarkable solely by Katie and Howard. Be this as it may, an existentialist would be disturbed by such a fact, thinking: Molly has no idea who she is apart from the pre-given identity and app safety net on which she depends. Or rather, she knows *what* and *where* she *is* when wirelessly linked to other beings, but not what she can *do* bereft of her digital grid, in sovereign becoming under self-rule, autarchy.

Jean-Paul Sartre states his existential motto as follows: "Make, and in making make yourself, and be nothing but what you have made of yourself."[7] This credo, which deracinates identity from its soil and discards safety nets, is based on self-production or autopoesis, and takes being lost (or in Heidegger's jargon, *Geworfenheit*, "cast away") as a precondition of self-discovery. Such a credo seems anachronistic in the era of social media. Let me be clear that it is I, and not Gardner, who invokes an existential metric for the sake of contrast. Its very irrelevance, focused as it is on personal freedom, brings it into sharp relief against the reciprocally *reactive* operations of the hivemind criticized by Jaron Lanier.[8] These days, nothing seems more obsolete than the line of reasoning that derives from Hegel's dialectic of recognition and Kant's concept of respect (*Achtung*) to arrive at a valuation of human existence based on the degree to which an agent practices and upholds self-determination free from heteronomy. For an existentialist, trends are not automatically followed, but scrutinized on a case by case basis for their worthiness and merit. The agent does so through self-conscious critique, compelled to step back from the given and reflect "whether things might be otherwise than is assumed."[9] The ensuing act of deliberation by which

---

[6] Bernard Stiegler, *States of Shock: Stupidity and Knowledge in the 21st-Century*, trans. Daniel Ross (Cambridge, UK: Polity Press, 2015), 4; 12; 31.

[7] Jean-Paul Sartre, "A More Precise Characterization of Existentialism," in *The Writings of Jean-Paul Sartre: Selected Prose, Vol 2*. Michael Contat and Michel Rybalka, eds. Richard McCleary, trans. (Evanston: Northwestern UP, 1974), 157.

[8] Jaron Lanier, *You Are Not a Gadget: A Manifesto* (New York: Vintage Books, 2011), 48.

[9] Ernst Tugendhat, *Self-Consciousness and Self-Determination*, trans. Paul Stern (Cambridge: MIT Press, 1986), 306.

a decision is reached causes a phase delay, an interval filled with analysis and self-reflection which is the antithesis of technically enabled reactive behavior.

When Gardner speaks of "scary" experiences that "tested our resiliency and gave us a sense of autonomy," and which are "foreign to Molly," he refrains from arguing that such challenges, however disquieting, are integral to the formation of autonomous selfhood, without which Molly lacks opportunities to free herself from self-incurred forms of heteronomy that obstruct her enlightenment.[10] Instead Gardner leaves such challenges up to happenstance, historical contingency, rather than speak of their necessity. Gardner's narrative strategy defangs the rhetoric of critique, of critical argument. One would have to enter another semantic register to affirm uncomfortable experiences as indispensable *opportunities* for psychogenesis and personal growth. This is what Sartre implies when he speaks of the "virile uneasiness" of existentialism; it is as if uneasiness is a muscle flexed in becoming. His insight stems from his study of Heidegger's *Being and Time* (1927), which describes anxiety as a precondition of the human search for meaning and identity. A stone or tree does not trouble itself with the question, "Who am I, and what am I supposed to do with my life?"

By limiting his "lost" metaphor to spatial disorientation, Gardner bypasses the cognitive discomfort felt, for example, when a student encounters difficult reading material in class and exclaims, "I'm lost!" or "You've lost me!" Here an opportunity arises to press onward, to keep reading, ask questions, and make the material more familiar, since familiarity is inversely proportional to difficulty.[11] But as with spatial disorientation, rerouted via the GPS app, it is now customary to employ a handheld app, such as Wikipedia, to instantaneously outsource the discovery of meaning without working through it exegetically. With apps, the opportunity to achieve a sense of existential mastery or autonomous understanding vanishes. One demonstrates mastery of the app, not the experience. It would abruptly upend Gardner's discursive register to advocate cognitive discomfort as a positive and indispensable experience. He describes, but, ever decorous, never prescribes or advocates. The matter at stake here is illuminated by the case of R. G. Collingwood, who, at age nine, discovers Kant's *Critique of Pure Reason* on the bookshelf of his father's library, utterly fails to comprehend it, and vows to himself that he will not give up until he grasps Kant's philosophy. By getting lost in the pages of Kant, he eventually found himself and his career.[12] To exalt such an experience on campus today would be counterintuitive in the face of trends that seek to shelter students from discomfort, whether in the classroom, where reading material is selected to meet, rather than exceed, literacy levels, and in interpersonal relations, where levels of consensus in intimacy are coded by degrees of increasing discomfort. Yet, conversely, it would be counterintuitive for a tennis player to select a training partner that matches her skills instead of a partner that exceeds them. How does one improve, on the court or in the classroom, without what Sartre, in his magisterial *Being and Nothingness* (1944) terms a "coefficient of adversity"?

In view of what has been said above, my issue with Gardner is perhaps merely that of rhetorical expedience. Do Gardner's findings justify a pessimistic tone that his inveterate hospitality, entrenched in a gregarious style, refuses to invoke? Is there any added value, or veracity, in darkening one's tone? Are there times of crisis when the placid surface of scholarly prose, in refusing to sound alarms, by muting the

---

[10] Immanuel Kant, "What is Enlightenment?" in *Immanuel Kant: On History*, ed. and trans. Lewis White Beck (Indianapolis: Bobbs-Merrill, 1963), 3.

[11] See George Steiner, *On Difficulty and Other Essays* (Oxford: Oxford UP, 1978).

[12] See R. G. Collingwood, *An Autobiography* (Oxford: Oxford UP, 1982).

tintinnabulation of bells during a raging fire,[13] contributes to a dangerous complacency; a congenial tone which hindsight will accuse of complicity in the crisis? Crisis is in the eye of the beholder. It is noteworthy that most of the alarmist or unapologetically critical studies of digital culture, such as Nicolas Carr's *The Shallows: What the Internet is Doing to Our Brains* (2010), Jaron Lanier's *You Are Not a Gadget: A Manifesto* (2010), and Bernard Steigler's *States of Shock: Stupidity and Knowledge in the 21st-Century* (2015), are written by authors who do not hold permanent academic positions. The reason for this publishing pattern is arguably banal: professors who write about digital culture, embedded as they are in a technically enhanced milieu funded enthusiastically by uncritical peers and administrators, accept the infiltration of educational institutions and young minds by digital devices as a *fait accomplit* against which it is futile to protest. In his essay on the hive mind, David Bosworth says as much when he writes, "For good or for ill…the current shift from private monologue and intimate dialogue toward *virtually accessible* forms of multilogue appears to be irreversible."[14]

But with the new media infrastructure come the problems of destabilized identity and diffuse or scrambled epistemic self-determination among learners described by Gardner and the above-named authors such as Lanier and Stiegler. On the one hand, it is understandable that faculty members, in acts of self-preservation, adopt new media to reduce the psychophysical dissonance they feel upon seeing students, in classrooms and coffee shops, engaged with their smartphones instead of reading books or speaking directly to each other.[15] But it remains striking (at least to this writer) that the collective conformity of many teachers and students seems impervious to the critical studies of such behavior which continue to be published. Like the shipboard canons which impotently fire projectiles into the vegetal depths of the Congo described by Joseph Conrad in the opening pages of *Heart of Darkness*, critical treatises on technology vanish soundlessly among the populations of app advocates and addicts, apparently leaving no trace of their impact.

