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Development and Viability of an Alternative Virtual-Contextual Model in Teacher Training: Continuity Initiative in Laid-back Settings

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ABSTRACT

Initiatives to ensure the continuity of training programs within the COVID-19 environment had been regarded emergent and discretionary particularly in laid-back settings. The training initiative to improve the professional practice of 35 public primary school teachers in Sumba, one of the remotest islands of Nusa Tenggara, Indonesia fitted this mold. The call for a responsive training that grounds teachers' teaching and the context of their professional training remained a vantage point for systemic exploration. Qualitatively designed, this study explored the practicality of combining the virtual and the conventional teacher training mode. It hinged on a 1-year training period, of which five months charted the implementation of the face-to-face or conventional mode and the next seven months spanned the implementation of both virtual and conventional training modes. Guided by the systemic analysis approach, data collection emerged into two timelines. Phase 1 data collection framed the conceptualization of the virtual-contextual model and Phase 2 data collection grounded the operational features of the alternative-virtual framework. For validity triangulation, three external master trainers of trainers (MTOT) scrutinized the frameworks and a school site mentor, the overseer of the training program. Likewise, data from related trial studies formed integral part in the revisions of the training models. Formative and summative trainee artifacts such as lesson plans, teaching and learning materials, reflection notes, self- and peer reviews as well as interview typescripts were pooled, thematically coded, and inductively analyzed. Moreover, demonstration teaching tasks were assessed and were used to explain teacher practice orientations and improved changes. The findings yielded four (4) combined delivery strategies featuring the virtual-contextual model: (1) virtual synchronous training and asynchronous training; (2) teacher and peer interactive activities and formative support from the school-based mentor; (3) online and direct feedback from virtual trainers and school-based mentor; and (4) workplace formative-summative assessment and intermittent incentives with parallel extrinsic reinforcement. In conclusion, the combined outcomes of these four strategies propelled a layered yet mutable or alterable teaching attributes in the aspects of pedagogical content knowledge (PCK), namely: curriculum knowledge, learning instruction, understanding how students learn, and specific content mastery.

Key words: alternative Teacher Training, Virtual-Contextual Approach, New Normal Era, Synchronous-Asynchronous, Pedagogical Content Knowledge, Training Delivery Strategies

INTRODUCTION

The emergence of multi-level delivery practices has gained continuous concern and scrutiny. To date, changing strategies which range from non-digital to digital modes of learning and teaching delivery have rendered much confusion and complication, leaving teachers particularly in laid back contexts extremely vulnerable. It has to be recalled that education is central to sustainable development as it constitutes the pathway to a life of dignity for all. Corollary to this, improving access and availability of basic learning needs for all has remained the priority thrust of the global development framework (Chinapah et al., 2013; UNESCO, 2015) for which quality teaching is viewed as a multi-dimensional and evolving concept that must be equitably rendered to teachers and other stakeholders (UNESCO, 2015). In setting the perspective of teaching quality, teacher development providers have recognized context-driven mechanisms to leverage teacher training outcomes and operationally have sanctioned the 'open-service' oriented platform for potential support providers. Broadly, teacher development training encompasses all types of teacher learning designed to bolster professional knowledge, skills, and attitudes in order for

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teachers to facilitate student learning (Craft, 2000; Guskey, 2000), heighten inclusive and responsive teaching practices (Amzat & Valdez, 2017), and instigate the management of continuous support assistance and other forms of development opportunities (Valdez & Hashim, 2020).

In terms of effectiveness, Creemers and Antoniou (2009) reported that teacher training contributed minimal intellectual gain and that the display of effective teaching to professional development opportunities was viewed as fragmented, misaligned with curriculum parameters, and insubstantial to respond to teachers' needs (Borko, 2004). Likewise, a handful of teacher training and development studies elaborated on the strengths and weakness of various paradigms formed from the combination of features and elements to address different groups of teachers. Although experts stood critical over eclectic approaches, the development of a dynamic approach supported by educational effectiveness research (EER), nevertheless, grounds the potential formation of progressive approaches in teacher training and professional development. These accounts are suggestive of the following justifications for adoption: (1) it merges research findings and improvement initiatives in education and teacher competences; (2) it reinforces the link between teacher factors and teacher classroom behavior; (3) it recognizes specific teacher improvement needs, denoting that teacher training contents do vary; (4) it demands teacher's active participation and engagement in professional development and full knowledge of its impact on student learning; (5) it expounds the importance of varied or differentiated education effectiveness to address contextual issues and the integration of different theoretical emphases of effectiveness; (6) it ushers coordination and collaboration opportunities among researchers and providers of the development program; this is done in order to facilitate teacher support for teaching practice and transfer; (7) it engenders monitoring and formative assessments in improving teacher plans and actions; and (8) it ensures the conduct of summative assessment to identify training outcomes and how these outcomes impact on students (Creemers et al., 2013). In sum, these rationalizations underpin a collective intention that teacher training approaches evolve from a broadened scope of professional development. Relatedly, training approaches could be seen as a consequence of teaching differentiation, engagement, autonomy, and assessment and that empirical support affirms the provision for improved teaching practice cum training.

