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Design and Development of Virtual Teaching Practicum Models: Embracing Change During COVID 19

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ABSTRACT

The unprecedented introduction of COVID-19 in Spring 2020 has created an academic earthquake in higher education. There was an instant halt to academic programs, student support, the learning environment, instructional methods, and delivery at all levels. Teacher educational programs were no exception. These programs consist of both coursework and a culminating practicum. There was an instant need to conceptualize a model that would assist with transitioning pre-service teachers from a traditional teaching practicum to a virtual teaching practicum. This model would ensure the demand was met from the Ministry of Education for qualified teachers despite the global pandemic. Hence, a team of researchers at the University of The Bahamas designed and developed two virtual teaching practicum models. They were the foundational platform

for transitioning pre-service teachers from traditional to virtual teaching practicums. Implications for theory and practice are also discussed.

Keywords: Teaching practicums, virtual teaching, virtual teaching practicums, The Bahamas

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Introduction

Teacher education has been met with challenges and demands of the complexities of twenty-first century teaching and learning (la Velle, 2020). A global pandemic further complicated the intricacies of this profession. In March 2020, the World Health Organization (WHO) announced the outbreak of the 2019 novel coronavirus (COVID-19) as a global pandemic (WHO, 2020). Medical experts argued that the "trajectory of this human disease is currently unpredictable and effective countermeasures" (O'Brien et al., 2020, p. 685) must be put in place to control the contagion of this potentially deadly disease. Teacher educators, in their delivery of teaching practices and internships, have "grappled with the myriad problems caused by this disruption" (Mutton, 2020, p. 439) of traditional face-to-face learning. Several researchers across the world, particularly during the onset of the global pandemic, have expressed the challenges faced trying to readjust, rethink, and re-envisage teaching practicums for pre-service teachers (Atkins & Danley, 2020; Choate et al., 2021; Delamarter & Ewart, 2020; Durand & Treviño, 2020; Gewartz, 2020).

Similarly, in The Bahamas, the School of Education (SEDUC) at the University of The Bahamas (UB) expressed its equal share of challenges during this time. The notion to continue the teaching practicum from a virtual perspective required a team of teacher educators to develop a strategic plan of action for the pre-service teachers. Exacerbated by the COVID-19 global pandemic and meeting its goal to produce effective pre-service teachers, the SEDUC described the plethora of intricate demands of the teaching practicum. To this end, the overarching objective of this paper was to introduce two models designed and developed by the SEDUC at the UB. This was the result of the unanticipated occurrence of the COVID-19 pandemic and the immediate transition of all educational programs and practicums from face-to-face to virtual.

This paper is critical not only to the educational setting in The Bahamas, but also globally. It is both a foundational platform and a

blueprint for transitioning teacher education practicums from traditional face-to-face to a blended or completely virtual model. This paper also addresses the gap in the literature as it relates to limited models that can be applied to a blended or completely virtual teaching practicum. Furthermore, it provides practical implications for teacher education programs.

Background and Problem

COVID-19 and the Educational System

The unprecedented introduction of COVID-19 has impacted the educational system globally. Factors such as course delivery, curriculum design and development, practicums, or internships were all either immediately halted or resulted in tertiary institutions creatively changing their delivery method to a virtual setting. A multiplicity of protocols was introduced to ensure the safety of faculty, staff, students, and by extension, their families. As a result, both parents and teachers had to become highly tolerant and understanding of the need for the protocol measures taken (MacDonald & Hill, 2021). Adjustments had to be made quickly to meet educational needs. This experience was overwhelming and unsustainable for parents, particularly those with workforce responsibilities. Teachers experienced the loss of community and responsiveness to social and educational cues that they normally received from their students through direct observation and incidental communication and conversations (MacDonald & Hill, 2021). Due to campus closures, students at all levels of the education system remained at home while continuing their education virtually. With limited access to resources, such as reliable internet service and appropriate technological devices, many students found it challenging to remain enrolled in programs of study.

Impact on Quality of Instruction and Curriculum

The immediate transition to online learning became a reality for educational institutions worldwide (Haslam, 2021). For the pre-service teachers who were able to continue attending university online, the traditional overall university experience was significantly changed as opportunities such as socialization of campus life, internships, and study abroad opportunities were missed. These all contribute to a well-rounded and employable graduate (Shoenfelt et al., 2013). A new skill set was necessary to participate and be successful in an online environment (Louise 2020). For many universities, the quality of instruction became a

major issue as face-to-face classes were suddenly transformed into online classes (Farmer & Ramsdale, 2016). As curriculum and assessment changed to match the online environment, student participation, motivation, and success were at risk (Haslam et al, 2021). For successful online learning, it became critical that student engagement be addressed (CzerKawski, 2016). In instances of the cancellation of practical courses and final practicums, the validity of online assessment became a major concern (Gikandi et al., 2011).