Gardner and his team of well-funded researchers are so prolific that it is a challenge to merely keep up with their scholarly output, let alone evaluate it for its cogency and pertinence. I had not yet fully absorbed Gardner's intriguing study, *Five Minds for the Future* (2007) when the title under review here caught my attention. The former study, whose catchy title evinces its speculative content, forecasts the five cognitive styles that will most likely gain traction and succeed, in school and the workplace, under the economic and technopolitical conditions of the future. These are the Disciplined Mind; Synthesizing Mind; Creating Mind; Respectful Mind; and Ethical Mind. The metaphorical nature of these categories epitomizes Gardner's capacious approach. Each category encompasses an amalgam of cognitive styles, skill sets, and dispositions with which students majoring in everything from the natural sciences, technology, business, social sciences, liberal and fine arts can concretely gauge the relevance of their respective skills and capacities for vocational success in the marketplace of the future. An existential heuristic for self-determination and career guidance, the "five minds" model demands of a student that she inquire of herself: What kind of mind do I have and need to develop to optimize my becoming? Upon making this distinction, which is activated by both the ancient mandate to "know thyself" and the credo

---

[13] See Poe's splendid poem, "The Bells," in Edgar Allen Poe, *The Fall of the House of Usher and Other Writings*, ed. David Galloway. (New York: Penguin, 2003), 44-47.

[14] David Bosworth, "Knowing Together: The Emergence of the Hive Mind," *The Hedgehog Review: Critical Reflections on Contemporary Culture* 19:1 (Spring, 2017), 26. I italicized "virtually accessible" for emphasis.

[15] As I was writing this essay, the *New York Times* reported that some cafes are banning wireless access to stimulate interpersonal exchange among customers. See Christopher Mele, "Coffee Shops Skip Wi-Fi to Encourage Customers to Actually Talk" (*N Y Times Online*, May 9, 2017). Retrieved from: https://www.nytimes.com/2017/05/09/technology/coffee-shop-wifi-access.html

of the Enlightenment, "have the courage to think for yourself," a student can more precisely cultivate herself, exercise free and rational thought, choose pertinent courses and training protocols, as she makes progress towards her educational and career goals.

The reason I have retrieved Gardner's earlier study, *Five Minds for the Future*, is to underscore that the findings of his new work on the app generation problematize if not revoke the *possibilities of individuation* described in the former. In *The App Generation*, Gardner and his co-author, Katie Davis, show that the rapid innovation and adoption of trending apps contravenes the very model and methods, mentioned above, that enable a young mind to make crucial distinctions on its own behalf, for its own benefit, on the path to success and personal fulfilment. The fundamentally jarring insight that Gardner politely repeats like a refrain in the pages of his study, that apps are often disempowering, is counterintuitive to common sense (and consumer confidence, alas, the same thing). Although it is commonly assumed that social media and its apps enrich the repertoire and range of a user's self-understanding and knowledge through instant connectivity and feedback, the constant if not habitual reliance on such technology often thwarts, rather than empowers, self-becoming and maturation. In the frenetic monitoring of Facebook wall updates, Instagram postings, Snapchat and WhatsApp missives, personal messages and tweets, and cellphone calls, which together "microcoordinate" or even "hypercoordinate" time and identity (32), personal individuation is stymied and rendered tentative while being intensely socialized. Socialization occurs on the web at the cost of diminished selfhood, greatly complicating personal growth, cognition, intimacy, and decision-making. One might expect that the outcome of ceaseless opinion sharing and informational glut would be a global outbreak of the condition diagnosed by philosopher's as "Buridan's Ass." Placed between two identical bales of hay, the ass starves to death due to its indecision regarding which bale to eat. On the one hand, this condition arguably explains the staggering number of undecided academic majors, recently almost 25% of the students on the campus where I teach. But it is more telling to look at those students for whom prepackaged convenience resolves indecision, when they decide their major based on publicized trends and hearsay, rather than intrinsic interest in the subject matter. Hence one finds a disproportionate number of business majors, many of whom voice the reigning catchphrase "It's practical" without any evidence of their business acumen. Choices grave and trivial are not made independently but adopted from available options and lists (e.g., Yahoos! "Top Ten Majors"; *US News and World Report* College Ratings issue); destinations for dining, work, school, travel, and leisure are found by apps, recommended by sites like Yelp!, or by friends forwarding links labeled "like." These are all helpful, of course; but they often foreclose the roles of self-reflection and chance in *personal discovery*, itself a bygone catchphrase that today sounds oxymoronic. As Gardner says, a likely outcome of such hypercoordination is that "apps can short-circuit identity formation" (32). In this case, as suggested above, identity is thwarted not by indecision, but by the cavalier adoption of ready-made choices that obviate the intrinsic rewards of personal discovery. The result of "succumbing to a prepackaged identity," precisely because it is temporary and exchangeable, Gardner says, is "endless role diffusion" (32).

When options for individual enlightenment come prepackaged as apps that enjoy widespread popularity, we are in an era of Counter-Enlightenment. Nevertheless, Gardner does not relinquish the utopian vision once associated with the advent of web-based culture as a new Enlightenment, when everyone was thrilled by having the world at one's fingertips. At that time, digital media held the promise of "ushering in an age of unparalleled democratic participation, mastery of diverse skills and areas of knowledge, and creative expression in various media, singularly or orchestrally" (33). Gardner's dire observations of app dependence are predictably balanced out by such majestic possibilities, as we can see by tracing the either/or rhetoric of the passage from which the above quotation was excerpted:

With respect to *identity formation*: Apps can short-circuit identity formation…or allow you to approach identity formation more deliberately, holistically, thoughtfully. You may end up with a stronger and more powerful identity, or you may succumb to a prepackaged identity or to endless role diffusion. With respect to *intimacy*: Apps can facilitate superficial ties, discourage face-to-face confrontations and interactions…or they can expose you to a much wider world, provide novel ways of relating to people. With respect to *imagination*: Apps can make you lazy, discourage the development of new skills, limit you to mimicry or tiny trivial tweaks or tweets—or they can open up whole new worlds for imagining, creating, producing, remixing, even forging new identities and enabling richer forms of intimacy. (32-33)

These observations smoothly pivot between the largely grim results of research on app use among digital natives and a persistent idealism once associated, as I said, with the advent of web-based culture as a utopian development. The research-based insight that social media and its apps often prove disempowering is not allowed to have final say. What determines, then, whether an app user will be disempowered or empowered by apps?

Here Gardner makes a crucial distinction between *app-dependent* and *app-enabled* users. While app-dependent users rely entirely on apps for matters grave and trivial, from spelling to career choice, app-enabled users are selective in their use of apps, relying on them only when they provide a situation-specific advantage. Rather than dig deep to identify cognitive patterns and behavioral traits that differentiate these types and allow us to predict their formation, Gardner focuses on two groups that have the power and authority to nudge young people toward app-enabled usage. The first group is app designers, who have the wherewithal to either design apps that promote dependence, or design apps that leave open the possibility of flexible response that in part derives from the prior knowledge and creativity of the user. Gardner gives examples of both kinds of design, with "Songwriter's Pad" inducing dependence, and the popular app "Scratch" encouraging the user's independent empowerment (183). The second group, which Gardner labels "mindful adults," can oversee children's use of apps, and, through selective guidance and scheduling, inculcate a relation to apps that is voluntary and adopts them as one among other heuristic devices to quicken self-determination and discipline-specific mastery in the sciences, math, art, and humanities (185).

