Proceedings and Abstracts of the 33rd Japan-U.S. Teacher Education Consortium

JUSTEC 2023

Creative Teaching and Learning

November 2nd-4th, 2023

Supported by:
The U.S. Embassy, Tokyo
The Ministry of Education, Culture, Sports, Science, and Technology, Japan
The American Association of Colleges for Teacher Education (AACTE)

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33rd Japan-U.S. Teacher Education Consortium

JUSTEC 2023

Creative Teaching and Learning
In-Person Conference
Nov. 2nd-Nov. 4th, 2023

Hosted by the University of West Florida
Venue: Hilton Pensacola Beach

Keynote Address:
Lessons from the Turtle and the Hare:
Slow is Smooth and Smooth is Fast

Dr. William Evans

- Professor in the School of Education, University of West Florida
- Executive Editor of Preventing School Failure and Associate Editor of Education and Treatment of Children, Behavioral Disorders, Diagnostique, and Journal of Alternative Schooling
- Fulbright Senior Specialist Fellowship in 2009
- Consultant for UNESCO policy development on the Southern Pacific Rim

Tentative Program
Day 1: Keynote Address & Reception
Day 2: Optional School Visit & Presentations
Day 3: Presentations

Call for Proposals
Extended Deadline:
July 25, 2023

Supported by:
The Embassy of the United States of America
The Ministry of Education, Culture, Sports, Science, and Technology, Japan
The American Association of Colleges for Teacher Education (AACTE)

https://justec.tamagawa.ac.jp

About JUSTEC

The Japan-U.S. Teacher Education Consortium (JUSTEC) was established in the late 1980s by several deans of education at universities in the United States and in Japan in the interest of fostering joint research efforts into teacher education issues of mutual interest in both countries. The original founding universities in the U.S. were: Stanford University, Vanderbilt University, Columbia University, University of Hawai'i at Mānoa, University of Washington, University of Minnesota, University of Indiana, San Diego State University, Michigan State University, Ohio State University, and NewYork City University. The original founding universities in Japan were: the University of Tokyo, Kyoto University, University of Tsukuba, Tokyo Gakugei University, Chiba University, Aichi University of Education, Hiroshima University, Hyogo University of Teacher Education, Waseda University, and Tamagawa University.

The organization was established under the aegis of AACTE (American Association of Colleges for Teacher Education) and, though it has evolved from being dean-centered to being faculty/researcher-centered over the years, JUSTEC had continued to hold annual conferences of teacher education professionals in alternate locations in the U.S. and Japan. For much of its history, the meetings were sponsored by AACTE and supported by AACTE staff. AACTE's longtime Executive Director, Dr. David Imig（Professor, University of Maryland and College Park, President and CEO Emeritus of AACTE） played a key role in the establishment and continuing operation of JUSTEC by publishing notices of the annual meetings, dedicating staff to supporting the planning and resourcing of the meetings, and participating in the meetings every year until his retirement. Since 2007, JUSTEC has continued as an independent organization of interested faculty and universities.

The objectives of JUSTEC are to:

- Provide opportunities for colleges and graduate schools of education to examine their study and practice;
- Serve as an incubator for new ideas, to provide opportunities to give presentations and to engage in discussion and cultural exchange for scholars, graduate students, in-service teachers, policy makers and others who are involved in education;
- Facilitate joint study and collaborative projects between US and Japanese scholars/educators and to support scholars' and practitioners' efforts towards better education; and
- Enhance academic networks between Japan and US scholars, educators, and practitioners.

In the history of JUSTEC, JUSTEC 2010 was a special convocation, as it marked the beginning of a renewal for JUSTEC. This year, Tamagawa University (Tokyo) and University of Puget Sound (Tacoma) became the official hub universities for JUSTEC in Japan and the U.S. In addition, JUSTEC 2010 has gained the support of the American Embassy in Japan; the Ministry of Education, Culture, Sports, Science, and Technology, Japan (MEXT); the Japan Educational Administration Society; the Japanese Association for the Study of Educational Administration; the Japan Society for the Studies on Educational Practices; and the Japan Association for Emotional Education; thereby providing particular educational benefits for Japan-U.S. educators.

In addition, the JUSTEC 2010 Forum invited a featured keynote speaker, Dr. Marilyn Cochran-Smith, the Cawthorne Professor of Teacher Education for Urban Schools and Director of the Doctoral Program in Curriculum and Instruction at the Lynch School of Education at Boston College (Boston, Massachusetts, USA). She is an elected member of the National Academy of Education and a former President of the American Educational Research Association (AERA). This forum was supported by the Tokyo Metropolitan Board of Education, the Kanagawa Prefectural Board of Education, the Saitama Prefectural Board of Education, and 5 other City Boards of Education (Machida, Inagi, Kawasaki, Sagamihara, Yokohama), as they consider JUSTEC to be highly beneficial not only for scholars but also for their in-service teachers.

The JUSTEC Seminar continues the tradition of Japanese and U.S. teacher educators convening to promote understanding of and collaborative research into education issues of interest in both Japan and the U.S. JUSTEC seminars include interactive presentations by Japanese and American educators, visits to area schools, formal and informal discussions among seminar participants, and cultural activities. Participation is open to all members of the education community – college/university administrators and faculty, PK-12 administrators and teachers, and students from all levels. Active participation and discussion are welcomed and encouraged, especially in the presentation of papers on topics confronting both Japanese and U.S. Teacher Education. Efforts to prepare paper/presentation handouts in both English and Japanese are appreciated. The primary language for presentations at the seminar will be English.

Previous JUSTEC Conferences & Host Universities

JUSTEC had continued to hold annual conferences of teacher education professionals in alternate locations in the U.S. and Japan until JUSTEC 2018. At the 30th Anniversary in 2018, the governing board members discussed and agreed to the basic rule of a minimum interval of 1 year between JUSTEC conferences to renew JUSTEC even better.

Year	University
2023	University of West Florida
2022	Niigata University (Virtual)
2021	JUSTEC Virtual Conference
2020	Gonzaga University had planed and prepared, however, JUSTEC 2020 had to be canceled due to COVID-19.
2018	Bukkyo University (the 30th Anniversary)
2017	University of Hawai‘i at Mānoa
2016	Ehime University
2015	University of West Florida
2014	Tokyo Gakugei University
2013	University of Puget Sound
2012	Naruto University of Education
2011	University of Massachusetts Lowell
2010	Tamagawa University
2009	University of Hawai‘i at Mānoa
2008	Bukkyo University
2007	University of Hawai‘i at Mānoa
2006	Tokyo Gakugei University
2005	Portland State University
2004	Waseda University
2003	California State University-Dominguez Hills
2002	Naruto University of Education
2001	University of Puget Sound
2000	Tamagawa University
1999	University of Hawai‘i at Mānoa
1998	Bukkyo University
1997	San Diego State University
1996	Naruto University of Education
1994	Hiroshima University
1993	University of Hawai‘i at Mānoa
1992	Tamagawa University
1991	Stanford University
1990	University of Tokyo
1989	University of Hawai‘i at Mānoa
1988	Kyoto University

For further Information, please refer to the JUSTEC web-site: **http://justec.tamagawa.ac.jp**

JUSTEC 2023 Program

Theme: Creative Teaching and Learning

Day 1 (Nov 2nd): Keynote Address & Reception

15:30-17:00 **JUSTEC 2023 Opening (Emerald Coast Room, 2nd Floor)**

Fred Hamel, Executive Director, JUSTEC U.S. Office
Professor, School of Education, Director of School-Based Experience, University of Puget Sound
Chie Ohtani, Executive Director, JUSTEC Japan Office
Professor, College of Education, Tamagawa University

Greetings

William Crawley, JUSTEC Governing Board Member
Dean, College of Education and Professional Studies, University of West Florida

Keynote Address:
Lessons from the Turtle and the Hare: Slow is Smooth and Smooth is Fast

Dr. William Evans

- Professor in the School of Education, University of West Florida
- Executive Editor of Preventing School Failure and Associate Editor of Education and Treatment of Children, Behavioral Disorders, Diagnostique, and Journal of Alternative Schooling
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18:00-20:00 **Reception**

Day 2 (Nov 3rd): Optional School Visit and Paper & Poster Presentation

9:00-11:00 **Paper Presentation 1: Teacher Education, Poverty, & Trauma**

Moderator: Dr. Christopher Wirth, University of West Florida
(Emerald Coast Room)

Note: To avoid confusion and to maintain consistency, the JUSTEC board has decided not to include academic titles for the presenters.