Teacher preparation in an online environment requires diverse communication skills (CzerKawski, 2016). Full participation in online courses involves reading, written content, and being able to manipulate and utilize video content. The submission of assignments and receiving feedback demands knowledge of online platforms (Tanyel & Griffin, 2014). The same skills are required by faculty who teach the online courses (Martin et al., 2019). However, in the traditional teacher preparation program, emphasis is placed on preparing pre-service teachers for the face-to-face classroom setting, although there are technology courses within the program. Likewise, cooperating teachers, teaching practicum supervisors, and moderators are all trained and accustomed to teaching practicum in the traditional classroom setting. Due to COVID-19, there was an immediate transition to a virtual learning platform and thus the need for pre-service teachers' practicums to be transitioned to a virtual environment. Despite a lack of resources, academic and institutional plans, and limited training, the decision was made to develop a virtual teacher training model. As a result, teachers would be equipped to teach in blended and completely virtual learning environments.

The Impact of COVID-19 on The Bahamas Educational System

In March 2020, normal operations changed in The Bahamas and worldwide due to the impact of COVID-19. Like other countries, The Bahamas was forced to shift gears and create a different normal. At the UB, the challenge was to prepare pre-service and in-service teachers for online teaching. While they had noteworthy technology skills, the teachers lacked the theoretical and conceptual foundational knowledge about online teaching and learning in K-12 schools.

As the national authority for teacher certification in The Bahamas, the SEDUC's incoming administration engaged in forward planning to maintain its ability to meet the national mandate. They were mindful of the Ministry of Education's (MOE) professional staffing needs for the

upcoming academic year that would be impacted by the annual turnover of teachers retiring from the system. The SEDUC realized that there may be a teacher shortage if they did not equip the pre-service teachers with the skills needed to participate in the final teaching practicum. Due to COVID-19, pre-service teachers would not be authorized to teach on campus face-to-face. Concerned about the ability to replenish the system with the new teachers for the upcoming hiring cycle, the school's administrative team developed a series of strategies to support its work. By implementing these strategies, the SEDUC would be able to meet the national hiring demands.

Faculty members felt this could work for the following reasons: (a) The MOE, the main stakeholder and partner, invited the SEDUC administrative team to participate in their professional development virtual conference in August 2020 (Campbell, 2020). At the conference, the team was provided with informational and material resources outlining MOE's expectations for online teaching nationally; (b) UB has had more than 15 years of utilizing learning management systems to offer courses using the asynchronous, blended, and hybrid approaches; (c) The integration of technology is a key component in the teacher education program at the UB. After 20 years of success and development in this area, education students have demonstrated proficiency in many aspects of the integration of technology in the classroom; (d) The faculty was committed to providing the needed training and support for teaching practice preparedness; and (e) Teacher education alumni were assembled to provide training and coaching support services. Furthermore, this would be necessary, given that there were no virtual teaching competency requirements embedded in the University's teacher preparation program (University of The Bahamas, 2020).

From attendance at the MOE's online learning professional development conference for trained teachers, the researchers surmised that final teaching practicum candidates needed to know the following: (a) What does the literature say about best theoretical and conceptual frameworks that are effective for the K-12 teaching and learning environments? (b) What best online education strategies have proven to be effective? (c) What accommodations are needed to ensure that students with special education needs are successful in the inclusive online classroom? (d) What support systems are needed to ensure consistent growth and confidence over time?

Guiding Theoretical and Conceptual Frameworks

As a result of COVID-19, pre-service and in-service teachers needed to be well-versed in online teaching and learning, technologies, and pedagogies. This called for the application of theoretical and conceptual frameworks that maximized success for all in the online teaching and learning environment. Bryans-Bongey & Graziano (2016) addressed issues of quality of educational experiences in the online environment and proposed the application of the collaborative constructivist learning theory and selected conceptual frameworks. On this premise, this theory and conceptual framework served as the underpinning for the design and development of the virtual teaching practicum model for the SEDUC. Collaboration here is described by Woolfolk (2017) as a philosophy about how to relate to others and how to learn to work, whereas constructivism emphasizes "the active role of the learner in building understanding and making sense of information" (Vaughn et al., 2013, p. 20). Vaughn and colleagues (2013) further expounded on the importance of students engaging collaboratively with schools and actively participating in the development of their own learning. Therefore, constructivism is defined as "the building or construction of new knowledge where learners use their senses to gather and organize information, then create new layers of knowledge by assimilating what is known" (Mahoney, 2004).

With the application of the constructivist approach, the focus elements of the online learning are psychosocial learning environment of an online course, and selection and implementation of instructional strategies. Walker and Fraser (2005) stated that the psychosocial learning environment in an online class is represented by the communication and social context established within the class and its members. The associated success factors mentioned are "connectedness and support through teacher and classmate relationships, students' expectations for their learning, student autonomy, relevant learning activities, and academic motivation" (Bryans-Bongey & Graziano, 2016, p. 90). To be a successful educator in the online learning environment, it is important that the six categories of the psychosocial learning environment be addressed to encourage and promote student success (Kosloski & Carver, 2016). These categories are teacher support, student interaction, personal relevance, authentic learning, active learning, and student autonomy (Walker & Fraser, 2005).