As expected, Gardner and Davis consider the value and pertinence of educational apps and digital technologies for both young and non-traditional students. And, as expected, they caution users to avoid dependence on these modes of learning while promoting their indispensable value as tools for selective empowerment. Well-worn idealistic claims about the importance of online education and MOOCs for those without access to traditional classroom settings are repeated once more. One can log-on to play chess, learn Chinese characters, or "gain knowledge of economics, statistics, history, or philosophy" (174). However, no learning assessment data is cited that irrefutably proves online learning to be superior to bricks-and-mortar classroom learning, because no such data exists. The key point is convenience, which as we saw earlier in this review, is a key driver for app usage and dependence. But it is one thing to use GPS on a dark and stormy night to find one's lodging in a foreign country, and another to invoke Wikipedia, just before class, for a summary of Tolstoy's *Resurrection* that enables a student to breezily generalize about Tolstoy's great novel without any grasp of its moral and psychological complexities. It is hard to avoid slogans when contesting the cliché of convenience, as in any popular rendition of the oracular *Pathe Mathos* or "learning through suffering" espoused in ancient tragedy. (The Greek expression, *Pathe Mathos*, is now the name of a character in an online video game!) Sartre's concept of the "coefficient of

adversity," mentioned earlier, is hardly bandied about as a trending catchphrase by students and colleagues, and can serve as riposte to the mantra of convenience.

In a nutshell, Sartre invokes the concept to argue that the adversity or difficulty posed by an experience, such as climbing a steep mountain or reading Kant's *Critique of Pure Reason*, is integral to its meaning and significance.[16] Whether we overcome the adversity or not, the resistance encountered by our freedom and intelligence exercises them, sharpening awareness of our weaknesses and strengths, teaching us what we know, don't know, and need to know. For the climber, the actual mountain, first identified on a map as a possibility and set of coordinates, is not separate from, but co-constituted by its steepness, felt in my aching legs, by its crevices and overhangs, spanned by my hands with rope. Even the inclement weather, which retards my ascent, is part of the mountain. If asked about the mountain, my thought of it, to establish its essence, cannot avoid crediting these difficulties and dangers, and likewise my memory will always be informed as much by what my body retains of the mountain as the detailed information I panoramically synthesized upon reaching its summit before shouting, "I made it!". Indeed, one "makes" the mountain one finds and climbs, wind-swept and desolate, into an achievement of psychophysical fortitude and resilience, just as one "makes" a novel for oneself into an achievement of literary and philosophic understanding out of the raw materials provided by an author such as Tolstoy. To belabor the obvious, accessing a summary of that novel via Google no more gives me the novel than taking a cable car to the summit gives me the mountain. One gets an overview, nothing more. Meanwhile, one's skills (e.g., in textual exegesis and climbing) have atrophied or regressed, not sharpened or matured. In this regard, convenience and short-cuts can be disempowering if they are not selectively adopted to serve one's agenda.

Beyond the dubious utopia of convenient access, which in each situation must be questioned for its cogency and pertinence, Gardner and Davis report two major advantages of educational apps which they highlight as "two dramatically fresh opportunities" (180). The first is "the chance to initiate and fashion one's own products." They enumerate this creative opportunity as follows: "Any person in possession of a smartphone can begin to sketch, publish, take notes, network, create works of reflection, art, science—in short, each person can be his or her own creator of knowledge" (181). By now we recognize all too easily Gardner's idealism. The activities he mentions amount to a personal wish list of possibilities he would like to see actualized by students. In reality, however, I would conjecture that the number of students in one of my undergraduate classes that use their apps to voluntarily initiate such creative activities comprise a distinct minority. I am aware of only one person, a graduate student, who has self-published a novel via a service provided by amazon.com. Most students, as far as I can tell, use their smartphones to check Facebook and Instagram, shop online, and communicate gossip and moment-by-moment personal news and opinion via WhatsApp.

The second "dramatically fresh opportunity" reported by Gardner is "the capacity to make use of diverse forms of understanding, knowing, expressing, and critiquing" (181). In other words, as Gardner freely admits, the new digital devices provide a perfect milieu for the optimization of the multiple intelligences described in his earlier work. The sheer number of opportunities available to app users radically liberate modes of intelligent expression hitherto constrained by conventional academic metrics and pathways of intelligence. It seems to me that Gardner's gregarious optimism regarding the limits and possibilities of what he calls the "app mentality" finds its source in his own research, which has always been hospitable to diverse modes of expression and learning. In his ideal world, apps are an ideal solution, one he could not have fully envisioned in 1999, for liberating intelligence so that a thousand flowers

---

[16] Jean-Paul Sartre, *Being and Nothingness*, trans. Hazel Barnes (New York: Philosophical Library, 1956): p. 628.
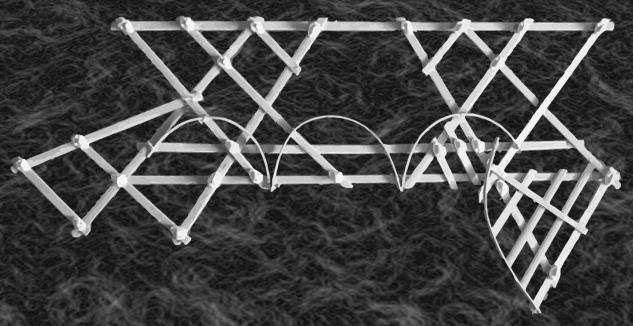
bloom. But as we have seen, the findings of his recent research show curtailed risk taking, mass conformity to trends, reactive, prepackaged responses rather than thoughtful behavior in school work and career planning, and, perhaps most curious of all, a reduction in playful experimentalism among creative writers, whose preferred genre seems to be conventional realism laced with irony; or, if they do work in fantasy or science fiction, it often seems unconsciously derivative of current media forms such as television, film, and video games. One expects these findings to correct Gardner's seesawing regard for the use of digital technology, but they don't. Since his earlier work, he has blandly claimed that "technology is neither helpful nor harmful; it is simple a tool."[17] Fifteen years later, he refuses to believe that the digital Leviathan might thwart and enslave his acclaimed multiple intelligences. They are his babies, and he wishes them a bright future at the expense of the credibility of his writing, which intermittently trades the sting of critique for avuncular optimism.

In the face of rhetorical evidence to the contrary cited in this review, Gardner and Davis fear that they are overly critical of apps and the so-called app generation. In the conclusion to their new book, the authors once again become defensive. They imagine that their readers accuse them as follows: "You authors are certainly giving apps a hard time." So, they pivot once again from critique to advocacy in a gregarious tone with which we are all too familiar: "Two cheers for apps!" (187-188).
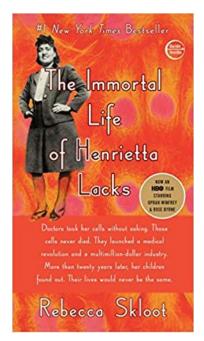
---

[17] Howard Gardner, *The Disciplined Mind*, 135.

BOOK REVIEWS

The Immortal Life of Henrietta Lacks – by Rebecca Skloot

Reviewed by Jason Vest. New York, Crown Publishers, 2010. 461 pp. (with index). Paperback. ISBN 978-0-307-88844-0. $7.99.

When Home Box Office (HBO) announced, in early 2016, that its long-promised adaptation of Rebecca Skloot's 2010 book *The Immortal Life of Henrietta Lacks* was finally entering production, admirers of Skloot's exhaustively researched tome rejoiced. The premium cable network's reputation as purveyor of prestigious telefilms about significant historical events (adapted from recent bestsellers) suggested that this movie—like 2008's *Recount*, 2011's *Too Big to Fail*, 2012's *Game Change*, and 2016's *All the Way*— would tell a complicated story in engaging and entertaining fashion. The news that Oprah Winfrey had agreed to star as Deborah Lacks, daughter of Henrietta, raised expectations even higher that the movie would bring Skloot's methodical reconstruction of Henrietta's life to a wider audience. The fact that Winfrey's Harpo Productions had optioned the film rights to Skloot's book soon after its 2010 release undoubtedly helped its sales, as happens to almost everyone and everything associated with Winfrey's name. Although not an official selection of the famous (or infamous, depending upon one's perspective) Oprah's Book Club, *The Immortal Life of Henrietta Lacks* came to prominence not simply because Skloot's extensive scholarship and fluid prose make it a compulsively readable book, but because the welter of fabulous reviews that accompanied its publication brought *Henrietta Lacks* to Winfrey's notice and, eventually, into her orbit.