From the standpoint of training delivery, teacher training approaches such as teacher effectiveness research (Brophy & Good, 1986), holistic or reflective practice (Golby & Viant, 2007), and dynamic -integrated approach (Kyriakides et al., 2009) among others have been existent and operational in various contexts using the face-to-face delivery mode. In the new normal era when emergency remote teaching (ERT) and work-from-home (WFH) permeated formal schools, teaching, and learning typical of a training program demanded crisis-responsive and inclusive delivery strategies. Thus, training providers have been compelled to initiate alternative ways to implement and sustain their activities using current resources and capabilities. While thoughtful initiatives configured during unprecedented times signal the robustness of media and technology in their multi-modal forms, the viability of these initiatives follow differentiation and variation of readiness. Moreover, the adoption of new technologies may give rise to extreme outcomes: efficient and competitive results (Skoumpopoulou et al., 2018) or systemic barriers that hamper technological adoption (Gedik et al., 2013). Specifically, in laid-back school settings, teacher training is expectedly strained with enormous digital literacy gaps and resource inadequacies. At base, the sudden shift from the conventional training mode (face-to-face) to the virtual training mode (online/offline) thus underpins a plethora of mishaps embedded in the unwieldy selection and utilization of a breadth of media and technology interventions. Within this transition, the mandate to help teachers adapt and adopt to new delivery mode settings mounted immediate and critical changes. As the trend toward online delivery pervades all school levels, on-going teacher trainings require a profound search of a recontextualized alternative delivery platform that is practical, inclusive, and sustainable for schools at the bottom of the pyramid with reference to their agro-ecological, geographical, socio-economic, technological, and cultural diversities (Dube, 2020; Luschei & Zubaidah, 2012).

The importance of teacher development for improving teaching quality has been amplified in developing and underdeveloped countries. Schools in the rural areas experience difficulties in recruiting and retaining new teachers, not only as a result of the highly qualified teacher requirements, but also because of the teaching conditions unique to the rural schools (Monk, 2007). In the Asian Region, Indonesia prides its 17,000 islands, all of which demand diverse needs and priorities. Like its Asian counterparts, Indonesia's small islands prove to be the most marginalized districts (Perpres RI No. 63, 2020). Such status draws close attention among educationists and philanthropists to take part in open-service oriented programs that are designed to sustain basic learning challenges in numeracy, reading and science (Ministry of Education and Culture, 2016). Results of a follow-up study confirmed that majority of the primary schools in these areas revealed a shortage and unequal teacher distribution, mediocre teacher's qualification and competencies, and ineffective learning processes (INOVASI, 2019). The continuity and delivery of teacher training programs in aid of the widening current and pandemic-driven stop gaps approximates the conceptualization of alternative delivery platforms.

This study aimed to explore the development (structure and implementation) and viability of an alternative teacher training with the combined use of virtual and contextual delivery strategies. In the same purview, the training components - contents, processes and outcomes had been progressively assessed to determine potential stop gaps and implementation incompatibilities. This model targets training continuity concerns in local and specific contexts where a 'change system' seats on a skewed status. Findings of this study contribute to tightening initiatives and approaches in teacher professional development, rendering training providers' and teachers' unwavering resilience and transversal skills in unpredictable and uncertain environments.