Time	Presenters	Title
9:00-9:30	Presentation 1: Karen Evans, Julie Gray, & Yoonjung Park University of West Florida	Culturally Relevant Curriculum to Address Poverty and Learning Loss
9:30-10:00	Presentation 2: Cailyn Hamstra & Mark Malisa University of West Florida	I'm pretty unconfident in my abilities: Preservice Elementary Teachers' Perceptions of Their Preparedness to Support Students with Histories of Trauma

10:00-10:30	Presentation 3: Susan James & Aneta Walker University of West Florida	Creating a Trauma Informed Workforce through Poverty Simulations
10:30-11:00	Presentation 4: Aneta Walker & Julie Gray University of West Florida	Engaging Educational Leadership Candidates in HIPs and Virtual Simulations

11:20 **Meet at the lobby**

11:40-12:45 **Optional School Visit**

Pensacola Beach Elementary School

Pensacola Beach Elementary School (PBES), awarded the National Blue Ribbon School of Excellence Award in 2007 and 2018. PBES has consistently been a top-performing school in the state. In 2010, the state of Florida officially recognized PBES as a "High Performing School", and in 2017 the state of Florida designated PBES a "School of Excellence". (Reference: https://pbes.org/)

11:40	Observe Dismissal
12:00-12:45	Visit with Principal Rachel Watts & Teachers

13:00-14:30 **Lunch on your own**

14:30-15:30 **Paper Presentation 2: Developing Cultural Competence**

Moderator: Dr. Diane Scott, University of West Florida
(Emerald Coast Room)

Note: To avoid confusion and to maintain consistency, the JUSTEC board has decided not to include academic titles for the presenters.

Time	Presenters	Title
14:30-15:00	Presentation 5: Minako McCarthy & Xu Di University of Hawai'i at Mānoa	In search of effective pedagogies of multicultural bias reduction for pre-service teachers in the Hawai'i Context
15:00-15:30	Presentation 6: Fred L. Hamel University of Puget Sound	Patterns in Pre-service Teachers' Reflections on their own Culturally Responsive Teaching

15:30-16:00 **Break**

16:00-16:45 **Poster Presentation (Emerald Coast Room)**

Note: To avoid confusion and to maintain consistency, the JUSTEC board has decided not to include academic titles for the presenters.

	Presenters	Title
A	Christopher Wirth, Daniel Drost, & Lauren Jonsson University of West Florida	Physical Education Teacher Education Preparation: Re-socializing Future Educators
B	Mercedes Athena Musto University of West Florida	The Impact of Academic Podcasting on Pre-Service Teacher Motivation
C	Kohji Yamaguchi, Hitoshi Takami, & Kiyoharu Hara Bukkyo University	A Practical Study on Teaching Strategies of Teachers Toward the Mid-career Phase:

		Targeting Elementary School Physical Education Classes
D	Kiyoharu Hara [1], Hitomi Asada [2], Kohji Yamaguchi [1], & Hitoshi Takami [1] [1] Bukkyo University [2] Kyoto Bunkyo University	Practical Educational Approach to School Absenteeism Considering What Support Teachers Should Provide to Short-Term Absentee Students

16:45-17:00 **Photo Session for a good memory of JUSTEC 2023**

18:00 **Dinner on your own**

Day 3 (Nov 4th): Paper Presentation

9:00-10:30 **Paper Presentation 3: Topics in STEM Teaching**

Moderator: Dr. Melani DiLoreto, University of West Florida
(Emerald Coast Room)

Note: To avoid confusion and to maintain consistency, the JUSTEC board has decided not to include academic titles for the presenters.

Time	Presenters	Title
9:00-9:30	Presentation 7: Rachel Orgel Montgomery County Public Schools, Maryland	Math is NOT an Island Social Emotional Learning in Elementary Mathematics
9:30-10:00	Presentation 8: Deleesa Butler, Hongwei Yang, and Mark Malisa University of West Florida	Examining Existing Factors Influencing Science Proficiency: How Can Existing Data Influence Pedagogy to Achieve Science Proficiency for the Minority Student Population?
10:00-10:30	Presentation 9: Uyen Nguyen [1], Thanh Buib [2], & Giang-Nguyen T. Nguyen [2] [1] University of Tennessee at Chattanooga [2] University of West Florida	Students' Difficulty in Learning the Chain Rule

10:30-10:45 **Break**

10:45-12:15 **Paper Presentation 4:**
Support Teacher Growth through Mixed Reality Simulations

Moderator: Dr. Nancy Hastings, University of West Florida
(Emerald Coast Room)

Note: To avoid confusion and to maintain consistency, the JUSTEC board has decided not to include academic titles for the presenters.

Time	Presenters	Title
10:45-11:15	Presentation 10: Shim Lew, John Pecore, and William Crawley University of West Florida	In-service Teachers' Culturally and Linguistically Responsive Teaching Practices in Mixed-reality Simulation

11:15-11:45	Presentation 11: JiHye Shin [1], Shim Lew[1], Minkyoung Kim[1], Melissa Demetrikopoulos[2], and John Pecore [1] [1] University of West Florida [2] Institute for Biomedical Philosophy	Pre-service Teachers' Experience of Mixed-reality Professional Development: Teaching Science in a Multilingual Classroom
11:45-12:15	Presentation 12: Sachiko Tosa Niigata University	Providing Deliberate Practices for Teachers Through Avatar Role Play: Using Action-Reaction Law of Physics as a Topic

12:15-13:15 **Lunch on your own**

13:30-15:30 **Paper Presentation 5:**
Teachers' Work Conditions and Creating Active Learning

Moderator: Dr. Tim Morse, University of West Florida
(Emerald Coast Room)

Note: To avoid confusion and to maintain consistency, the JUSTEC board has decided not to include academic titles for the presenters.

Time	Presenters	Title
13:30-14:00	Presentation 13: William Crawley, Bill Evans, Amany Habib, & Amy Crawley University of West Florida	An examination of teacher shortage and retention across international settings: A mixed methods
14:30-15:00	Presentation 14: Eric Kollar, William Crawley, Hongwei Yang, Charlie Penrod University of West Florida	Mentoring Future Teachers
15:00-15:30	Presentation 15: Joe P. Gaston, University of South Alabama; Byron Havard, University of West Florida	The Influence of Collaborative Video Production on Interest, Engagement, and Collaboration of Students Grades 6, 7, and 8

15:30-16:00 **Closing**

Remark
Di Xu, JUSTEC Governing Board Member
Professor, Educational Foundations, College of Education, University of Hawai'i at Mānoa

Lessons from the Turtle and the Hare: Slow is Smooth and Smooth is Fast

William Evans
University of West Frlorida

Many issues are involved with student learning and a functional use of skills. Some students find it difficult to progress through a standard curriculum and find themselves in a confusing amalgam of skills that they don't understand and may not be able to use. Likewise, teachers become frustrated that learning is not occurring for these students in a consistent and manageable manner. The answers to this are varied but a good deal of the issue can be focused on the measurement of accuracy and rate of response.

The best learning occurs when students are accurate with social and academic skills and can use these skills in a meaningful manner. This successful use of skills is dependent certainly on accurate knowledge of the skill but at least as important is the rate that students use the skill. Reading for example is a skill in which students comprehend and can apply the skill when they are accurate and perform at a high rate of proficiency. Students, however, who are accurate but slow in their reading responses may find that they may have difficulty with comprehension questions because all their reading efforts are focused on pronouncing words rather than gathering the main idea.

If teachers only focus on accuracy and the associated measure of percentage correct, they will find it difficult to distinguish between a student who has merely acquired a skill and one who is highly accurate and functioning at a high rate of response. In such a case, the slow but accurate student may have acquired a skill by reading 100% of the words correctly, but the other student also correctly read 100% of the words correctly, reads quickly. By only using percentage measures, both students appear to be the same, but the student who reads at a quick rate is said to be proficient in the skill. Therefore, percentage measures by themselves will never allow for an understanding of which students are merely accurate and acquiring a skill and which students are proficient. Research shows us that students who are proficient stand a much greater chance of applying and functionally using a skill a than those who have merely acquired a skill. Moreover, this differentiation between levels of learning affects teacher behavior in that teaching methods used with those who are proficient may vary greatly from those students who have only acquired a skill.