Now that the movie—also titled *The Immortal Life of Henrietta Lacks*, directed by George C. Wolfe, and first broadcast by HBO on April 22, 2017—has arrived, committed readers can reappraise the strengths and weaknesses of Skloot's celebrated book. Its initially rapturous reviews—one must search long and hard to find a notice that does not describe *The Immortal Life of Henrietta Lacks* as "amazing," "incredible," "unputdownable," "terrific," or, in the most extreme cases, "miraculous"—can lead readers into the sort of uncritical, preconscious daze that brainwashes potential customers into believing, before

they read a single word, that the publishing industry's latest sensation is a major work. And who can blame curious audiences for believing the hype that the blitzkrieg of encomia—rising in some instances to near hagiography—created? In 2010, *The Immortal Life of Henrietta Lacks* became the product of a major media campaign conducted via print, radio, television, and online platforms to convince booksellers and -buyers that it was the literary coming-out of a major new author.

The Immortal Life of Henrietta Lacks is certainly that, and more. Skloot's inaugural entry in the big-book sweepstakes that now constitutes New York City's publishing millhouse deserves plaudits even if re-reading her book seven years later reveals a project less marvelous than it first appears. These reservations, of course, cannot change the reality that *The Immortal Life of Henrietta Lacks* remains what its most ardent admirers insist: a must-read for anyone interested in the complicated, knotty, and evolving ethics of American medical science. Skloot's book is even more urgent for people curious about how individual Americans try (and frequently fail) to protect their bodily integrity against federal, state, and corporate intervention, particularly as traditional notions of personal consent have so rapidly lost ground to medical technology's onrushing advance that they seem hidebound in an era where the reality of "designer babies" (previously a term heard only in science fiction) is upon us. The book's most salient effect, however, is that, in the wake of protest movements such as Black Lives Matter and the Movement for Black Lives, it has become mandatory reading for audiences curious about the roots of America's appalling treatment, at every institutional level, of its black citizens. This development helps explain why *The Immortal Life of Henrietta Lacks* now lands on so many college syllabi in so many different disciplines: literature, philosophy, law, history, political science, sociology, and, especially, medical and biological ethics. Skloot's decade-long project to uncover the biography of Henrietta Lacks, the African American woman who gave the world its first "immortal" human-cell line, is, from this perspective, unimpeachable.

Yet, as good as *The Immortal Life on Henrietta Lacks* is, as many times as the book repays its purchase price, and as lovely as Skloot's evocative prose may be, the book bears the traces of that most dangerous object: the passion project. Skloot's esteem for Henrietta Lacks burns so intensely that her readers come to love the mother of the HeLa cell line, a biological wonder previously known only to medical researchers, health practitioners, and legal scholars. In a criticism that no doubt seems tired— even reactionary—to Sklott's most fawning readers, the author sometimes loses sight of Henrietta herself, which throws cold water on *Henrietta Lacks*'s ecstatic reception, but provides a necessary reminder: Skloot's book flies high indeed, but, like Icarus, cannot help but crash to earth.

Such literary turbulence, in a curious countervailing effect, makes *The Immortal Life of Henrietta Lacks* an even more necessary text for our fractious era. Skloot explains—in painstaking but occasionally overwrought detail—how she first encountered Henrietta Lacks's reputation in 1988, when, as a precocious 16-year-old student in a community-college summer-school biology course, she (Skloot) learned from her professor, Dr. Donald Defler, that "Henrietta died in 1951 from a vicious case of cervical cancer" (4). The story might have ended there, in tragedy and pain at Baltimore's premiere hospital, but a surgeon at Johns Hopkins Medical School sliced a few cells from Henrietta's tumor, preserved them in a petri dish, and serendipitously inaugurated a new era in medical scholarship. "Scientists had been trying to keep human cells alive in culture for decades," Skloot gamely tells us, "but they eventually died. Henrietta's were different: they reproduced an entire generation every twenty-four hours, and they never stopped" (4).

This astonishing fecundity continues as I write these words (more than fifty-five years after Henrietta's death). HeLa cells have begotten billions—perhaps trillions—of hardy offspring that, when improperly maintained, contaminate other cell lines used for biological, medical, and pharmacological

research. Skloot discusses this development and dozens of other scientific puzzles in admirably accessible language that, like the work of Alice Bell, Rachel Carson, Stephen Jay Gould, and Carl Sagan, explains difficult scientific concepts with imaginative analogies and precise metaphors that never condescend to the reader's intelligence, patience, or good will. What, one may ask, could stop such a work from becoming the masterpiece that its reputation suggests? My response: Skloot's choice to narrate the autobiography of her authorial process alongside Henrietta Lacks's biography.

Although the conventional classification of *The Immortal Life of Henrietta Lacks* as *science writing* is true, a more accurate label is *creative nonfiction*. Skloot inserts herself into the story so frequently that, by book's end, readers know as much—even more—about her journey, plus the difficult circumstances faced by Henrietta's family, as they do about Henrietta's illness, the taken-for-granted (but no-less-deplorable) racism that Henrietta faced while attempting to receive treatment, and the subsequent effect of her immortal cells on American medical science.

The fact that HeLa cells helped Jonas Salk develop the first effective polio vaccine receives due attention, but Skloot's wariness about her position as a white writer attempting to tell the truth of a black woman's experience undergirds her entire narrative enterprise. And make no mistake, *The Immortal Life of Henrietta Lacks* is a narrative work—a whopping good one that whipsaws readers back and forth through time from Henrietta's childhood in rural Virginia to the twenty-first century's most advanced laboratories—rather than straight scientific scholarship. This fact surely accounts for its popularity, since few lay readers would endure the eye-glazing jargon that characterizes biomedical-research articles. Skloot, it must be said, is a marvelous correspondent whose familiarity with even the densest scholarship about her topic remains impressive, allowing her to untangle thorny issues about bioethics with intelligence and verve.

Although Skloot correctly worries that her privileged upbringing renders her blind to many complexities of Henrietta's life under Jim Crow segregation, Skloot's decision to tell Henrietta's story as a medical thriller-cum-road trip/buddy comedy, in which Skloot and Henrietta's daughter Deborah team up to uncover the details of Henrietta's life (and strange afterlife as a scientific specimen), finally deprives the book of focus and, at key moments, narrative urgency.

These drawbacks, in the end, cannot gainsay the real contributions that *The Immortal Life of Henrietta Lacks* makes to popular writing about medical science, biological research, and America's intractably racist history.
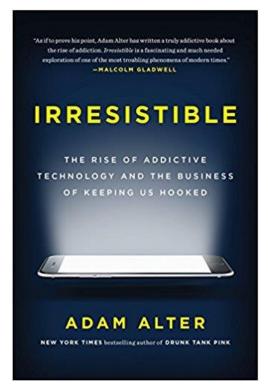
Even so, it would improve had Skloot familiarized herself with the extensive scholarship about African American history, literature, and culture available to her (and to us all). While re-reading this book, I imagined an alternate universe where bell hooks, Toni Morrison, Michele Wallace, or Hortense Spillers had written (or co-written) *The Immortal Life of Henrietta Lacks* to bring it needed context, sensitivity, and cultural detail. But, of course, they didn't. Skloot did, meaning that the laurels, fame, and money that she has received from writing this book have made her a sought-after commentator about medical racism. Fair enough, but readers should bear in mind that, despite extensively discussing the restrictions placed upon black Americans of every era, *The Immortal Life of Henrietta Lacks* never truly portrays Henrietta's or Deborah's experience from the inside. Skloot's fidelity as a reporter—focused on external rather than internal realities—leaves many ghastly truths, especially the fact that several members of the Lacks family cannot afford health insurance, as regrettable developments rather than uncovering how America's marrow-deep institutional racism makes such results inevitable.