METHOD AND PROCEDURE

The qualitative design was employed in order to achieve a thorough examination of suitable combinations of training inputs and processes descriptive of a responsive teacher training program. The study tracked the last seven-month implementation of 1-year teacher training program in a two-tiered timeline: (Phase 1) Onset and during COVID-19 forwarded inputs for the conceptualization of the virtual-contextual model, and (Phase 2) COVID-19 progressive social protocol compliant gave shape to the operational features of the alternative virtual-contextual framework. From this vantage view, the combined training model elucidated the virtual-contextual training outcomes and practices, posing critical and continuous support from trainer-providers. The rationale of this research relied on the changing context of teacher training and the responsiveness of teachers toward professional development (Amzat & Valdez, 2017). Simply, the pandemic outbreak mandated the schools to remain temporarily closed, and instructional delivery (teaching and learning) was practically relegated as free-willy, informal, and non-formal as alternative delivery options. On top of this, the on-going teacher development programme was put at bay. These circumstances gave rise to the researchers' initiative to leverage the training structure (Phase 1) using the systemic approach (Figure 1) which highlighted the iterative definition of the framework, the identification of the recurrences and circular causalities, and the modeling of relations/social exchanges (Rolando, 2015).

Initially the systemic approach employed a need survey (Stage 1), aimed to gauge the respondents' readiness to distance training, support infrastructure, and technological practice. Respondents included all 35 teachers from three primary schools. The survey was distributed to the respondents through WhatsApp group for one week. Answers to questions related to the specification of gadget/s owned, availability of internet access on certain areas, total volume, and budget allocation of data internet per month, and distance/virtual technology awareness were collected. Correspondingly, survey results were used to identify the suitable e-gadgets/equipment and support mechanisms for a virtual/distance training within the local context. Two models of virtual training were trialed (Stage 2). The first model was using asynchronous model with WhatsApp group as learning management system. The teachers downloaded and uploaded work-based tasks given by virtual trainers and the communication occurred only by text chatting mode. The second model was introduced using synchronous and asynchronous delivery with WhatsApp group as the learning management system. The most charted practices during this stage were as follows: (1) the teachers and virtual trainers scheduled meetings and lectures utilized voice note and picture uploads; (2) the virtual trainer sent work-based tasks and followed up the respondents' submission of their output on schedule; and (3) the virtual trainer sent feedback on teachers' output through voice note. The third and final trial was initiated through a combination of synchronous delivery by video conferencing and asynchronous delivery with WhatsApp group as learning management system. To empower the teachers' implementation practice, the asynchronous training model adopted the collaboration approach where on-site and off-source/off-line trainers' support were employed. Scaffolding through online coaching and continuous assessment through feedbacking were similarly observed by each of the virtual trainers.

From the report forwarded by Moe and Rajendran (2020) who stated that online learning pool had changed from 30% pre-coronavirus to almost 90% on a global scale, Stage 3 where the two models were pursued and monitored for two (2) successive months signaled acceptable practices. Again, this stage scaled to examine the suitable combination/s of models & processes in the delivery and content training between a conventional teaching program and a distance/virtual driven teaching training programme. In these modeling trials, three (3) drawbacks were identified: (1) interactive delivery process, (2) consistency of platform used,