According to Davidson-Shivers et al, 2018, an effective online environment must include the following: (a) an orientation to learning that

includes an introduction and directions on how to navigate the learning system, (b) instruction on the content, (c) a measurement that learning has taken place, and (d) a summary and closing to enhance and enrich learning. Researchers have stated that the achievement of these elements is necessary to establish and maintain effective constructivist online learning. Bryans-Bongey & Graziano (2016) presented problem-based learning, guided instruction, simulations and games, case studies, and capstone experiences as multifaceted assignments. These can all be applied online to promote constructivism. The researchers further explained that while constructivist and traditional strategies are similar, there are significant differences in the implementation, delivery model, and technology applications. This calls for the adaptation of traditional strategies, the construction of personal meaning, mastering the art of applying best psychosocial learning approaches and strategies, and being intentional about promoting best practices in online constructivist learning approaches.

In keeping with this theory, Bryans-Bongey & Graziano (2016) promoted three conceptual frameworks as best practices models for facilitating online teaching and learning: (1) community of inquiry (COI); (2) technological pedagogical content knowledge (TPACK); and (3) substitution, augmentation, modification, and redefinition (SAMR).

Community Of Inquiry (COI) Model

The COI theoretical framework developed by Garrison (2011) is the premier framework for the online teaching environment promoting engagement and retention (Bryans-Bongey & Graziano, 2016). The COI framework takes its roots from the collaborative and constructivist theory of John Dewey. It identifies the connection between teacher presence, social presence, and cognitive presence. In the framework, these three come together to create an effective learning environment (Akyol & Garrison, 2011). (One such example in which they come together is the Learning Management System (LMS).

The teacher presence speaks to the role of the teacher in collecting content and designing a method of delivery suitable to the learner. The teacher is also responsible for communication and interaction within the environment. Elements of the teacher presence include “design and organization, facilitating discourse, and direct instruction in collaboration with students” (Bryans-Bongey et al., 2016, p.71). Examples of this are the creation of content videos, digital assessments, interactive PowerPoint

presentations, virtual office hours, Whatsapp group creation, and the uploading of all preceding content to an LMS.

The social presence speaks to the students' involvement in their own learning and whether the environment gives students a feeling of safety and nurturing that allows them to feel free to completely engage and interact in the course. It also gives them an anchor or sense of belonging in the abstract environment. Social presence can be created through "netiquette" rules that speak to accepted behavior in the environment, icebreakers for introductions, WhatsApp groups, discussion boards, and other forums for communication.

The cognitive presence speaks to the progression of the course or the layout of the elements within the environment. The student must first be stimulated which should lead to an exploration of the content to answer questions. Finally, the student should be directed to apply the information gathered to produce something. This can be seen through the logical progression or order of modules, sections, or units in an LMS. The module should begin with an introductory activity, a biography, or an anchor chart. It should be followed by content in various forms and typically closes with an assessment in the form of a quiz, product creation, final paper, or video (Bryans-Bongey et al., 2016, p.65).

Technological, Pedagogical and Content Knowledge (TPACK)

The TPACK conceptual framework developed by Mishra and Koehler (2006) has a specific focus on K-12 schools based upon the constructivist theory with application to best practices in technology integration. In its simplest form, TPACK (initially TPCK) is the comfortable marriage between technological, pedagogical, and content knowledge. For a teacher to successfully navigate the current teaching environment, the teacher must have a healthy knowledge of all three areas and a keen understanding of how they work together (Mishra and Koehler, 2007). It is paramount that the teacher understands how to flexibly integrate different technologies to deliver content that is correct and pedagogically sound. The "flexibility" is what allows the TPACK model to be conducive to inclusive education. Not only is the teacher versed in the limitations or diversity of the students, but also in the limitations and diversity of the technology. It is this knowledge that helps the teacher deliver the content successfully in an online environment. TPACK suggests the discontinuance of the one-size fits all technological solution. Further, the teacher must also be open to the dynamic nature of the

marriage and the constant evolution of the union. This knowledge can be gained through proper teacher education for pre-service teachers and through well composed professional development sessions for in-service teachers. For example, a physical education teacher and food and nutrition teacher may find the use of a video quiz tool helpful in getting students to mimic actions or practice particular movements like kicking a ball or folding whipped cream. However, an English language teacher may not get the same results using a video quiz tool to teach the students how to identify context clues.

Substitution Augmentation Modification and Re-definition (SAMR)

The SAMR conceptual framework developed by Puentedura (2014) is also based upon the constructivist theory. It focuses on restructuring and recreating face-to-face standard protocols for an online environment. In the SAMR framework, technology is integrated at four distinct levels using Bloom's taxonomy as a guide or standard for the progression of the integration.