HBO's good-but-not-great film adaptation provides a dispiriting coda to Henrietta's story, as well. It provoked an ugly fight among Lacks family members over money and memory (namely, the best way to honor Henrietta's vast contributions to medical research) still being fought in court and in the press. Skloot herself has remained mostly above the fray, pointing out in several interviews that she began The Henrietta Lacks Foundation in 2010 (soon after her book's publication) to offer grants to people who, in the words of its official website, "have made important contributions to scientific research without personally benefitting from those contributions, particularly those used in research without their knowledge or consent."[1] Some of these grants have gone to Lacks family members to help them afford medical treatment (including dental care), insurance, and equipment (such as reading glasses).

All to say, *The Immortal Life of Henrietta Lacks* is good, very good, but prospective readers should beware that the book is less revelatory than the blurbs on its covers and first pages claim. Even if we cannot have everything, we can nonetheless be grateful to Rebecca Skloot for exposing Henrietta's story to the wider world, for clarifying so many issues surrounding the use of her immortal cells in scientific research, and for paving the way for other writers to assess the cultural meanings of Henrietta's experience in greater detail. Even if the book does not fulfill its most passionate advocates' breathless claims, *The Immortal Life of Henrietta Lacks* is, indeed, required reading for an era in which white supremacy, scientific illiteracy, and shameful ignorance have ascended to the White House.

---

[1] The Henrietta Lacks Foundation's full website is available at http://henriettalacksfoundation.org/.

Irresistible: The Rise of Addictive Technology and the Business of Keeping Us Hooked – by Adam Alter

Reviewed by Paulette M. Coulter. Penguin Press, 2017. 354 pp., $27.00 (Hardback).

While reading Adam Alter's *Irresistible*, I heard the tune of the song "Unforgettable" in my brain, with the words slightly changed. In *Irresistible* Alter examines the addictive behaviors evoked and fostered by the electronic technologies of the smartphone and other portable-screen devices. The book comprises three parts, along with a prologue and epilogue, acknowledgments, notes, and an index. Part 1 focuses on behavioral addiction and its origins (three chapters); Part 2, on "The Ingredients of Behavioral Addiction" and how to "engineer" such addictions (six chapters); and Part 3, on the future of such addictions and how to avoid them (three chapters).

Alter, according to the back flap of the book cover and to his personal website (adamalterauthor.com), is "an associate professor of marketing at New York University's Stern School of Business"; he has an affiliated appointment in the psychology department of the university, the field in which he holds academic degrees: bachelor's, masters, and doctorate. He authored the book *Drunk Tank Pink* and has written articles for a variety of magazines as well as scholarly publications. In *Irresistible*, Alter derives his evidence and supporting data from interviews and from published research material. His

writing style in *Irresistible* strongly resembles magazine writing rather than research writing and may, as a result, be readable for a broader audience than academic writing might be. Notes at the end of the book, before the index, are numbered by the page number to which they refer, followed by several words of the note's paragraph. Notes and the index are printed in a font smaller than used in the chapters and appear almost as afterthoughts.

Alter scrutinizes the behaviors of people addicted to their technology, especially smartphones—those who text their friends and family rather than speaking to them, even when present at the same table—as well as behavioral addictions to fitness, video gaming, binge video watching. The book may help readers understand the attachment middle school, high school, and university students have to their smartphones and may also help understand any behavioral addiction or addictive tendency readers themselves may have.

In "The Rise of Behavioral Addictions," Alter defines addiction to substances and behaviors and distinguishes between them; in this way he introduces the reader to major research that developed these definitions and distinctions. Thus, Alter notes that originally, in Roman times, *addiction* meant being sentenced to slavery, or forced labor, until a debt was paid (29). Since ancient Rome, however, the term has evolved to include addiction to food, drink, and, especially in a medical or legal sense, to drugs. Essentially, "[a]ddiction is a deep attachment to an experience that is harmful and difficult to do without" (Alter 20). Further, it is the substitution of that experience for whatever might meet an individual's psychological needs, which vary as the individual varies; it is often not even a matter of liking, but a matter of *wanting*, the repetition of the experience.

In reviewing the history of addiction research, Alter provides both qualitative and quantitative evidence. For example, he indicates that the archeological record shows betel nut chewing in Southeast Asia is an early example of substance addiction, as is khat leaf (which resembles methamphetamine, or speed, in its effects) in the Horn of Africa and what is now Saudi Arabia, coca in Peru, the pituri plant in Australia, and tobacco among Native Americans (30-31). He also relates the efforts by Robert Christison (of the British Medical Association), Sigmund Freud, and John Pemberton (a Confederate soldier and the inventor of Coca-Cola) to use cocaine to break addiction to morphine (32-39). Freud published an essay on cocaine in 1884, "Uber Coca," a lasting note to his misinterpretation of the effects of the drug when he became addicted to it and had to recover from that addiction (33-36).

Of the quantitative information in Part 1 of the book, the bar graph on page 15 shows that the average time spent per day on smartphones was three hours for the 8,000 users of a tracking program called Moment; for most people the amount of time spent onscreen exceeded their estimation. Holesh, the developer of the app, says that users underestimated their onscreen time by about fifty percent (qtd in Alter 14). Alter comments on the graph: "If, as guidelines suggest, we should spend less than an hour on our phones each day, 88 percent of Holesh's users were overusing" (15). Another bar graph on page 49 ranks the harm rendered by the common severely addictive substances; heroin ranks the highest, with cocaine second highest. Alcohol ranks higher than speed, tobacco, and marijuana.

Ungraphed quantitative data gleaned from 83 studies by Mark Griffiths along with researchers at the University of Southern California (2011) showed that 41 percent of the study populations of "1.5 million respondents from four continents" exhibited some form of behavioral addiction over the previous twelve months (Alter 24-25; note 24, 325). Studies from 2015 suggest that 40 percent of the population have some form of Internet–based addiction, and 48 percent of a population of university students considered themselves "Internet addicts," with an additional 40 percent "potential addicts" (Alter 26; first

note 26, 325), or 88% again! In the second note to page 26 (325), Alter provides the URL for netaddiction.com/Internet-addiction-test, thereby allowing readers to test whether they, too, are Internet addicts.

In Part 2 of the book Alter focuses on "The Ingredients of Behavioral Addiction." In chapters 5 through 9 he discusses "Goals," "Feedback," "Progress," "Escalation," "Cliffhangers," and "Social Interaction." While Alter deals with these topics in terms of the built-in addictive snares of video gaming, online shopping, and other behaviors, the significance of these six processes in education is not to be ignored.

In chapter 4, Alter examines goals, goal-setting, goal-surpassing, and metrics in several ways and the roles they may play in the development of behavioral addictions. Two of the topics are displayed in graphs. The graphs on page 108 display the incidence of the terms "goal pursuit" and "perfectionism" in books from 1800 to 2000. "Goal pursuit" does not appear in books until the late 1950s or early 1960s, but by 2000 appears in nearly three books per thousand, or three-tenths of one percent. "Perfectionism" appears in books sporadically and in small numbers after 1845 but increases steadily to one and a half percent of books circa 1960, levels out until the mid-1980s, and then increases to more than five percent by 2017. Goals and goal-setting, along with reaching those goals, have become more a focus of people's attention.

A second set of graphs displays the average times of runners who complete marathons, 26.2 miles or 42.2 kilometers. The graph on page 94 is hypothetical, showing a near-normal distribution of times, peaking at four hours, and truncated at four and a half hours, the average time of marathon completion. The graph on page 97, however, displays real data of "ten million marathon runners" plotted by four behavioral scientists. This graph is neither smooth nor near-normal. Rather, the number of runners peaks at half-hour intervals, reaching the highest point before the four-hour time, after which the number drops dramatically (by about 15,000) and remains fairly level until four and a half hours, when it drops again. This graph shows that the runners set *intermediate* goals of completing the race within two, two and a half, three, three and a half, and four hours instead of aiming only for a goal of completing the race within four hours.