The story of the hare and tortoise teaches us many lessons about hard and consistent work. The admonition that "slow is smooth and smooth is fast" suggests that teachers focus on helping students with accuracy and lay a solid foundation for increasing rate so that students can apply the skill in a "smooth" and functional manner.

Biographical Notes

William Evans is a professor at the University of West Florida. He has written numerous books, book chapters and articles about assessment, student learning and behavior management. He has worked as a teacher at the elementary, middle, and high school levels and consults with teachers and schools throughout the United States. He was the Director of the Diagnostic Classroom at Shands Teaching Hospital at the University of Florida and is the Executive Editor of Preventing School Failure and an Associate Editor for a number of other journals.

He has served a consultant with schools and governmental agencies in many countries. He is the recipient of Fulbright and Erskine/Cambridge Fellowships and is a recognized leader in education. He also is a sought-after speaker who focuses on teacher motivation, assessment, and classroom management.

Culturally Relevant Curriculum to Address Poverty and Learning Loss

Karen Evans, Julie Gray, & Yoonjung Park
University of West Florida

Abstract
The Central Gulf Coast Children's Defense Fund summer program has provided a solution to the issues related to learning loss and poverty over the last three years. Elementary students were strategically selected from low-income, at-risk, and minority communities to participate in the Freedom Schools program. This study describes the benefits to the students, their families, and the community, as well as the Servant Leader Interns who provided the culturally relevant curriculum. The history, structure, and essential components of Freedom Schools are described for the national model and Central Gulf Coast's approach. The benefits of the program are also shared, as well as the practical implications for the participants in this study.

Background Information and Connection to Conference Theme
Learning loss among low-performing students has been a concern among educators for many years, and the recent pandemic drew more attention to the issue. The significant learning loss experienced during the recent pandemic has widened the gap between higher and lower performing students around the world (UNCF, 2022). Due to the pandemic, the gap in reading scores between low income schools and high-income schools increased as much as 15% (Kuhfield et al., 2022). The World Bank and the United Nations Educational, Scientific, and Cultural Organization (UNESCO) are two organizations that have been investigating this gap and the impacts of poverty around the world (2022). In 2015 UNESCO included education as one of its 17 sustainable development goals, thus, establishing its importance on a global scale. Within the literature review, learning loss, learning poverty, and culturally relevant curriculum will be defined and described with examples. The CGC CDF Freedom Schools addresses issues related to learning loss in implementing an innovative culturally relevant curriculum.

Clarification of Content Described – historical (case study shared)

Data to be Presented – We will share the results from the National Reading Achievement Data (Basic Reading Inventory), STAR Reading Test from 2022, and survey data (participant, parent/guardian, and staff; three years)

Clarification of how presentation advances theory, knowledge or practice – Culturally responsive educators believe that all children can learn, promote high learning expectations for all students, integrate diverse and dynamic teaching strategies, and invite parents, guardians, and community members to participate in the classroom activities (Howard, 2020). The Freedom Schools model embeds culturally relevant curriculum and structures to address learning loss and learning poverty.

Research Methods – This study represents a longitudinal case study of the CGC CDF Freedom Schools program for the last three summers.

Overview of presentation approach – We will be using PowerPoint and video to share an overview of the program with an emphasis on the benefits to the participants, staff, and the community.

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(This list is not comprehensive due to the page limitation.)

"I'm pretty unconfident in my abilities:" Preservice Elementary Teachers' Perceptions of Their Preparedness to Support Students with Histories of Trauma

Cailyn Hamstra, Mark Malisa
University of West Florida

Background and Context

Trauma-informed teaching has recently gained increased attention from both researchers and educators (Foreman, 2021). This is largely due to the widespread prevalence of childhood traumatic experiences and the growing knowledge of the deleterious outcomes often resulting from childhood trauma (Foreman, 2021). Despite this, teachers often have little exposure to recommended practices for supporting students with histories of trauma (Darragh & Petrie, 2021).

Connection to Teacher Education and JUSTEC Conference Themes

Although the literature is scant, studies indicate teacher preparation programs do not sufficiently prepare preservice teachers in trauma-informed approaches despite the benefits of and need for such approaches (Appleton, 2022; Rahimi et.al, 2021). This is concerning due to the prevalence of trauma among children: an estimated 1 in 4 children experience one or more potentially traumatic events before the age of 3 (Briggs-Gowan et al., 2010), and 13% and 29% of children have experienced four or more potentially traumatic events from ages 2-9 and ages 10-17, respectively (Finkelhor et al., 2007). Further, the effects of trauma are often evident in the classroom, manifesting as difficulty with emotional regulation (Lubit et al., 2003), attention and learning difficulties (Anthony et al., 1999), and engaging in bullying and aggression (Margolin & Gordis, 2000). Thus, preservice teachers will undoubtedly encounter students with traumatic histories, yet those who lack trauma-informed training will likely have difficulty identifying and distinguishing indicators of trauma from other behaviors and effectively supporting students with histories of trauma. Therefore, teacher education programs must ensure preservice teachers are adequately prepared to support students with traumatic histories.

The current study is a needs analysis to understand elementary preservice teachers' perceptions of their knowledge, abilities, and preparedness to support students with histories of trauma. Qualitative, semi-structured interviews with seven elementary preservice teachers were conducted. Results indicate elementary preservice teachers have a foundational knowledge of trauma but feel "unconfident" and "unprepared" to support these students. Our presentation highlights the way schools and teachers play pivotal roles in making children whole as part of students' recoveries from trauma. Our study shows the importance of infusing trauma studies into teacher education programs to ensure preservice teachers are more prepared to support students with histories of trauma, thereby facilitating their academic and personal success. This is particularly so in times when there are disasters for which there is little preparation as well as with traumatic experiences not easily captured. At a time when traumas are no longer generally confined to one specific region of the world, isolationist understandings of trauma might limit educators' ability to effectively teach students who have experienced trauma; Covid-19 highlighted the significance of acknowledging and understanding trauma from a global perspective.

Data Presentation: Empirical Research and From Field (original research with new data)

Research Method: Qualitative Interpretive Phenomenological Study

Overview of Presentation:
Background and Context; Theoretical Framework; Methodology; Results; Implications; Questions and Observations

References

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Creating a Trauma Informed Workforce through Poverty Simulations

Susan James & Aneta Walker
University of West Florida

This conceptual paper describes the efforts of professors from multiple disciplines within a university to address creative teaching and learning experiences related to preparing graduates working in service fields for their work in high-poverty communities. Faculty members from various programs (Nursing, Teacher Education and Educational Leadership, Social Work, Biomedical, Physician Assistants, Criminal Justice, Health Promotion, and General Studies) jointly facilitated a high-impact simulation to ascertain the impact on student's perceptions and personal biases toward disadvantaged community members. The findings are essential for stimulating learning (especially in an online learning environment) about the social injustices resulting from poverty. The study comes at a time of a pandemic when online learning is at its height and issues with poverty intensifying. This study aimed to provide students with a creative teaching and learning approach through a high-impact experience, allowing faculty and students to analyze their perceptions of poverty.

The Theoretical Framework used was Bandura's (1971) Social Learning Theory (SLT) (1971). The simulation provides a high-impact practice that allows for the construct of *observational learning*. By providing multiple ways to change behavior (i.e., knowledge and attitudes) through the simulated environment, *reciprocal determination*, a construct of Bandura's SLT, is emphasized. This posits the importance of the interaction among people, the environment, and their behaviors (Bandura, 1971). After the simulation, the focus groups allowed for discussion about community resources available to graduates upon entering the workforce, which, according to Bandura (1971), would provide students with the *self-efficacy* to perform in the workforce in their service-related jobs. Bandura (1971) posited providing this type of training allows for a level of *behavioral capability* that educates students to be aware of possible client interventions.

Quantitative data were collected through electronic surveys and qualitative data through focus group discussions, which were digitally recorded and transcribed. Data analyses were conducted via Qualtrics and SPSS for independent sample t-tests for the quantitative data.