- At the *substitution* level, the teacher simply uses a technological version of a physical task; for example, using canva.com to create a poster instead of chart paper, crayons, and pictures.
- At the *augmentation* level, the entire class gets involved in applying the technological tool to task completion. For example, in a face-to-face environment, jigsaw students would move from one expert group to the next physically. Using the SAMR model students can move to their groups whether face-to-face or online by simply joining various rooms in an online conferencing tool. Students can share screens, google information, and read articles together.
- At the *modification* level, the content remains the same; however, the students become more involved in the direction and exploration of the content. They use technology to help each other understand the content through collaborative efforts. For example, students can use shared documents, group calls, and other networking tools to collaborate on projects, study, perform experiments, and so on.
- At the *re-definition* level, the students can apply what they gained from the teacher and students in the class and start to expand into specific or detailed analysis of the content. They can use technology to synthesize and evaluate various aspects of the content of which they were not previously aware. At this level, the

students can also engage in distributing this knowledge to learners outside the classroom using various technological tools. For example, hospitality and tourism students can create a public website that shows tourists interested in visiting The Bahamas in an ecologically friendly and sustainable manner, explaining where to go and what to do to minimize their carbon footprint in The Bahamas. The website would serve as the product for the unit on sustainable tourism.

Bryans-Bongey & Graziano (2016) also emphasized quality accommodations for students with special learning needs in the online classroom and the importance of building effective collaborative parent-teacher networks. Universal design for learning principles, also related to assistive and adaptive technologies, have equal importance and consideration when planning online instruction. The authors also highlighted best planning and teaching strategies based on the constructivist approach to teaching and learning. This involved a combination of project-based activities that foster inquiry, problem-solving, collaboration, and feedback that extends beyond teachers.

Design and Development of a Virtual Training Model for The School of Education, University of The Bahamas

In this training model, the collaborative-constructivist learning theory as described by Bryans-Bongey & Graziano (2016) was endorsed. In keeping with this theory, the training plan includes advanced knowledge and skills about the community of inquiry (COl); technological pedagogical content knowledge (TPACK); and substitution, augmentation, modification, and redefinition (SAMR) models.

The researchers devised a training plan to address the following 10 focus areas: (a) theoretical and conceptual knowledge acquisition; (b) lesson and forecast planning; (c) mastery of technical tools used by the MOE virtual teams; (d) team-work competencies; (e) formation and utilization of a UB alumnus digital support team; (f) copyright laws; (g) competencies navigating the MOE's learning management system; (h) a teaching practice assessment and evaluation electronic system; (i) creation of a digital teaching practice portfolio; and (j) a changed mindset.

The researchers designed two professional development programs:

- On-Line Teaching in K-12: From Theory to Practice Professional Development Series—Fall 2020.

- Virtual Teaching Practice Three Phase Transition Model Professional Development Series—Spring 2021.

The two robust, accelerated models were based on theoretical and conceptual foundations reported by Bryans-Bongey and Graziano (2016). Candidates would also be required to apply theoretical knowledge and practical skills such as integrating technology, objective writing, and classroom management. Additionally, they would have access to training about various learning management systems and technology tools specific to online teaching and learning. The knowledge checks planned consisted of written examinations, demonstrations, team presentations, and peer and faculty evaluations. Candidates would be required to work in teams to present differentiated lesson plans to accommodate learners in the online environment, which included classroom management and parental involvement plans. The training was planned for a three-month period for each cohort. Additional orientation and training were also scheduled for teaching practice moderators and teacher education faculty. The purpose of the sessions was to train moderators how to implement the newly developed diagnostic and assessment instruments, to provide an overview of the training program, and to make training resources available. Teacher education faculty, staff throughout the university, and MOE's teachers and officers agreed to conduct the training.

Training Structure for Cohort 1. **On-Line Teaching in K-12: From Theory to Practice Professional Development Series—Fall 2020**

The training sessions consisted of five integrated strands: (1) Teaching Practice Orientation With a Focus on Teamwork Roles and Responsibilities, (2) The Virtual Training Model—Synchronous (Face-to-Face) and Asynchronous Online Learning, (3) Theoretical and Conceptual Framework, (4) Technology Orientation and Training, and (5) Upgrading Professional Practices. Reflection sessions were also planned throughout the teaching practicum exercise. Therefore, after the completion of these sessions, candidates would participate in unstructured small group and individualized coaching sessions with content teaching practicum supervisors and various teacher practicum alumni as needed. These reflection sessions were needed to support the pre-service teachers throughout the field component. The training for both cohorts is illustrated in Table 1.

Integrated Strand One: Teaching Practice Orientation With a Focus on Teamwork Roles and Responsibilities

The orientation plans included the professional development overview and purpose, an overview of online teaching readiness, virtual school attachment protocols and procedures, responsibilities for units, digitized lesson plans, detailed lesson notes and handouts, teaching practice e-portfolio, available student support services, and an overview of the MOE's team teaching focus for online teaching for Fall Semester 2020.