Wearable technology such as fitness trackers focuses individual attention on meeting goals, as Fitbit, for example, sends messages that indicate the wearer has N many steps to go to meet the goal of 10,000 daily steps recommended by the American Heart Association. Fitbit also sends the wearer a weekly report that compares to the previous week time, distance (miles and steps), and calories burned. This comparison is based on the goal of the American Heart Association and does not consider the wearer's age, ability, or state of health.

In chapter 4, Alter also presents two examples of people who meet and surpass their goals. The first case is Robert Beamon, who broke the world record for long jump at the 1968 Mexico City Olympics in seven seconds by completing a jump that was 55 centimeters longer than any previously recorded. In fact, officials had to find a tape measure long enough to measure the jump. Beamon's record stood for over twenty years, but he stopped jumping after setting this record (Alter 98-100). The second case is that of Michael Larson, who figured out how to beat the pattern of a gaming machine on the CBS show *Press Your Luck.* In a single day he amassed $110, 237 in winnings. Unfortunately, Larson did not stop gambling at that point, but frittered his money and his life in other pursuits, never again winning as wildly (100-107).

In chapter 5, Alter discusses feedback as related to the results of achieving goals. Like the contrasting responses reported in chapter 4, data from both research and gaming provide interesting results. Feedback promotes continued assurance or positive reinforcement of behavior; thus, Instagram and Facebook with their interactivity of liking, support continued use for many people. Feedback appropriately placed, allowing a win after a series of losses, or even allowing a near-win, a "loss disguised as a win," keeps the player continuously engaged, for "[l]osses disguised as wins only matter because players [of slot machines, in this case] don't classify them as losses they classify them as wins" (Alter 133). Because players are, thus, in their own minds, *winning*, they continue to play.

Chapter 6 sustains the idea of designed-in positive reinforcement as players progress through a game or other activity. For example, in Shigeru Miyamoto's game, Super Mario: "The first few seconds of gameplay are brilliantly designed to do two very difficult things: teach, and preserve the illusion that nothing is being taught at all" (Alter 149). Apple computers used to do a similar thing with a small app called Mouse Practice; my beginning four-year-old students would "play" this app repeatedly, thereby learning to point, point and click, and click and drag, without realizing they were mastering basic skills.

Alter addresses another example of progress in addiction and in gaming – using the fund-raising auctions of a dollar or a twenty-dollar bill, with the rule that both the highest and the second-highest bidders pay; the thought of getting a dollar for a few cents or a twenty for a couple of dollars may push bidders to pay more than the bill's actual value (149-151). Similarly, penny-auction websites and online games embed potential progress traps. Penny-auction sites may begin with penny bids but may also reset the bidding timer multiple times in the last few minutes/seconds of bidding, forcing bids to go higher and higher (152-154). Some online games also provide initial stages of a game for free or a very low price. Once the player is engaged, these games begin to charge for enhancements or continuation of the game (155-162). Beginner's luck may also entice players. To paraphrase Alter (157) the user begins to bid to get something or to play to have fun, but continues to prevent someone else from getting that something or to avoid not having fun, an escalation that leads to chapter 7.

In game design "Escalation" means making the game neither too easy nor too difficult, but progressing through levels that are sufficiently challenging to keep the gamer engaged. Alter employs a concept often discussed in education classes: Lev Vygotsky's concept of the "zone of proximal development" (174-176). This means gaming activities are scaled to be sufficiently challenging to a learner to keep them learning and progressing. When skills are scaffolded in a game (or in a classroom), the player or learner can progress without learning being too easy or too difficult and can find him- or herself "in the zone" or in what Mihaly Csikszentmihalyi (1990) called "flow" (qtd in Alter 176-177).

One drawback of escalation is the disruption of stopping rules, which is also related to the constant measurements of technology. Examples of disrupted stopping rules are running or exercising through injury, dying from overwork, accumulating credit card bills, playing video games not merely for hours, but for days, without cease. One win (or loss disguised as a win) leads to another. If I walk or run X miles today, I should walk X + 1 miles the next day, and the next, and the next, especially if I keep track of mileage on a Fitbit or Apple watch Alter184-190). In many instances, keeping track and believing that such increases are necessary reinforce development of behavioral addiction. Most people who overwork do not do so simply for the sake of money.

The "Cliffhangers," discussed in chapter 8, such as the endings of *The Italian Job* and of the 87th episode of *The Sopranos* (Alter 191-203), and, I would add, the insidious "To Be Continued" endings of some mystery series episodes, also lead to addictive behaviors. Viewers want to know what happens next,

to seek resolution of the tension created by a story's conflict. This leads to continuing a game to the next level, watching the next episode of a TV show, or binge-watching many episodes, made possible by video recorders and by Netflix "post-play" (208-209). By contrast, in learning to write fiction of many varieties, including children's books, short stories, plays, screenplays, students and other authors learn to create mini-cliffhangers to keep the reader reading and viewer watching. Books end, however, as do live plays and theater movies. The smaller screens of television or personal technology are more addictive because the viewer or gamer can simply continue watching or playing.

A second topic Alter raises in chapter 8 seems misplaced as it is strongly related to feedback. On page 204 and following, Alter raises and answers the question of what the reader might "expect to make people happiest": to desire something, to wonder if one will be satisfied, or being satisfied. Contrary to the expectation that having a desire satisfied makes most people happiest, experiments show that unpredictable rewards (feedback) keep people more interested and likely to continue a game or shopping experience (205).

The last chapter of Part 2 focuses on "Social Interaction." While this interaction is virtual, interactivity alone has made some sites more popular than others. Thus, feedback from other users in the form of "likes" of photos on Instagram has allowed that social medium to survive while its predecessor, Hipstamatic, which lacked social networking, has disappeared. Similarly, likes, loves, and comments on Facebook have made that social medium thrive. Social networking has become another form of addiction; the reason, Alter writes, is that "[p]eople are never really sure of their own self-worth, which can't be measured like weight, height, or income" (217). Unfortunately, those who measure their self-worth only through social media may find themselves less happy than they expected to be, a concept argued online by Steven Marche (2012) and Eric Klinenberg (2012).

Multi-user games and sites also provide social interaction, but this interaction, too, is virtual rather than real and has the same drawbacks as texting rather than talking face to face. Young people who learn to interact only online may never learn the social skills necessary for survival in the real world. Alter notes, "One study found that gamers between ten and fifteen years who played more than three hours per day were less satisfied with their lives, less likely to feel empathy toward other people, and less likely to know how to deal with their emotions appropriately" (233). For the sake of the survival of the human race, this statement is more than a little frightening.

In Part 3 of *Irresistible* Alter offers advice on dealing with behavioral addictions. As with any addictive behavior, prevention is both better and easier than cure, and Alter titles chapter 10 "Nipping Addictions at Birth." This means, for children, monitoring and limiting the use of addictive technologies and ensuring that they learn face-to-face social skills, such as looking people in the eye when speaking to them and developing empathy, the ability to read other people's feelings. Children younger than two years, says Hilarie Cash, a founder of a behavioral addiction treatment center, should not be exposed to screens at all (qtd in Alter 245). Screen time for children older than two should be both limited and monitored because children and teens need sleep as well as physical and social activity (ibid.).

Developing appropriate behaviors should help build "Habits and Architecture" (chapter 11) for children and adults who choose to be responsible for their own behavior. A structure of controlled activity is better than abstinence, Alter recommends, citing the higher incidence of searches on sex and pornography among sectors of society that advocate sexual abstinence (263-66). Substituting another behavior for the unwanted one and avoiding temptation also work better than abstinence and will power (266-267, 275). Both positive and negative rewards help regulate personal activity; new technologies are

being invented to assist people in breaking bad habits (279-285). Similarly, delinking measurement (numbers of likes on Facebook, for example) and defining a personal stopping point in video viewing also help. A viewer can resolve cliffhangers in one of several ways: stopping an episode before the new cliffhanger at its onclusion or watching through the cliffhanger and its resolution at the beginning of the next episode (286-291).