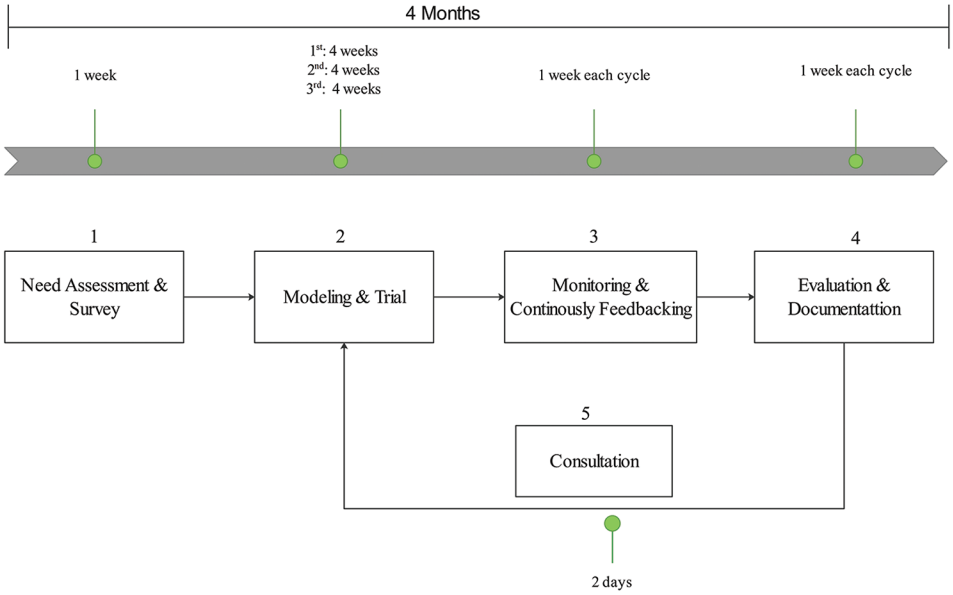

Figure 1. The systemic analysis stage model

and (3) feedback modeling. Simply, Stage 3 results provided the base to restructure the previous model; this time, it was supported by evaluation and documentation of teachers' progress, artifacts, and response feedback (Stage 4) with the primary of securing emergent recommendations for delivery improvement.

To refine the training program delivery in reference to results derived in Stages 1 to 4, a consultation meeting (Stage 5) of all three groups of training stakeholders: virtual trainers, on-site mentor/s and external experts (MTOT) in teacher development and empowerment was held. Recommendations were pooled and embedded in the conceptualization of the alternative virtual-contextual training model/approach.

In Phase 2, it underpinned the conceptualization of the alternative training model. Within the four-month stretch of its implementation, teacher training was delivered in two virtual approaches: synchronous & asynchronous, both formed the newer version of ensuring structural continuity and trainees' adaption. Data collection took place through systematic document analysis and multi-stage interview, both powerful tools to investigate and process trainees' feelings, experiences, beliefs, and insights (Islam et al., 2014).

The respondents of the study included a total population of 35 teachers from three primary laid-back schools. Through individual exchanges, the study documented the respondents' interactions and reflections throughout the training duration. Drawn from authentic and documented evidence, data were analyzed and subjected to validity triangulation through post-mortem sessions with peer mentors, local onsite mentor and virtual trainer-mentors. Feedbacks, views, and attitudes during the entire training duration were ethically secured and treated with anonymity.

The interview process was conducted formally through mobile messages and video chats. Respondents were contacted earlier and signed consent letters to prove their willingness to participate in the audio-recorded interviews. Lichtman's (2013) model was followed. Congruently, analysis of the interviews followed the thematic analysis technique as suggested by Ritchie and Spencer (2002). The main themes of the research were identified through the process of coding the meanings and concepts of each statement in the transcripts. It should be noted that the list of themes underwent iterative revisions and refinements until saturation point was achieved (Glaser & Strauss, 1967; Lincoln & Guba, 1985). The themes were then clustered into main components which were used to frame the conceptual development as presented in a 'logical chain of evidence' (Miles & Huberman, 1999).

RESULTS AND DISCUSSION

The Development of the Framework Alternative Virtual-Contextual Teacher Training Model

Need assessment and survey

The need survey analysis showed the teacher were ready for online/virtual training with minimum specification of gadget shown in Table 1. Only a half of them had an access data of internet. A few of the respondents (less than 5 teachers) were familiar with distance/virtual meeting technology. They were only familiar with chat group/online chat, phone call, and short messaging. Moreover, the first trial mode used the online teacher training delivered by WhatsApp group chat training model such as voice note and text mode. It was also noted that the internet access data balance for all the respondents was subsidized by the Central Office of the trainer-providers. In the first step of training, the respondents were taught how to use and explore the features and voice note in WhatsApp.

First modeling & trial phase

The synchronous delivery, the first model in online teacher training was introduced by WhatsApp group. As a platform, WhatsApp played a role not only as a learning management system for the asynchronous learning but also as a delivery tool in synchronous training by using online chat, voice note and video in particular times as shown in Figure 2. The monitoring process was employed through teachers' artifact analysis. The reciprocal continuous feedbacking was observed through direct instruction using group chatting. For instance, feedback was sent to improve their artifacts day by day as a portfolio, inclusive of learning reflections in their practices (Awang-Hashim et al., 2019; Tigelaar et al., 2006). During asynchronous delivery, extrinsic rewards (i.e., internet load, pens, and notebooks, among others) were given in appreciation of work-based tasks.