To develop the mindset for this focus, information relevant to the team-teaching model was prepared to share with teaching practicum candidates: Team Teaching Dynamics—An Overview, Models (K-6 and Secondary Schools), Benefits of Team-Teaching: Roles and Responsibilities, Teaching and the Learning Process, Timetabling, Technology Tools Skills Acquisition & Sharing, and Digital Learning Kits—Products and Development. The team-teaching roles that teaching practicum students would acquire include live facilitator, program designer, researcher, chat facilitator, assessor, question and answer facilitator, serving on an editing team for lesson planning, and PowerPoint/content video designer/creator. According to the information shared during MOE's conference held in August 2020, the team-teaching structure comprised four areas: team planning, content development, marking and grading, and virtual office hours. The orientation session was important to give candidates a glimpse into the overall requirements.

Table 1

Training Structure for Cohort 1 and 2. On-Line Teaching in K-12: From Theory to Practice Professional Development Series—Fall 2020 – Spring 2021. Five Integrated Strands

Integrated Strands				
Strand One **Teaching Practice Orientation With a Focus on Teamwork**	**Strand Two** **The Virtual Training Model—Synchron**	**Strand Three** **Theoretical and Conceptual Framewor**	**Strand Four** **Technology Upgrading & Training**	**Strand Five** **Upgrading Professional Practices — Enhancing Quality**

Roles and Responsibilities	**ous (Face-to-Face) and Asynchronous Online Learning**	**k – 13 Master Classes**		**Assurance Measures**
Professional development overview and purpose, An overview of online teaching readiness, Virtual school attachment protocols and procedures, Responsibilities for units, digitized lesson plans, detailed lesson notes and handouts, Teaching practice e-portfolio,	Application of synchronous/live (teaching face-to-face online via a meeting platform) Blended learning and face-to-face (on campus) (Added for Cohort 2) Asynchronous online models for both K-6 and secondary grades Creation of digital learning materials	Overview The Online Teacher Online Constructivism and Technology Integration. Online Student Online Special Education Teachers TRACK Standards for Effective Technology Integration Open and Free Educational Resources	LMS and meeting platforms, (Microsoft Teams, Google Classroom, Zoom) Assessment & worksheets (Live Worksheets, Quizzizz, Videos, Kahoot, Office 365, Google Slides) Lesson Plans/ Forecasts (One Note, Forms)	Lesson planning and evaluation Teaching practicum evaluation Acquisition of knowledge and practices of current online trends Office 365 OneNote application electronic portfolio On the lesson plans, emphasis on differentiated

Available student support services,	Engaging & interactive approaches Demonstration lessons	for K-12 Copyright		strategies and accommodations for students with special needs

Strand One **Teaching Practice Orientation With a Focus on Teamwork Roles and Responsibilities**	**Strand Two** **The Virtual Training Model—Synchronous (Face-to-Face) and Asynchronous Online Learning**	**Strand Three** **Theoretical and Conceptual Framework – 13 Master Classes**	**Strand Four** **Technology Upgrading & Training**	**Strand Five** **Upgrading Professional Practices — Enhancing Quality Assurance Measures**
Team teaching dynamics Overview of the MOE's team teaching focus for online teaching for Fall Semester 2020		Virtual School-Home Communications (Bryans-Bongey & Graziano, 2016).	Create Videos (PowerPoint, Loom, i-Movie, YouTube , Windows Movie Maker, Flipgrid, Class Dojo)	Fully automated digitized evaluation instrument for all instructional settings/models

		Interactivity for managing the lesson (PowerPoint Presentation, Virtual field trips, Discovery scavenger hunt) Parent conferencing and group dynamics (Zoom, WhatsApp, The use of TedEd, Snagit, and Adobe Spark for content lesson presentations)

Integrated Strand Two: The Virtual Training Model—Synchronous (Face-to-Face) and Asynchronous Online Learning

The MOE required all teachers throughout New Providence, The Bahamas, to apply the synchronous/live (teaching face-to-face online via a meeting platform) and asynchronous online models for both K-6 and secondary grades. Demonstration sessions were planned for candidates to become familiar with strategies to facilitate the teaching of interactive, differentiated lessons in the virtual environment. Candidates were also scheduled to participate in asynchronous demonstration lessons.

In keeping with MOE's and the SEDUC's requirements for online teaching, arrangements were made for candidates to create digital learning kits for each lesson to be taught. The digital kits were to include content

videos, interactive PowerPoint presentations, differentiated virtual activities including digital worksheets, content specific games, links to online activities, digitized student and teacher notes, and detailed lesson plans.

Familiarization training in the use of technology approaches to promote interactivity and engagement in lessons during virtual teaching within and outside the conferencing tool was arranged. These included but were not limited to the following: reactions, chat room, whiteboard/annotation, remote control/screen sharing, polling, breakout rooms, interactive PowerPoint, poll everywhere, Edpuzzles and challenge/competitive modes of quizzizz, quizlet, kahoots, padlet, and Educaplay.