In the last chapter, Alter suggests "Gamification" (a term coined by Nick Pelling in 2002 [Alter 298]), a suggestion that seems odd after reading the six chapters in Part 2 on how games are designed to entrap their users: gamify to break bad habits, to learn SAT vocabulary, to teach science, to distract from the pain in medical treatments or of PTSD in those who have suffered trauma (passim). The tone of the last chapter appears to change as well. Where Alter seemed to non-judgmentally report on many pieces of information and research throughout *Irresistible*, in the last chapter he seems to take a clearer stand: Use the points, levels, and badges (the feedback and rewards) of gaming to reinforce learning, but do so with signals to stop at places within the game to prevent the need for continuous play (298). As a means of teaching, games provide "active, hands-on experience rather than passive instruction" (Alter 309), a benefit to both student and teacher.

If "[h]alf of the developed world is addicted to something, and for most people, that something is a behavior," as Alter (317) writes in the first sentence of the "Epilogue," an understanding of addictive behaviors has become a necessity. Alter's 2017 book, *Irresistible*, is one place to begin. The book will help most of us understand why our students are constantly on their smartphones; it may help some of us understand our own behaviors. What is disturbing to me is that the nearly continuous smartphone use is actually a symptom of the need for constant phatic reassurance, especially when the phone substitutes for the feedback of social reassurance provided by real people.

As Alter states throughout *Irresitible*, environment, or context, influences the development (or not, and the recovery from) addiction to both substances and behaviors. Environment played a major role in why the United States did not experience a heroin addiction epidemic after the Vietnam War. Returning soldiers who had used easily accessible heroin in Vietnam returned to a context that had different stresses, expectations, and rewards (Alter 46-52, 59-60) and lacked the waiting and boredom of war. Further, clients of gaming addiction treatment centers who return to their homes often relapse because they return to the environment where their addiction developed (60ff.). If the environment supports the memories that built addiction, the addiction is more likely to continue.
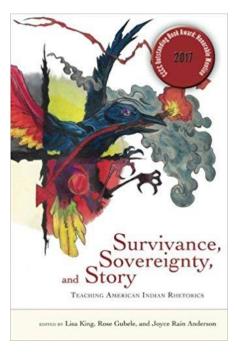
As noted in the introduction of this review, Alter uses a writing style more similar to magazine writing than academic writing. While this writing style will appeal to a broader audience than academia, at times the book seems like serial anecdotes that require a clearer delineation of what they have to do with the central argument or purpose of the book. With respect to the placement of the Notes at the back of the book and their numbering system, I find it insufficient that the graph on page 97 was plotted by four behavioral scientists. I want to know which four behavioral scientists compiled these data and where I can find their initial report. Similarly, I want to know where I can find the analysis of the seventy-two studies on the decline of empathy among young people; an article in *Scientific American* (Chiaet, 2013) suggests one way to develop empathy: read literature. Finally, although I encourage people to read it because it has finally been written, I wonder why this book wasn't written earlier. Statistical data may only now be becoming available, although many of the first-generation iPad users are still children. A search of Google in July 2017 of the terms *Internet addiction* or *video-gaming addiction* yielded millions of results dating from 2005, 2009, 2010 (19 million for Internet addiction and 11 million for video-gaming

addiction, with unmodified terms). Much research has been done. I wonder, though, how much progress has been made; the technology is irresistible.

Works Cited

Alter, Adam. *Drunk Tank Pink: And Other Unexpected Forces that Shape How We Think, Feel, and Behave.* Penguin Books, 2014.

Alter, Adam. *Adam Alter.* Accessed at adamalterauthor.com.

Chiaet, J. "Novel Finding: Reading Literary Fiction Improves Empathy." *Scientific American*, October 4, 2013. Accessed at http://www.scientificamerican.com/article/novel-finding-reading-literary-fiction-improves-empathy

Csikszentmihalyi, Mihaly. *Flow: The Psychology of Optimal Experience*. Harper & Row, 1990.

Klinenberg, Eric. "Facebook Isn't Making Us Lonely." *Slate,* April 19, 2012*.* Accessed at http://www.slate.com/articles/life/culturebox/2012/04/is_facebook_making_us_lonely_no_the_atlantic_cover_story_is_wrong_.html

Marche, Steven. "Is Facebook Making Us Lonely?" *The Atlantic,* vol. 309, no. 4. May 1, 2012, pp. 60-69. Accessed at http://eds.a.ebscohost.com/eds/pdfviewer/pdfviewer?sid=bc348aea-86b9-48a0-8c1a-05093d3a4b48%40sessionmgr4007&vid=0&hid=4108

Survivance, Sovereignty, and Story: Teaching American Indian Rhetorics – by Lisa King, Rose Gubele, and Joyce Rain

Reviewed by Pauline Baird. Logan: Utah State UP, 2015.

When teaching Native rhetorics in composition classrooms, many instructors might find an excerpt or two by Native scholars in their textbooks inadequate. Teachers have a resource in *Survivance, Sovereignty, and Story: Teaching American Indian Rhetorics,* an edited collection by Joyce Rain Anderson, Rose Gubele, and Lisa King.

In this anthology, Native author-teachers share academic stories of their pedagogies and methodologies for teaching Native rhetorics in the rhetoric and writing classroom. The appeal of this text is that the authors situate, theorize, constellate, and demonstrate how they teach Native rhetorics alongside history, personal narratives, and traditional and digital pedagogy. The author- teachers draw on a variety of rhetorics: oral, literature, story, history, art, and poetry, among others, to privilege and incorporate Native perspectives and realities. By doing so, they inspire readers to think of new ways to indigenize composition. The author-teachers who teach at various tertiary levels in the academy, have drawn from pedagogical stories, theories and practices ensuing from meetings in the American Indian Caucus, at the Conference on College Composition and Communication during the years 2009-2015. In particular, this work aims to a) "develop a deeper understanding of the role of American Indian rhetorics in writing classrooms"; b) "situate [their conference workshops] within current literature understandings,

and practices of teaching American Indian rhetorics; and c) provide teachers with models they can adopt for their own classroom use" (5).

The introduction and epilogue by Rain, Anderson, and Gubele book-end ten chapters by thirteen authors. Each chapter is a story of *how* each author-teacher, all of whom are practitioners of Native rhetorics in the composition and rhetoric classroom at various tertiary levels, teach Native and Indigenous rhetorics. They provide compelling examples of *how* they and others change the ways they teach Native rhetorics in the writing classroom. Readers can expect to encounter engaging scripts, stories or theories, practices, and actual accounts from real classes, from undergraduates to graduate levels.

These author-teachers adopt[s] a professional tone, using story as the methodology for teaching and writing, from which newcomers to Native rhetorics as well as veterans can learn and practice a language for talking about Native rhetorics. To ease readers into their conversations, King, Gubele, and Anderson introduce terms such as "*sovereignty," "rhetorical sovereignty," "survivance*," and "*story*." I wished that a few of the stories in the epilogue were placed closer to the introduction, rather than scattered throughout the book, as they speak directly—teacher-to teacher—to draw teachers in. That said, if readers are looking for a layered approach to teaching Native rhetorics in the composition classroom, these authors provide a multi-pronged approach, making clear connections to each other's work. Readers are encouraged to try their own approaches, depending on their needs and contexts. Nevertheless, teachers can harvest at least 10 takeaways from *Survivance, Sovereignty, and Story: Teaching American Indian Rhetorics*.