A key realization and point in the study is the fact that paradigm shifts in personal thinking and professional behavior of our students changed in the categories of jobs, empathy development, compounding circumstances, issues prioritizing, rationale for theft, hard choices and decisions, limited knowledge of resource process, stress, stress from simulation, effects of poverty, and stigma in poverty. After the initial analysis, additional researchers reviewed the 428 coded items and identified three emergent themes to understand phenomena in the context-specific data. These emergent themes were (a) Process, (b) Responses, and (c) Resources. Additionally, there were several key statements and codes that were classified as intersecting and cross-sectional themes.

As professors in higher education, we must seek to advocate for the best interests of our students and place the issues of poverty and associated trauma at the forefront of our educational discussions instead of placing these issues on the periphery. We do not have all the answers, but the results of our study motivate us to reframe educational paradigms that influence how we view community members in poverty.

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Engaging Educational Leadership Candidates in HIPs and Virtual Simulations

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Abstract

The authors describe how the use of High-Impact Practices (HIP) and augmented virtual reality simulation experiences provided opportunities for educational leadership candidates to apply instructional leadership practices to authentic, problem-based situations. The conceptual framework is aligned to Kolb's Experiential Learning Theory (ELT) and Kuh's teaching and learning practices designated as High Impact Practices (HIPs). The ELT and HIPs provide the constructs for promoting deep learning through high levels of student engagement, frequent, timely, and constructive feedback, leadership coaching, and application of leadership knowledge and skills in relevant, real-world school-based situations. The simulations allow faculty to offer specific growth areas to strengthen and improve aspiring school leaders' decision-making skills in a safe environment. The paper also discusses how experiential learning through virtual simulation was used to strengthen candidates' transformational learning process and bridge theory to practice in a virtual reality environment.

Background Information and Connection to Conference Theme

In this study, the authors describe the design of their leadership preparation model, which embedded strategic experiential learning opportunities, such as immersive mixed reality simulations, through the implementation of high-impact practices. In a vast and ever-changing world, teaching problem solving skills, effective communication, and critical thinking through more engaging, rigorous, and relevant curricula is necessary in preparing educational leaders for leading in diverse settings and with diverse populations.

It is challenging for fully online leadership preparation programs (LPPs) to provide realistic practice for candidates before entering the field and focused, meaningful, and immediate feedback. This challenge initiated an exploration of virtual simulation, in particular, mixed-reality simulation in research, teaching, and learning. Using virtual simulations is an innovative HIP solution that provides a safe space to foster candidates' learning and prepare them for the challenges they may face as school leaders in the K-12 environment.

Clarification of Content Described – historical (case study shared)

Data to be Presented – The authors will share qualitative findings from a two year longitudinal study.

Clarification of how presentation advances theory, knowledge or practice – Through the process of embedding high-impact practices in program content and field experiences, Educational Leadership (EDL) faculty investigated the perceptions and effects the experiences had on preparation for the field. Kolb's (1984) ELT and Kuh's High Impact Practices (Kuh, 2008; Kuh & O'Donnell, 2013) served as the conceptual framework for the leadership preparation model development.

Research Methods – The authors reviewed and analyzed open-ended responses from leadership candidates over the last two years. Anonymous student and course feedback, leadership demonstration video assessments, and questionnaires were analyzed, as well as course evaluations.

Overview of presentation approach – We will be using PowerPoint to share an overview of the program with an emphasis on the benefits to the participants, staff, and the community.

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In search of effective pedagogies of multicultural bias reduction for pre-service teachers in the Hawai‘i Context

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Our earth and universe are created with infinite, rich and continuous diversity and manifestations. There is no exception with humanity. Living in a multicultural, mobile society and the world, people inevitably live with different racial and ethnic groups. When teachers and students interact with other groups, disagreements, misunderstandings, misjudgments, and other conflicts, such as bullying and discrimination, may occur. Racism is a belief that a human group "has the power to enforce laws, institutions, and norms" by oppressing and dehumanizing other groups (Banks & McGee Banks, 2005, p. 451). This has been a serious challenge for education, especially teacher education, persistently and urgently. Studying racial and ethnic biases, especially implicit biases, has become crucial, but they are challenging to identify. For example, teachers and students in an implicit bias construct endorse affirmative action but behave adversely, intentionally or (Haney-Lopez, 2007). In teacher education, multicultural education highlights practices for improving students' educational achievement and intergroup relations; nevertheless, there was insufficient empirical evidence that these practices improve student achievement and actual behaviors (Zirkel, 2008).

This study examines an innovative approach to multicultural education that addressed pre-service teachers' racial and ethnic biases during COVID-19 and seeks insights and effective pedagogies for transformative multicultural education. Instead of the traditional approach of reading and discussion only, this course used a series of personalized experiential and scholarly activities to engage students to make real-life connections and in-depth personal and professional reflections. It challenged the students to practice the actions that align with multicultural theories and purposes and share their improvements and insights.

James Banks's Multicultural Education (Banks, 2009) was a theoretical framework. Two research questions explore the effective pedagogies for post-COVID-19 classrooms: How do pre-service teacher students perceive their racial and ethnic biases? How would students understand their biases for future application in their classrooms? A qualitative phenomenological method was used to examine the impact of a multicultural education course for pre-service teachers. Voluntary interview (n=10) and survey (n=21) participants were obtained from multicultural education courses between September 2021 to May 2022. Qualitative data were analyzed after being transcribed using Otter Voice software and coding method to look for potential themes.

The rich data showed a salient pattern of *concealing first but then disclosing with hesitation*. Clearly, it was challenging for all participants to confront their racial and ethnic biases. The finding revealed that students had different levels and patterns of disclosing process; some were aware of their biases, while others did not fully recognize them. One of the main themes was that participants positioned themselves in an ingroup and outgroup to recall and examine their biases, experiences, and transformations. Moreover, many participants noted the importance of continuity in working on their own biases, accepting diversity, and getting to know people personally and their future application. Zirkel (2008) explained, "Multicultural educational practice has a benefit for the academic outcomes of all students, not just students of color" (p. 1147). During the interviews, Caucasian pre-service teachers struggled to confront their biases. The findings indicated some deliberate and conscious efforts for micro-level steps to resolving personal biases. Students' recognizing the importance of individual awareness and acknowledgment may signify reducing their biases and others.

This study's findings showed the complex process and experiences in a pre-service multicultural education course. It provides insights into the effective pedagogies of students' transformative outcomes beyond the subject content. One of the major implications for theory and practice is that racial and ethnic biases play a crucial role that pre-service teachers want to continue working on to overcome their biases. Their biases were connected to ingroup and outgroup relations and can be explained by other elements, such as multicultural variables and their intersectionality. Therefore, through the concerted professional efforts of educators, teachers, and students, this study illustrated that it is possible and essential for them to be open to themselves to examine their biases profoundly and to envision their future goals as transformations for their personal and professional improvement.

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Patterns in Pre-service Teachers' Reflections on their own Culturally Responsive Teaching

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This presentation draws upon pre-service teachers' written reflections on video recordings of their own teaching – with an emphasis on the ways candidates articulated the presence of culturally responsive & equity based teaching in their own classroom practice. The central question of the study is: What patterns exist in the ways pre-service teachers make sense of culturally responsive & equity-based teaching, when they evaluate their own practice?

The context of the presentation is a one year Master of Arts in Teaching program in the Pacific Northwest which prepares roughly 30 candidates per year across the K-12 spectrum. Candidates complete student teaching across 16 weeks in the spring semester (January - May). Coursework on culturally responsive & equity based teaching (Hackman 2005; Hammond 2015, Milner 2020, Muhammad 2020, Stembridge 2020) is provided both prior to student teaching and during the student teaching semester. During student teaching, candidates complete a video assessment, in which they video-record their own teaching and complete reflective writing to articulate various ways in which their teaching practice is meeting program standards. One requirement of the video assignment is that candidates must reflect on the ways their own teaching reflects and exhibits culturally-responsive / equity-based practice.

This study is based on samples of student writing from the video reflection assignment. Samples of candidate writing were reviewed and evaluated using grounded theory and the constant comparative method – identifying patterns in student writing through close reading, developing initial categories, and then revising those categories, through discussion with faculty colleagues, to locate the characteristics of reflections that met standards on the assignment and those that did not.