Integrated Strand Three: Theoretical and Conceptual Framework.

The conceptual and theoretical framework focus consisted of thirteen master classes. The topics planned were (1) Overview of Theoretical Frameworks; (2) The Online Teacher: Skills & Qualities to be Successful; (3) Online Constructivism: Frameworks and Standards for Effective Technology Integration; (4) Online Student Teaching to Implementation; (5) Helping Special Education Teachers Transition to K-12 Online Learning; (6) TRACK As Mediated Practice; (7) Capturing the Online Learner: Frameworks and Standards for Effective Technology Integration; (8) Open and Free Educational Resources for K-12 Online and Face-to-Face Classrooms/ Copyright; (9) Flipped Learning—Making the Connections and Finding the Balance; (10) Teacher-Centered Online Content; (11) Student-Centered Digital Learning Through Project-Based Learning; (12) Tools and Strategies for Assessment in an Online Environment; and (13) Virtual School-Home Communications (Bryans-Bongey & Graziano, 2016).

Integrated Strand Four: Technology Upgrading & Training

The purpose of this integrated strand was to provide candidates with the opportunity to upgrade their skills to align with technology tools used by MOE's teachers and virtual school leaders. Throughout the professional development training, participants would receive hands-on training with the following:

- Learning management systems and meeting platforms (One-On-One Educational Services Limited, Microsoft Teams, Google Classroom, Zoom)

- Assessment & worksheets (Live Worksheets, Quizzizz, Videos, Kahoot, Office 365, Google Slides)
- Lesson plans/Forecasts (One Note, Forms)
- Lesson content video creation (PowerPoint, Loom, i-Movie, YouTube videos, Windows Movie Maker, Flipgrid, Class Dojo)
- Interactivity for managing the lesson (PowerPoint Presentation, Virtual field trips, Discovery scavenger hunt, Bit Mogi)
- Parent conferencing and group dynamics (Zoom, WhatsApp, Canva, Flipping Book Publisher

Candidates would also be required to incorporate the use of TedEd, Snagit, and Adobe Spark to create content lesson presentations.

Integrated Strand Five: Upgrading Professional Practices—Enhancing Quality Assurance Measures

The researchers selected quality assurance measures with a view to upgrading the SEDUC's professional practices in the areas of lesson planning and evaluation, teaching practicum evaluation, and the acquisition of knowledge and practices of current online trends. Normally, teaching practicum students use hard-copy binders for teaching practicum documentation. COVID-19 provided an opportunity for the SEDUC to create and transition to an electronic portfolio utilizing the Office 365 OneNote application. The e-portfolio has been utilized by the SEDUC faculty for field experience documentation since 2014. However, to facilitate this enhanced practicum approach, the SEDUC's technology coordinator and researchers created a template that incorporated online teaching and learning standards for the first time. Lesson plans required emphasis on selecting and documenting differentiated strategies for all learners. Additionally, candidates would be required to indicate accommodations for students with special needs in alignment with stated behaviors. They would also be required to provide a seven-point evaluation for lessons taught. In addition, they would be assessed by supervisors utilizing the newly designed and fully automated evaluation instrument for all teaching models. This initiative would also mark the premier of an integrated digitized instrument, envisioned by the SEDUC's new administration team.

Culminating Project: Creating Teams—Applying the Principles, Presentations, and Evaluations

At the end of the professional development training, candidates were required to participate in team presentations according to major content areas and were evaluated by peers and SEDUC's faculty (see Figure 1). Afterwards, participants were scheduled for virtual teaching practicum for nine weeks. During this period, participants were encouraged to share their teaching experiences. They were asked to provide information about successes, challenges, and needs pertaining to virtual teaching practice. Moreover, they shared recommendations for improvements in the areas of teaching practice supervision and administration.

Training Structure for Cohort 2. Virtual Teaching Practice Three Phase Transition Model Professional Development Series—Spring 2021

During the Spring Semester 2021, the MOE announced that schools in New Providence, The Bahamas, would remain online and continue to utilize meeting platforms for teaching synchronous face-to-face lessons supported by asynchronous teaching. MOE also stated that schools would transition to a blended model with the expectation of going fully face-to-face by the end of the academic year. In response to the MOE's plan, the researchers revised the previous professional development virtual teaching practicum (VTP) training model. The new focus of the training was a *Virtual Teaching Practice Three-Phase Transition Model (VTP-TPTM)* approach. This meant that participants were required to transition from teaching fully online to blended learning and, finally, fully in person face-to-face. Overall, the training consisted of the five integrated strands indicated for the previous cohort, with the exception of strand two. This strand is renamed the Virtual Training — Three-Phase Transition Model: (1) Synchronous (Face-to-Face) and Asynchronous/Online (2) Blended Learning and (3) Fully in Person Face-to-Face Learning. The model is revised in keeping with the MOE's agenda for the gradual transition to face-to-face teaching (see Table 2).