The evaluation and documentation were conducted by using teacher artefact/portfolio and their feedback. Results showed that (1) Positive and intensive feedback, extrinsic reinforcement (i.e., rewards and incentives, and contents that were teacher-related problems motivated teachers to finish their work-based tasks; (2) Results of teacher's 'challenging' assignments charted below the outcomes/expectations; (3) Indirect feedback was less understood without continuous mentorship; in other words, the synchronous processes through chat and voice note were insufficient in providing direct experience for teachers to do hands-on activities; and

Table 1. Teacher-trainees' On-line readiness

Number of Teachers	Compatible device (Video Conference & Chat)	The device not compatible for video conference (chat only)	Has no compatible device	Has internet access with enough data balance	Has internet access but insufficient data balance
4	✓	-	-	✓	-
16	-	✓	-	✓	-
14	-	✓	-	-	✓
1	-	-	✓	-	-

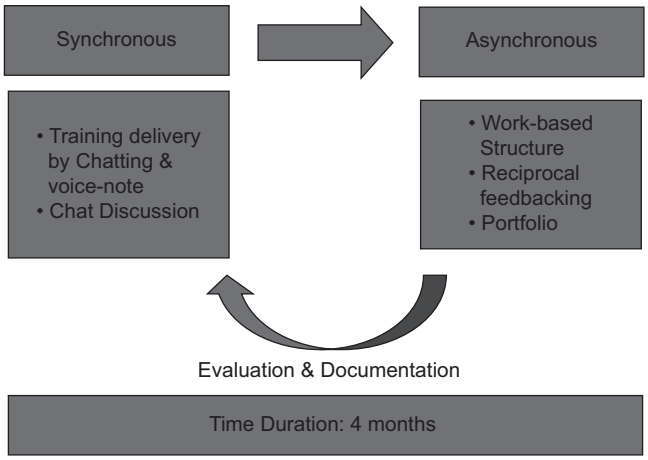

Figure 2. First trial model: Virtual teacher training

(4) Verbalized difficulty in understanding the material on online delivery training via WhatsApp group chat without hands-on activity was evident.

The above results emphasize the importance of motivationally enhanced and emotionally supportive instruction brought about by the rapid shift to online instruction in distance training during stressful time (Ranellucci & Bergey, 2020). Likewise, reinforcement motivation plays an integral role in attracting, maintaining, and developing teachers (Claudia, 2015). It has been emphasized that although intrinsic motivation shapes inherent enjoyment and pleasure derived from it, the mediating effects of external rewards or pressures remains the most self-determined type of motivation (Ryan & Deci, 2000). From this statement, the trainees' portrayal of self-determined adaptation to the new normal context and act-alike experts or peer critics of new learning experiences (Chen et al., 2019) must have emerged from motivated behavior coupled with workplace mentoring- these operational strategies could be seen as success requisites in implementing training programs (Gorozidis & Papaioannou, 2014; Ranellucci & Bergey, 2020).

During the asynchronous delivery, extrinsic rewards (i.e., internet load, pens, and notebooks, among others) were given in appreciation of work-based tasks. Operationally though, the WhatsApp group showed limitation in providing material understanding to the teacher and in demonstrating the teachers' active role in the training process. Similarly, respondents' unfamiliarity of the video call platform hindered their interface. Since both trainers and trainees did take active roles (Philipsen et al., 2019), one of the alternative strategies implemented was to gather the respondents in small groups for teleconferences with on-site trainer assistance. This model responded to the shortcomings of the previous model where trainees became conversant with their learning experiences.

The framework of the alternative-virtual teacher training model

According to Philipsen et al. (2019), an effective teacher professional development training embodies the following attributes: (1) a match to existing teacher needs, (2) a match to existing school needs, (3) teacher involvement in the design/planning of professional development activities, (4) active participation opportunities, (5) long-term engagement, and (6) high-quality teachers. Approximating these attributes, the alternative virtual-contextual approach (Figure 3) presents the detailed account of the virtual-contextual training strategies and its underpinning outcomes.

Most apparently, teacher development initiatives have been delivered through webinars and other digital-mediated platforms. This is supported by the study of Philipsesn et al. (2019) which laid six components of teacher professional development (TPD) for online blended learning (OBL), namely: (1) an articulated TPD design for OBL program and environment; (2) recognition of the current context towards OBL; (3) responsiveness of teacher change associated with the transition to OBL; (4) purposiveness of the overall goals and relevance of TPD for OBL; (5) recognition of teacher professional development change-driven strategies associated to OBL; and (6) TPD evaluation and dissemination of competencies (KSAVs). Interestingly, the above-mentioned OBL components approximated the conditions and findings in the systemic analysis model or Part 1 of this study which laid the conceptual foundation of the alternative-virtual teacher training. Basically, this model espouses the teacher learning approach instead of the training approach with a specific focus on pedagogical settings rather than the basis of pedagogical norms. It advocated the concepts of practice-based, team-oriented learning, on-interface or face-to-face meetings with diverse groups, and online activities in multiple ways to produce and share knowledge and experiences (Kauppinen et al., 2020).