The study reflects the conference theme of "creative teaching and learning" – in that our program is revising the usual ways in which student teachers are taught and evaluated. Specifically, we find that student teachers often have a "theoretical" sense of culturally responsive teaching - yet a less clear sense of what this would look like in actual practice. We are striving to be more intentional with our own teacher education practices to impact the ways in which preservice teachers come to define and see culturally responsive teaching in the classroom. This study seeks to advance knowledge in the field by identifying specific characteristics of student reflections that reflect a robust sense of culturally responsive practice compared to those that are more diluted or superficial. This work also relates to new state standards that reflect culturally responsive teacher preparation – and it relates to JUSTEC as a whole as an international organization focused on expanding cultural awareness / frameworks for teaching.

The presentation will provide context for the research by briefly explaining aspects of MAT coursework related to culturally responsive & equity based practice, and by presenting the video assignment and the rubric used to evaluate student reflections. General findings will be shared – including examples of patterns that emerged in reflections ranked as "approaching" standard compared to those ranked as "meeting" standard. Critical questions will be raised to encourage audience discussion.

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Math is NOT an Island Social Emotional Learning in Elementary Mathematics

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Mathematics is often viewed as neutral, unbiased, and devoid of conflict. While widely accepted, this is untrue. "Children of certain racial, ethnic, language, gender, ability, and socioeconomic backgrounds experience mathematics education in school differently, and many are disaffected by their mathematics education experiences" (Aguirre et al., 2017, p. 125). Like many other districts, our students' educational outcomes remain predictable by these various factors. In response to the COVID-19 Pandemic, the elementary mathematics team felt an even stronger sense of urgency to support our students. Mathematics could not be isolated from social-emotional learning, and we needed to find creative solutions to support teachers.

In the summer leading up to the 2021-2022 school year, Montgomery County Public Schools (MCPS) shared the first iteration of our creative solution. Working with a team of mathematics teachers, coaches, school psychologists, and special educators, we created pre-kindergarten through fifth-grade guidance documents. These guidance documents provided concrete examples on how to use the given lessons for the first weeks of school and, with minimal effort, infuse culturally responsive relationship building, trauma-informed practices, and opportunities to teach routines and support our students' physical, mental, and emotional health. Following the project's rollout, we were overwhelmed with positive feedback from students, teachers, administrators, and district leaders. The project was seen as timely, manageable, and effective. Our story was even featured in the National Council of Teachers of Mathematics (NCTM) special journal issue on social-emotional learning (Orgel, 2022).

In this presentation, I will outline how we developed the project and its positive impact. I will also share how it has evolved to support our district's varying needs. In the second iteration, we gathered student voice data to expand our guidance documents. This year, we have partnered with the social studies curriculum team to make intentional connections between content areas. To close the session, I plan to provide opportunities for participants to review their curricula for moments to include social-emotional learning seamlessly. More and more, our teachers and leaders are recognizing that math is not an island. My hope with this presentation is that others will see the same and walk away with the tools to make positive changes when they return home.

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Examining Existing Factors Influencing Science Proficiency: How Can Existing Data Influence Pedagogy to Achieve Science Proficiency for the Minority Student Population?

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Summary of Research:
The Black student population underperforms all other demographic groups in high school science achievement. The underperformance has a bearing on the employment opportunities for Black students upon graduation. The purpose of this quantitative correlational research is to examine various factors influencing the science proficiency of Black students in selected Florida high schools. Florida's PK–20 Education Information Portal provided the existing academic achievement scores for Black students in the two school districts (D1 and D2) used for this study. Vroom's expectancy theory served as the theoretical framework for understanding the relationship between student demographic variables and science achievement in the Biology I End of Course Exam. The research used Pearson's chi-square ($\chi 2$) and Phi (φ) statistics to analyze the relationship between proficiency status and each of three dichotomously coded student demographic variables: (a) gender, (b) economic status and (c) grade group. The results showed no significant relationship between proficiency status and (a) gender (D1: $\chi 2$ (1) = .023, p = .880, φ = .013, D2: $\chi 2$ (1) = 3.908, p = .048, φ = .132) and a moderately significant relationship between (b) economic status (D1: $\chi 2$ (1) = 4.885, p = .027, φ = .187, D2: $\chi 2$ (1) = 8.959, p = .003, φ = .200). The results showed the most robust statistical relationship between proficiency status and (c) grade group (D1: $\chi 2$ (1) = 16.796, p < .001, φ = -.346, D2: $\chi 2$ (1) = 34.984, p < .001, φ = -.395). The results of this study can inform teachers and policymakers on best practices for narrowing the science achievement gap between Black students and students from other demographic groups.

Findings:
The conclusions of this research study was that the overall results conveyed a significant association between student economic status and proficiency status on Florida's Biology I End of Course Exam and a significant association between the dominant student population or grade group and proficiency status on Florida's Biology I End of Course Exam. The research study did not convey a significant association between student gender and proficiency status on Florida's Biology I End of Course Exam. This study found that when it comes to Florida's Black high school students, female students, non-economically disadvantaged students, and students taking the Biology I EOC when their peer group is the dominant grade groups have a greater force of motivation to achieve a proficient status on the Biology I EOC exam.

Potential Implications:
The research study has implications to transform science by proposing equitable science curricula and instruction to motivate student interest. Analyzing existing data based on various student factors has allowed me to understand that current policy and pedagogy require the support of curriculum and instruction geared toward the student audience. We hope to spark collaborations among educators and administrators in demographically similar school districts and educautional institutions to help better prepare students who may lack the additional resources to help understand rigorous science content.

Keywords: academic achievement, culture, gender, race, science education, social class

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Students' Difficulty in Learning the Chain Rule

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Introduction

Calculus is a foundational course for advanced mathematics courses. In a study, Sofronas et al. (2011) interviewed 24 experts; these experts agreed that mastering derivatives is essential for students who complete the first-year Calculus class. To solve derivative problems, students need to know many rules; among them, the chain rule is considered the hardest one to master (Clark et al., 2002). As defined by Stewart and Watson (2021), the chain rule is "If g is differentiable at x and f is differentiable at g(x), then the composite function F = f∘g defined by F = f(g(x)) is differentiable at x and F is given by the product F'(x) = f'(g(x))*g'(x)." Jojo (2014) found that students could apply and understand the chain rule, but they still made mistakes when solving differentiation problems involving the chain rule. According to Abd Nassir et al. (2018), a poor understanding of Algebra and Pre-Calculus concepts are the cause of the mistakes. Based on these facts, this research used a case-by-case method (Zainal, 2007) to investigate the mistakes of some undergraduate students at a liberal arts university in applying the chain rule.

Methods

This is a mixed methods study. The participants were 12 students enrolled in Calculus I course in Fall 2022 semester. They were asked to solve four derivative problems using the chain rule. The problems involve two types of functions: exponential and trigonometric. The data have been collected and analyzed to identify errors in students' solutions. The data analysis consists of two steps: First, a descriptive analysis of the frequency and percentage of each type of error is conducted. Second, a thematic analysis of the patterns and causes of each type of error is performed. The errors are classified into four categories: algebraic errors, trigonometric errors, power function errors, and chain rule application errors.The data indicate the errors in students' answers due to a lack of trigonometric comprehension and power function misinterpretation to solve the given problems. Almost all of the students were struggling in interpreting and applying trigonometry formulae. The OCM method did help students in directly applying the chain rule; however, it becomes useless if students lack skills in trigonometric and exponential.

Implications

The students were taught the chain rule using the Open-Closed Method (OCM). The result from this study supports that the OCM method is helpful in guiding students in learning the chain rule. Hence, this study suggests that students should master trigonometric and power functions to strengthen their skills to do well with derivative problems because such knowledge is the foundation of students' success in upper mathematics and physics courses. The findings of this paper have practical implications for both teachers and students of the Calculus I Course. Teachers may use the results to identify the common difficulties and misconceptions that students have when applying the chain rule, then provide more feedback and guidance to help them overcome these challenges. Students might use the results to reflect on their own mistakes and improve their understanding and skills of the chain rule.Further research may consider students' mistakes in applying the chain rule in other Calculus courses beyond Calculus I. Moreover, we may compare the differentiation skills of students taught using the OCM method versus students being taught using other methods.