Table 2

Theoretical and Conceptual Framework–13 Master Classes For Virtual Teaching Practice Developed for The School of Education Nassau, Bahamas

Class No.	Class Title
*1	Overview of Theoretical Frameworks.

*2	The Online Teacher: Skills & Qualities to be Successful.
3	Online Constructivism: Frameworks and Standards for Effective Technology Integration;
*4	Online Student Teaching to Implementation;
5	Helping Special Education Teachers Transition to K-12 Online Learning;
6	TRACK As Mediated Practice;
*7	Capturing the Online Learner: Frameworks and Standards for Effective Technology Integration;
*8	Open and Free Educational Resources for K-12 Online and Face-to-Face Classrooms/Copyright;
*9	Flipped Learning—Making the Connections and Finding the Balance;
10	Teacher-Centered Online Content;
11	Student-Centered Digital Learning Through Project-Based Learning;
*12	Tools and Strategies for Assessment in an Online Environment;
*13	Virtual School-Home Communications (Bryans-Bongey & Graziano, 2016).

Note: Master Classes for Cohort I Fall 2020 (13)
*Master Classes for Cohort II Spring 2021 (8)
(Bryans-Bongey & Graziano, 2016)

The MOE required all teachers during this period to apply the synchronous/live (teaching face-to-face online via a meeting platform) and asynchronous model as well as the blended online approaches for K-6 and secondary grades. Demonstration sessions were planned to familiarize candidates with strategies to facilitate the various transitional phases.

Integrated Strand Three: Theoretical and Conceptual Framework for Cohort II.

The focus of the conceptual and theoretical framework comprises eight of the thirteen master classes listed for the first cohort. Asynchronous & synchronous online approaches to blended and face-to-face modalities were added as a major focus for Cohort II (see Table 2).

Discussion

The purpose of both models was to prepare pre-service teachers for the demands of virtual teaching as it would be implemented in New Providence, Bahamas. In the first model, candidates were equipped with the necessary skills and tools for teaching fully online via a meeting platform. The second model focused not only on online teaching but also blended and face to face instruction. The adaptation to the second model was needed as the MOE had announced its intent to transition from virtual to blended, and eventually face to face on campus teaching. Students had not been prepared in this way before; therefore, it was important that the expectations were clear, and the required tools were available. Researchers and practitioners are encouraged to communicate with their MOE, school district, or local educational authority to obtain a clearer understanding of what the expectations are for all constituents. Once this criterion is satisfied, then an appropriate model can be designed and implemented. As a result of these models, preservice teachers were better prepared to engage learners in the online environment. They were better prepared to differentiate instruction and assess students in the virtual setting.

These models are advantageous in that they added value to teacher preparation at the UB and significantly advanced the MOE's virtual school agenda. With hurricanes, teacher shortages, sickness, a late start of the school year due to incomplete school repairs, and other events that could prevent face-to-face instruction, the models provide a vehicle by which preservice teachers can be prepared to meet the demands of their current realities. Furthermore, they could decrease the loss of instructional time.

Implications for Theory and Practice

Implication for Theory

The design and development of these models contribute greatly to the gap literature as it relates to pre-service teachers and virtual teaching practicums. Although originally designed and developed as a result of COVID-19, they serve as a framework that can be applied not only because of natural catastrophes but due to technological advances within higher education at a global level. This model also serves as a digital footprint for other teacher education programs that are uncertain or unfamiliar with how to transition their traditional face-to-face teaching practicums to virtual teaching options. It provides guidelines, best practices, and strategies—all grounded in theory—to assist with the transition.

It is proposed that future research will explore the lived experiences of pre-service teachers and other stakeholders involved in these virtual teaching practicum models.

Implications for Practice

The design and development of these virtual teaching practicum models have myriad implications at distinct levels within the educational system. However, emphasis will be placed on (a) The MOE, (b) Teacher Education Programs, and (c) The Pre-service Teacher.

The Ministry of Education

The design and development of the virtual training models have implications for practice at the MOE level. Consideration should be given to continuous professional development of cooperating teachers and supervisors in online teaching and learning. This would improve their role as virtual teaching practicum supervisors.

Curriculum update is essential to ensure that the theories, practices, and procedures are aligned and reflect best practices for teaching in virtual environments. Consideration should be given to virtual components for the successful implementation of online teaching and learning.

Adequate online resources and electronic devices are essential for effective and successful virtual teaching environments. In this regard, it is critical that provisions are made for the educational system to be equipped with electronic devices, free access to online learning resources, electronic hot spots (provision for students and educators who do not have WIFI within their homes), and mobile schools (with WIFI access). This will enable buses to be set up in locations throughout the islands to ensure that students with no electricity or WIFI can still have access to virtual learning. Community parks are viable options to provide access. Additionally, the MOE should work in conjunction with schools and the SEDUC to ensure that pre-service teachers have early school placement and LMS training for teaching practicums. These are significant components to their success.