1. *Know the difference between sovereignty and rhetorical sovereignty.* An understanding of the difference between "sovereignty" and "rhetorical sovereignty" in Native realities is key to Native rhetorics. In the discussion of teaching writing in the context of Native rhetorics, Lisa King introduces the concept of sovereignty as part of the pedagogical framework. In Chapter 1, "Sovereignty, Rhetorical Sovereignty, and Representation: Keywords for Teaching Indigenous Texts," King argues that this understanding helps students and teachers to (re)orient their perspectives on Native rhetorics, perspectives on texts, as well as institutional practices regarding Native representations.

2. *Perform Socioacuptuncture:* Composition curricula are overly Western-European; to address this malady, weave gestural, architectural, textual, and spatial modes of learning. Draw on selected indigenous texts and modes into curricula to address this imbalance, "prick social consciousness" in the classroom, whether students and teachers are writing or doing field research (37). In Chapter 2, "Socioacupuncture Pedagogy: Troubling Containment, Erasure of Indigeneity in the Composition Classroom," Sundy Watanabe argues Gerald Vizenor's "socioacupuncture" is needed to right maladjustments. A socioacupuncture-conscious composition curriculum is one way of teaching at various levels of pedagogy. Watanabe uses socioacupuncture to "indigenize the composition classroom and, by extension, the academy" (36). He applies socioacupuncture pedagogy when he invites students to challenge traditional Western structure(s). Watanabe's goal is to show *a way* to engage in respect, reciprocity, responsibility, and relationship building in composition as a way of life.

3. *Transform Cultural Memories:* Direct the focus of Native rhetorics toward embodied, linguistic, and material rhetorics to talk about ways of "counter[ing] colonial practices" (58). "Decolonial Skillshares" are multimodal practices and expressions that learners and teachers, native and non-native use to create spaces where they can "transform cultural memories" (58). In Chapter 3, "Decolonial Skillshares: Indigenous Rhetorics as Radical Practice," Qwo-Li Driskill uses this pedagogical practice from and within particular communities that are at risk of being ignored or

marginalized. For example, Driskill draws on two-spirit, queer, hir, trans, and activist experiences to teach rhetorics alongside linguistics, embodied, and material rhetorics in the composition classroom, thus moving away from the centrality of the Greco-Roman tradition in the academy.

4. *Draw on Civic Rhetorics:* Civic rhetorics and land base-rhetorics provide ways to frame composition pedagogy. Gabriella Rios, in Chapter 4, "Performing Nahua Rhetorics for Civic Engagement" shares that written text may not be a framework for civic and public discourse for many, including Native and Indigenous peoples. Students and teachers can engage in inquiry about the environment around them. Examine how civic participation is a way of understanding relationships with acquired knowledge, humanity, land, and ways of being in the world. Studying these connections propels students and learners beyond the narrow confines of Aristotle's rhetoric.

5. *Dare to Unlearn Alternative Facts:* Composition must examine contemporary views of Native rhetorics and challenge old perspectives for students and teachers to confront "skewed image[s] of reality," (Rose Gubele, "Unlearning Pictures in Our Heads", 98). Gubele, in Chapter 5, recommends examining commonly held beliefs, images, and ideas about Native Americans; teaching from various texts and techniques such as story, dialogue, history lesson on multimedia; and inviting students to revisit information based on the written texts by Native scholars in newspapers and websites published by Native peoples. Her goal is that students and teachers experience a balanced pedagogy, unlearn aspects of their knowledge, and engage in new kinds of discourses.

6. *Promote "Alter/native Discourses" Through Song:* Through songs students can engage in a range of discourses on: resistance, survivance, "oppression, and cultural continuance" (Kimberli Lee, "Heartspeak" 12). Teachers and students use song to because they communicate "viable messages" (117), fix history in reality, and show how traditions evolve, function, and disseminate. Use contemporary music to engage in "alter/native discourses" (133) as an initial step in the process of connecting Native rhetorics to the decolonization and cultural consciousness (132). Thus Chapter 6 examines ways in which contemporary students regard songs, traditional and contemporary, as rich resources for teaching and learning of Native American stories and survivance.

7. *Theorize Graduate teaching experiences in the Native Rhetorics classroom:* Teachers can focus on the bonds and struggles of Native rhetorics teachers, themselves, in the graduate classroom. At the intersections of their teaching and learning experiences, Malea Powell and Andrea Riley-Mukavetz, in Chapter 7, describe the space for theorizing Native rhetoric in a graduate seminar course ("Making Native Space"). Readers get a real-life glimpse into *how* the authors theorize the messiness of teaching Native and Indigenous rhetorics in rhetoric and composition classrooms. The authors, in Chapter Seven, weave stories about their own indigenous rhetorical practices and rhetorical/methodological practices as persons with complex and multiple identities.

8. *Connect Land-Based Knowledges to the Classroom:* If teachers are hard pressed for ideas to include Native rhetorics in their composition courses, Joyce Rain Anderson's chapter on land-based pedagogy is useful. One approach is to work with local and Indigenous knowledges to help students make deeper relationships with the materials and the land and Native practices of communities. For example, Anderson shares how she brings students to the land to walk on it; students are exposed to Wampoam, to doll making and similar activities, thereby allowing them to break with the dominance of colonial stories of land and living in the Native experience ("Remapping Colonial Territories Bring Local Native Knowledge," Chapter 8).

9. *Examine the Languages of Native Literatures:* Study how American Indians use language: its forms, functions, and roles in code-switching, for instance, to understand the relevance of Native intellectual and cultural sovereignty in literature. When examining texts, make visible the

rhetorical moves in the texts to allow students to understand rhetorical sovereignty, advises Jessica Hoover. She argues, in Chapter 9, that colonial educational systems are responsible for the lack of promotion of Native and Indigenous literatures (Rhetorical Sovereignty in Poetry"). Hoover uses Diné writer Laura Tohe's *Tseyi/Deep in the Rock: Reflections on Canyon de Chelly* as an example in her classroom. Her article explores the ways in which Diné encourages students to discuss and understand why language is important in unpacking and affirming intellectual sovereignty.

10. *Use Native Rhetorics to Decolonize Digital Pedagogy:* Include Native rhetorics in the discussion of technology in the modern world. Native and American Indian rhetorics align with visual and material rhetorics and are not outside of it. Because digital and visual rhetorics platforms are used to shape the representations of Native and Indigenous rhetorics, Native rhetoricians need to be part of alliances aimed towards survivance. In Chapter 10, "Towards a Decolonial Digital and Visual American Indian Rhetorical Pedagogy" Angela Haas shares methodologies for bringing Native and Indigenous rhetorics into digital spaces. Classroom teachers can learn how she promotes rhetorical sovereignty and cultivates habits of mind that recognize Native rhetorics as intellectually and technologically relevant.

Survivance, Sovereignty, and Story: Teaching American Indian Rhetorics should be part of every seasoned and aspiring composition teacher's library. Scholars unveil their pedagogy and provide *a how-to guide*. Readers can begin at any chapter, but beginning with Rezza Crane's "forward" is best to orient themselves to the rest of the text. Crane's tone and message is inviting and tells the non-Indigenous practitioners that they can find ways of adopting relationships with Native rhetorics by seeking "Alliances and Community Building." According to Crane, do so by teaching writing in its context. Do so by adjusting one's orientations to pedagogy and context among other positionalities. Do so by using varied methodologies: story, Native people's ways of knowing, and habits of mind in the writing classroom. Overall, this text shows multiple ways to teach Native and Indigenous rhetorics in the composition classroom.

Heiwa: Heiwa is the pushing of the canoe on the unfolded mat to demonstrate how a canoe will actually sail in the ocean from the departure island to the destination island. The navigator uses one or more stars or constellations and uses the faunan etak (primary reference island) and possibly a fauan yatil (secondary reference island) in tracking the course. Heiwa is also used to explain the feeling of the canoe's movement caused by the waves and swells hitting the canoe.

Image Design:
Lawrence J. Cunningham and Manny Sikau