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In-service Teachers' Culturally and Linguistically Responsive Teaching Practices in Mixed-reality Simulation

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While the number of multilingual learners (MLs) continues to grow in the U.S., they have persistently underperformed in elementary and secondary schools and are underrepresented─particularly in STEM fields─in both college and the workforce (National Academies of Sciences, Engineering, and Medicine [NASEM], 2018). This persisting educational inequity between MLs and monolingual English speaking students (e.g., Kanno & Kangas, 2014) underscore the need for preparing all teachers to support MLs (de Jong & Harper, 2005). To develop teachers' knowledge, skills, and disposition for working with MLs, field experience is essential (Crookes, 2003). Simulation technology has been limitedly applied as a viable safe alternative (Dieker et al., 2007) to actual classrooms for providing in-service teachers' professional development teaching MLs. Grounded in the language-based approach to content instruction (de Oliveira, 2016) and the approximations of practice (Grossman et al., 2009), this study investigates how in-service teachers experience and perceive mixed-reality simulation to practice culturally and linguistically responsive pedagogies in teaching STEM literacy to one Khmer speaking ML and four English speaking avatar students. Using an embedded single case study (Yin, 2018), two participants' teaching simulations, reflections, and individual interviews were analyzed. This study found that participant teachers were very skillful in connecting academic concepts to students' life experiences, using instructional and interactional scaffolding, and creating a safe environment for the ML avatar. However, having established their own lesson sequence and accommodations for struggling students, participants did not easily incorporate newly learned culturally and linguistically responsive pedagogies, such as implementing cultural and linguistic diversity into their content lessons, empowering the ML avatar as an equally capable member, and maintaining high expectations and challenging tasks for the ML avatar. Participants perceived simulation technology as highly beneficial to try out new strategies beyond their comfort zone. However, their prior reliance on specific instructional strategies to assess students' understanding highlighted technical constraints such as avatars' inability to write, move their body, and chorally respond, which limited ways to monitor avatar students' learning progress. This study concludes with the implications for both ML teacher educators and simulation technology researchers that more focused and targeted use of simulation is required for in-service teachers' professional development to provide more equitable education.

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Pre-service Teachers' Experience of Mixed-reality Professional Development: Teaching Science in a Multilingual Classroom

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Most science teachers in the U.S. have received only limited preparation in working with multilingual learners (MLs). Despite the rapidly growing number of MLs in US K-12 schools, their low academic achievement in STEM subject matters have persisted for decades. To develop pre-service teachers' ability to teach science to MLs, culturally sustaining pedagogies (Paris, 2012) and language-based approach to content instruction (de Oliveira, 2016) have widely been taught in teacher education programs; however, pre-service teachers have limited opportunities to apply these pedagogies in their training programs. Even field experience has logistical limitations to apply a wide variety of instructional practices to help MLs. In this context, simulation technology has been applied as a viable safe alternative (Dieker et al., 2007) to actual classrooms for providing pre-service teachers' professional development teaching MLs. This study investigates how pre-service teachers develop culturally and linguistically sustaining STEM pedagogies (CLSSP) in a simulated classroom having one Khmer speaking ML and four English speaking avatar students. This study is grounded in culturally sustaining pedagogies (Paris, 2012) and language-based approach to content instruction (LACI)'s six Cs of support - "connection," "culture," "code-breaking," "challenge," "community and collaboration," and "classroom interaction" (de Oliveira, 2016) as well as experiential learning (Kolb, 1984). The unit was subdivided to focus on culture-focused ("connection," "culture," "challenge," and "community and collaboration") and language-focused ("code-breaking" and "classroom interaction") components. Using a concurrent nested mixed-methods design (Kroll & Neri, 2009), quantitative and qualitative data were collected concurrently to address the research question. The data included baseline measures of teaching skills and repeated measures of these same skills over time to gauge participant improvement in culturally and linguistically sustaining STEM practices as measured by CLSSP rubric scores, self-report scores, surveys, and participant feedback through focus groups.

Students self-reported improvements in all six Cs or support of the CLSSP rubric. Particularly, in "connection" of the CLSSP rubric, at baseline 9% of students scored a 1 (highly ineffective), 45% scored a 2 (moderately ineffective), 45% scored a 3 (moderately effective), and 0% scored a 4 (highly effective) compared to 0% scored a 1, 20% scored a 2, 60% scored a 3, and 20% scored a 4 (mean score went from 2.34 to 3.00). Although students self-reported lower competencies for the "culture" of the CLSSP rubric, they reported improvements at the end of the experience. At baseline, 45% of students) scored a 1, 55% scored a 2, 0% scored a 3, and 0% scored a 4 compared to 10% scored a 1, 50% scored a 2, 30% scored a 3, and 10% scored a 4 (mean score went from 1.55 to 2.44). Students self-reported improvements in four other Cs of support similarly.

During the focus group, participants reported that having the concepts divided into two separate lessons (culture-focused and language-focused) was helpful for their learning as was having the opportunity to teach and refine the same lesson four times. While science was not the forte of many of the elementary education pre-service teachers, they reported that it was a useful subject matter to explore these concepts and learn how to make use of models and other teaching aids which they can apply to other subjects. They also reported that the examples and other components of the learning modules were helpful in their understanding of the six Cs of support as well as helping them realize their weakness and develop concrete improvement plans for what they would do in their future classrooms.

The survey results echoe the focus group findings regarding the benefits of online modules in helping participants develop a solid understanding of each support. Reviewing various application examples of each support was indicated as very helpful as it enhanced participants' ability to contextualize the strategies in their teaching. The surveys also revealed that repeatedly teaching avatars with the same scenario, along with mentor feedback, were valuable. Notably, the survey reveals that participants initially gain substantial benefit from online modules when establishing a mental model regarding the strategies of the six Cs. However, as they repeat their teaching, they find greater benefit from avatar teaching simulation to improve their application of the strategies. This finding aligns with the study's theoretical framework and promotes the use of the experiential learning cycle to enhance their instructional practices for MLs.

This study concludes with the implications for both ML teacher educators and simulation technology researchers including the benefits of the focused online modules and the opportunity to repeatedly teach and refine the same lesson.

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Providing Deliberate Practices for Teachers Through Avatar Role Play: Using Action-Reaction Law of Physics as a Topic

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In this rapidly changing society where science and technology are playing vital roles, it is important for students to acquire essential understanding of natural phenomena and competencies in solving scientific problems. The new Course of Study fully implemented in 2022 in hish schools in Japan emphasizes student collaborative, active, and deep-approach to learning[1]. In science, inquiry is said to be the pillar of science learning in the Course of Study, and it is the teacher who are expected to navigate students through their inquiry processes by the use of effective instructional strategies, such as questing techniques. However, it is often difficult for teachers to master such skills especially in a very abstract field like physics. The need for a program that provides teachers with deliberate practice[2] opportunities for effective questioning is inceasing.

In this study, avatar role playing is used as a way to provide teachers in science with opportunities to practice their questioning techniques in a safe environment using avatars as students [3]. A program was developed including a ten-minute avatar online session (Fig. 1) for the topic of action and reaction law, and implemented for 7 pre-service teachers. The avatar session was conducted twice for each participant and a feedback session with their advisor took place between the avatar sessions so that the participants had a chance to reflect on their performance and to receive constructive comments to improve their performance. Their performance was coded using two scales: concept building (content knowledge) and PCK (pedagogical content knowledge) criteia.

Fig. 1 A scene of the avatar role-playing session

The preliminary results are shown in Table 1. In spite of the apparent improvement of their techniques in delivery such as the tone of the voice and the use of the blackboard, concept building was difficult to achieve in all the cases. Also, in many of the sessions, the teacher provided his/her explanations in a teacher-centered way. All the participants indicated that the sessions were helpful for them in the sense that the sessions made them realize 1) their insufficient content knowledge, and 2) their inability of using student responses to construct correct scientific knowledge. How to improve the program will be discussed in the presentation.