To ensure that the educational system is on the cutting edge, it is very important that electronic resources be upgraded to meet the demand of virtual teaching and learning. Consideration should also be given to professional procedures and practices to ensure their appropriateness for the virtual environment.

Teacher Education Program

In the teacher education program, there are practical implications that should be considered. Faculty with responsibility for preparing preservice teachers for their practicums (i.e., professional seminars and methodology teachers and teaching practicum supervisors), should engage in continuous professional development in online teaching and learning (refer to training models on Table 2).

With the inclusion and promotion of a virtual learning environment, it is critical that there be curriculum updates as it relates to teacher education. The overarching objective is to ensure that the teacher education curriculum is one that includes best practices in online teaching and learning in K-12 schools. Therefore, the principles and practices of the theoretical and conceptual framework of the virtual training model need to be encapsulated in a training program for teacher educators and other stakeholders

The Pre-service Teacher

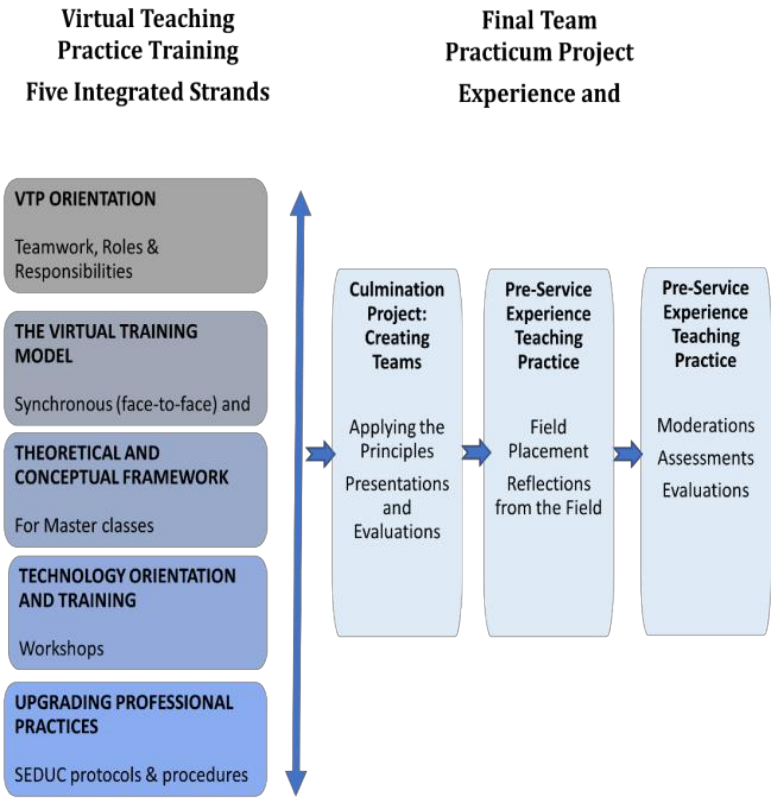
While it is critical for students to be successful in their teacher education program, it is equally important that pre-service teachers be self-directed learners able to take responsibility for their learning and development in a virtual setting. Pre-service teachers need to be trained to manage the demands of the online learning environment. Training is needed to build confidence in the delivery of instruction. Therefore, it is important that prior to practicum approval they demonstrate online teaching knowledge and skills acquisition and preparedness for online teaching and learning (Gurley, 2018) They should be empowered with adequate pedagogical capabilities, and appropriate emotional and social networks designed to enhance teaching success (Teng, 2017). Pre-service teachers are skilled in using various technological devices to enhance integration in instruction. However, a key component of a high-quality teacher education program is requiring that pre-service teachers acquire an experienced and knowledgeable mentor teacher (Ronfeldt et al., 2018). This allows theory to be linked to practice. Therefore, further consideration should be given for preservice teachers to be paired with online teacher mentors and coaches to improve their pedagogical knowledge and skills.

Conclusion

There has been much debate in higher education regarding online teaching and learning. However, due to COVID-19, higher education was mandated to transition to a virtual teaching and learning environment. On this premise, teacher education programs that are equipped with both a theoretical and culminating practicum experience were required to transition immediately to a virtual learning environment. Faculty within the SEDUC at the UB were inspired to develop virtual training models that addressed the needs of pre-service practicum in both a completely online and a blended learning environment. This model, grounded in theoretical and conceptual frameworks, served as a tool for transitioning pre-service teachers, from the traditional teaching practicum to a virtual teaching model. Due to the archipelagic nature of The Bahamas, educational policy makers would benefit from embracing technological advances to enhance access to quality education for all. Therefore, it is imperative that the partnership between the SEDUC and MOE be strengthened regarding online teaching and learning to accommodate the training of in-service and pre-service teachers in advancing national education goals.

Figure 1

A Model of Virtual Teaching



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