Level	Content Knowledge	PCK	1st	2nd
11	Insufficient understanding of the physics content/focal point	Teacher-centered	3	2
12		Teacher-centered, but student discussions included	2	2
13		Student-centered, support student own way of understanding	0	0
21	Sufficient understanding of the physics content, but the focal point is not clear	Teacher-centered	0	1
22		Teacher-centered, but student discussions included	2	2
23		Student-centered, support student own way of understanding	0	0
31	Deep understanding of the physics content, clear focal point, coherent order of presenting the content	Teacher-centered	0	0
32		Teacher-centered, but student discussions included	0	0
33		Student-centered, support student own way of understanding	0	0

Table 1. Preliminary results of teacher's 1st and 2nd performances on 2 scales (N=7)

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[2] School of Education, University of West Florida (2021): Teach-To-Avatar. Retrieved on June 14, 2023 from https://uwf.edu/ceps/departments/school-of-education/teach-to-avatar/

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An examination of teacher shortage and retention across international settings: A mixed methods review of the issues

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Background: The need for well-prepared teachers is an international concern (Global Partnership for Education, 2022; Nguyen, Lam, & Bruno, 2022; UNESCO, 2023). Although teacher attrition has been a concern for many, this presentation reports findings related to the causes of teacher shortages and reasons others stay across various educational settings.

The current study examined literature related to teacher recruitment and retention . The reasons teachers leave to pursue other careers and ways that have been proven effective in retention as well as ways to remedy teacher shortage are discussed. An analysis by discipline, grade levels, and type of teacher training will be presented. The role of teacher preparation programs is also examined.

Theoretical Framework: To find explanations to the complex concepts concerning teacher attrition, the researchers identified key notions related to teacher shortage and teacher retention through the examination of various theories (see Darling-Hammond & Podolsky, 2019); however, educational settings differ, and the question remains – how do various international educational settings remedy teacher shortages and retain those who are currently teaching?

Methodology: Mixed methods of literature review, examination of open-source documents, interviews using open-ended questions, and a survey with close-ended questions were used with a sample of international educators in various discipline. Analyses of data across sources produced a better explanation of the phenomenon and allowed for a better understanding of the issues concerning recruitment of retention of teachers.

Findings and Conclusions: The findings revealed that while these challenges are common across international venues, the dynamics and associated answers may vary depending on the cultural context of the international educational settings that were examined. Some of the effective practices align well with the creative teaching and learning notion and could be replicated in a variety of venues.

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Mentoring Future Teachers

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Having a mentor in college can be instrumental in preparing a student for their future career as a teacher. Mentors can provide valuable career advice by helping students explore different career paths, understand industry trends, and identify their strengths and interests. Kram (1985) emphasized the role of mentors in providing career-related information and facilitating career decision-making processes. Mentors can provide networking opportunities by introducing students to professionals in education, helping them build useful connections and expand their professional networks in K-12 settings. A study by Ragins and Verbos (2007) suggested mentoring relationships contribute to increased access to career-related resources and opportunities. Mentors can support students in developing crucial skills necessary for teaching careers, such as communication, pedagogical knowledge, problem-solving, interpersonal skills, critical thinking skills, and technological proficiency, to name a few. According to research by Eby et al. (2008), mentoring relationships positively impact career attitudes, work attitudes, and other career outcomes. Mentoring can assist students in transitioning from the college environment to the workplace by providing guidance on workplace norms, expectations, and professional etiquette. Data were collected from interview testimonials with current students and recent alumni.

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The Influence of Collaborative Video Production on Interest, Engagement, and Collaboration of Students Grades 6, 7, and 8

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Collaborative video production (CVP) is a multi-step, collaborative activity that allows students to demonstrate their understanding through the medium of video. This proposal aligns with the transformation criteria for proposal submissions in that CVP transforms student interest, engagement, and collaboration in academic content and the assessment of these three critical aspects of learning. Through the CVP process, students work in collaborative groups to perform various video production roles. During the activity, each group must decide on a story that successfully demonstrates their understanding of the assigned content, storyboard their ideas, write a script, film, edit, and present their video. CVP activities can be used for a variety of content topics, grade levels, and learning environments. The purpose of this study was to investigate how CVP influences students' interest, engagement, and collaboration in course content.

The Four Phase Interest Model served as the theoretical framework (Renninger & Hidi, 2016). Interest, as defined by the authors, is "a psychological state and a motivational disposition that exists in, or is the product of, the interaction of people's characteristics and their environment" (p. 8). Individuals may progress through these four phases if conditions are such that interest initiates and continues to develop (2016).

The sample for this study consisted of 285 students representing Grades 6, 7, and 8 at a Title 1 public middle school in the southeastern United States. Year 1 included five Grade 6 classes (n = 92). Year 2 included three Grade 6 classes (n = 54) and three Grade 7 classes (n = 90). Year 2 also included two Grade 7 classes (n = 26) that engaged in CVP the previous year (second experience with CVP). Year 3 included one class (n = 23) of Grades 7 and 8 students. Approval to conduct the study was provided by the school district and the middle school administration. University Institutional Review Board (IRB) policies regarding research involving minors were strictly followed.

The purpose for using the convergent parallel design in this study was to establish a complete understanding of student experiences regarding CVP as an activity for learning a variety of content topics across several grade levels. Study participants completed a 21-item questionnaire used to measure the influence of CVP on three dependent variables comprised of students' interest, engagement, and collaboration that were derived from the Four Phase Interest Model. Fourteen focus groups consisting of four-six students each were used to gather more detail regarding CVP in the learning environment: five were conducted in Year 1 and nine in Year 2. The following research questions served to guide this study.

How does CVP influence middle school students' interest in content?
How does CVP influence middle school students' meaningful engagement in learning?
How does CVP influence middle school students' collaboration with peers?
How does CVP influence middle school students' individual interest in video production?

All data from the paper-based questionnaires were input into Excel and then imported into IBM SPSS Statistics 27.0 for analysis. Raw scores were calculated as well as mean scores for perceived learning, interest, and engagement (see Table 1 – not included in Abstract). The transcribed data from 14 focus groups, including 69 students, were imported into NVivo 11.0 Pro for analysis. The Four Phase Model of Interest was used as the analytic framework (Renninger & Hidi, 2016) for the first phase of coding. The second phase of coding we aligned the four factors derived through the quantitative instrument to guide our analysis. We did not force passages into these categories and instead codes in this phase were allowed to emerge as well. The third phase of coding consisted of code reduction and refinement. Detailed verbatims and qualitative/quantitative alignment are provided in the formal manuscript (word limitations prevent the detail necessary here).

The CVP process transforms student interest, engagement, and collaboration in academic content. Student assessment of these three critical aspects of learning is transformed through this innovative and collaborative process described in this proposal. Research into the phenomenon of interest has found it plays a significant role in not only learning but also motivation, attention, memory, engagement, thinking, and deeper comprehension (Barron et al., 2014; Edelson & Josephs, 2004; Illeris, 2007; Pintrich & Schunk, 1996; Renninger, 2000, Renninger & Hidi, 2002). With so many cognitive benefits being attributed to interest, teachers need to incorporate strategies that will help ensure it is present during instruction. The current study suggests that a CVP activity can be used to establish Phase 3: emerging individual interest and Phase 4: well-developed individual interest. By implementing a CVP activity, teachers can create an environment that will help their students more effectively attend to the content, even if the students are not predisposed to finding the content interesting (Spires, Hervey, Morris, & Stelpflug, 2012).

Physical Education Teacher Education Preparation: Re-socializing Future Educators

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Subjective warrant, the occupational socialization of why physical education teachers choose to enter the field of physical education (Lortie, 1975) has for nearly five decades determined the preparation of physical education teacher education (PETE) students in preparation programs across the country. This important socialization begins with recruitment into physical education programs, continues into professional education, and ultimately ends with entry into the workforce (Lawson, 1983). PETE programs have very limited time to impact the teaching behaviors of students that have been influenced by a life-time of experiences, observations, assumptions, and perceptions about the profession of physical education. As a result, an intentional focus on how physical education students are recruited, prepared, and transitioned into quality physical education programs is essential. Through multiple teaching experiences, PETE majors are re-socialized with physical education methods that focus on: standards based lesson plans, ongoing assessment (formal and summative), individualized instruction, specific congruent feedback, fitness development, health literacy, and parent communication.

Students enrolled in the physical education teacher education program at the University of West Florida are re-socialized within four key phases of the curriculum:

- PET 4434 Youth Sport Pedagogy
- PET 4820 Adolescent Sport Pedagogy
- PET 4948 Physical Education and Coaching Field Experience with PK -12
- PET 4744 Student Teaching in Physical Education

Within these four phases of the curriculum, PETE students are subsequently measured on their growth and development in the following areas:

- Conducting Pre-Assessment using the Test of Gross Motor Development (TGMD; Ulrich, 2016);
- Skill and task presentation effectiveness evaluated by the Qualitative Measures of Teaching Performance Scale (QMTPS; Rink & Werner, 1989);
- Time-on-task percentage as measured by the Academic Learning Time-Physical Education (ALT-PE; Siedentop et al., 1979);
- Professional Practice UWF Dispositions and Danielson's Framework for Teaching (Danielson, 2007).

In this poster presentation, the authors will provide the course curriculum scope and sequence within each phase, student learning objectives, assessments, assignments, evaluation, and key areas of focus. In addition, components needing the most development will be identified as well as areas of most effectiveness will be highlighted.

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The Impact of Academic Podcasting on Pre-Service Teacher Motivation

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Advances in educational technologies influenced educators to rethink effective content delivery methods in alignment with student learning preferences (Bolliger, 2010). One emergent technological trend is academic podcasting (Alkhudair, 2020). The term podcasting has encompassed a broad definition based on its application characteristics. Early perceptions of podcasting define it as a convergence between radio-styled broadcasting, internet services, and the early success of Apple's iPod as a portable audio player (Shim et al., 2007). Today podcasting is defined as an asynchronous audio or video file available for download and accessible by subscription to a Real Simple Syndication (RSS) feed available on various electronic devices capable of online access (Bolliger et al., 2010).

Exploring educational podcasts for teacher certification preparation is urgent because passing the teacher certification exam is the gateway to the classroom and the solution to the statewide teacher shortage. This study aims to measure the impact of motivational academic podcasts on pre-service teacher motivation to prepare for the certification exam as measured by the CIS and IMMS in a teacher education program. A quantitative, quasi-experimental, non-equivalent control group design will be employed to determine the effects of motivational academic podcasts on pre-service teachers preparing for exams. Pre-service teachers enrolled in a teacher education program at a public university in the Southeastern United States will be assigned to two groups: experimental and control groups. The experimental group will receive five motivational podcasts via email. The control group will receive placebo reminder emails and will have equivalent access to the podcasts online, therefore not depriving educational opportunities. Data will be collected using the Course Inventory Survey (CIS) and the Instructional Materials Motivational Survey (IMMS) based on Keller's (1987) four components ARCS model: attention, relevance, confidence, and satisfaction. SPSS will be used to conduct an Analysis of Covariant (ANCOVA) to compare mean differences between groups.

Before 2006, limited research existed due to podcasting's infancy as a new media. However, from its infancy in 2006, podcasting usage increased from 22% to 60% by 2017 (Strickland et al., 2020), and its listener audience grew 88% between 2014 and 2017). Past trends in podcasting usage include creating medical communities of practice (Zumach & Portillo, 2020), encouraging self-directed learning (Kovtun, et al., 2019), and supporting language acquisition (Alkhudiar, 2020). Educational podcasting may be practical and benefit technologically savvy, self-directed students with long-term advantages, such as improved listening, oral, and technological skills (Kovtun et al., 2019). This poster presentation outlines the early stages and scope of the podcasting project, the background, theoretical framework used for content development, and timeline for next steps. In summary, this quantitative study is in progress and aims to examine the impact of motivational academic podcasts on pre-service teacher motivation.

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A Practical Study on Teaching Strategies of Teachers Toward the Mid-career Phase: Targeting Elementary School Physical Education Classes

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Introduction

Previous studies of teacher growth and development have shown that teachers grow from their first tenure to their proficient stage (Berliner, 1988; Yoshizaki, 1998; Kihara, 2004). In physical education class research, it has been revealed that beginning teachers working in elementary schools can accurately demonstrate monitoring strategies and commitment strategies based on their knowledge of physical education materials (Yamaguchi et al., 2012,2022). From this, it can be inferred that teachers who are entering the mid-career stage of their teaching careers are demonstrating higher-level teaching strategies (Incentive, Screening, Signaling, Locking in) in their physical education classes.

The main purpose of this study was to clarify the actual situation of elementary school teachers who are entering their mid-career, and to clarify the actual situation of their demonstration of teaching strategies.

Methodology and Procedures

Three male elementary school teachers in their seventh year of teaching were subjects of this study. The grades were 1st grade, 5th grade, and 6th grade. Each teacher was asked to teach one unit of physical education and was observed for three hours in the beginning, middle, and end of the class.

We attempted to analyze the data collected. The teaching activities were analyzed by referring to the the teaching strategy observation method (The ORRTSPE observational method: Observational Recording Record of Teaching Strategy in Physical Education) (Yamaguchi et al., 2012), and by extracting specific teaching skills that were demonstrated in order to examine the demonstration of teaching strategies.

※Teaching strategies and corresponding teaching skills

Incentive : Clarification of problem	Screening : Search for child's desire
Signaling : Adequate appeal corresponding to child's stumble	Lock in : Device of practice activity
Commitment : Interaction between teacher and child	Monitoring : Diagnosis and evaluation of child's movement

Findings and Conclusions

The results obtained are summarized as follows.

1) All three teachers were able to assess the children's movement (monitoring strategy) and provide appropriate feedback (commitment strategy).

2) In addition to 1), all three teachers tried to promote children's independent resolution of their goals (tasks) by devising practice activities and equipment (lock-in strategy) and by setting up observational learning (signaling strategy). In addition, two teachers clarified learning tasks based on the children's condition (incentive strategy).

3) The results of 1) and 2) were considered to function in combination as activities to enhance children's learning outcomes.

4) Differences were also observed in the teaching activities of the three teachers. This was thought to be due to the fact that the target grade levels and exercise materials were different in this practice.

5)It was confirmed that teachers who are moving toward mid-career are able to demonstrate new teaching strategies by expanding and deepening the practical knowledge they developed in their initial term.

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Practical Educational Approach to School Absenteeism Considering What Support Teachers Should Provide to Short-Term Absentee Students

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Introduction

Research on school absenteeism is at a major period of transition. In the past, absenteeism had been about refusal to go to school, typified by the determination to not attend school due to desire to avoid the school or teachers. However, absenteeism in recent years has become less about such clear determinations from students, and the focus now must be placed on the discomfort students feel about somehow being left out from the group, and on short-term absentee students who skip school for 30 days or less at a time, and are not included in statistical data.

Teachers should take two types of approaches to supporting students who display this pattern of absenteeism. The first is learning support triggered by their absence from school, while the second is support for the households of those children. Teachers must equip students with the ability to build personal relationships with these two types of support in mind.

Methodology and Procedures

Analyze the actual situation based on previous studies and non-attendance data presented by the Ministry of Education, Culture, Sports, Science and Technology.

Initial research on school absenteeism had a strong tendency to accept that the strong rejection of school in the refusal to attend school was the outward appearance of the phenomenon, while its causes were psychological. However, starting with research by Morita which began in the 1990s the term futoko came into regular use to describe the status itself of children who do not attend school, and since that time we have learned that school absenteeism is not only attributable to psychological causes. We now know that there are also children who struggle to continue attending school due to relationships with classmates and teachers, and due to delays in their learning.

This presetation aims to draw attention to those who have not reached the aforementioned 30-day threshold, the very gray area of those who are absent between 10 and 29 days in a year. There is an inclination among researchers to refer to these students as “minor league absentees.” Here we will call them short-term absentees.

Results

we analyze the data of first-year students who show a strong tendency towards absenteeism as they begin attending these junior high schools, in relation to the size of the elementary schools they came from. Doing so, the data shows that at junior high schools with high numbers of students who start struggling to attend school by the middle of their first month in April, short-term absentee students, in other words those who struggle to continue attending school, tend to be those who attended elementary schools that are different in size, particularly those from the smallest elementary schools.

Conclusion

Those children who cannot be in the classroom because they are poor at studying need to receive learning assistance, but you also need to remember that some children will dislike forced study environments.

Another aspect is how to support households.

For example, when addressing parents, a number of cases have been reported in which the school has expressed that the child is troubling them. Yet amongst these cases, there are also cases where children that the school feels troubled with are actually the ones who are the most troubled. Typical examples of this would include abusive and negligent household environments.

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