Although some experts claim that e-learning models are endemic to delivery pitfalls, these models nevertheless, bear promising opportunities to overcome existing barriers along its integral features: (1) Time, synchronic and a-synchronic communication; (2) Spatial, contact of or between experts in distant locations, without travelling; (3) Analog-digital, combining any text, audio, and video; and (4) Norm, shifting role of learners from pure consumers to active co-producers of learning content (Laschewski, 2012). Thus, preceding results suggest that the complementarity of synchronous and asynchronous training holds trainees' potential of content-knowledge transfer, skill-practice reinforcement, and external or social scaffolding.

The Viability Alternative Virtual-Contextual Teacher Training Model

Synchronous training delivery

In the synchronous training, respondents reported that they learned about knowledge of practice. It was projected under the domain of knowledge involving concepts, facts, descriptions of procedures, and models in a certain teaching method, a requisite for performance (Chen et al., 2019). Evidence showed that the respondents manifested traces of knowledge and practice for curriculum adaption through distance learning. Specific teaching tasks involving how to prepare lesson plan, worksheet and learning

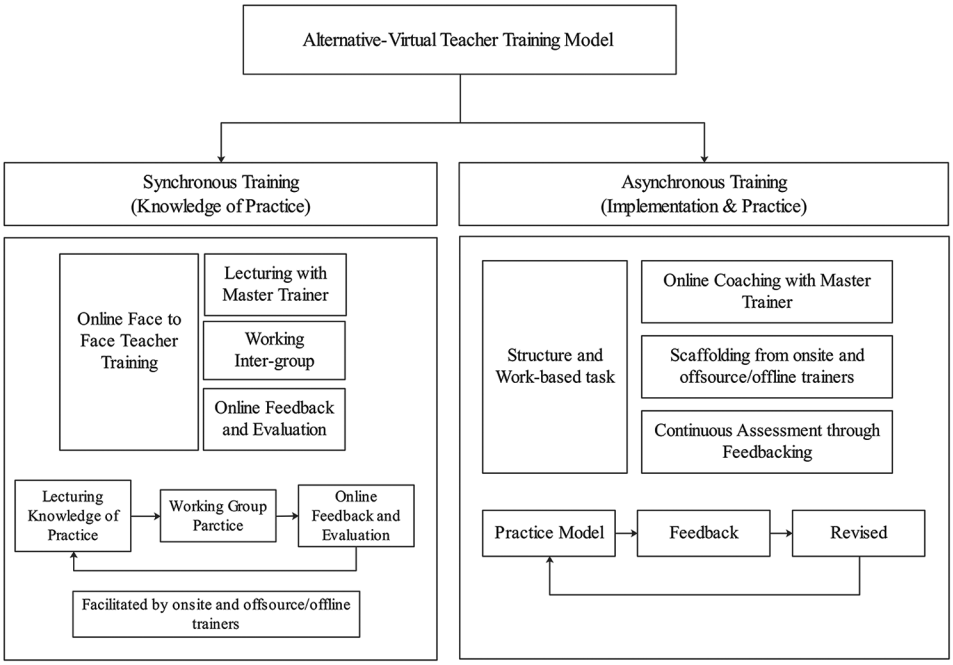

Figure 3. The alternative-virtual teacher training framework

materials enhanced their pedagogical content knowledge (PCK). Also, synchronous training facilitated them to recognize change-in-practice while they combined virtual lecturing, working-intergroup and giving online feedback and evaluation.

As the respondents were also assigned to small inter-groups by the onsite trainer, they performed individual and work-based tasks, while online and onsite mentors monitored and mentored them. Such an intervention strategy responded to the claim that online learning environments propel inherent needs typical in the more complex online interface, making the role of mentoring critically indispensable. This viewpoint suggests the importance of mentoring knowledge and skills related to (1) promoting content learning and conceptual understanding, (2) supporting self-regulation and self-efficacy, and (3) building personal and interpersonal relationships (Norton, 2005). It is worth mentioning that the virtual training of the respondents required the physical presence of a mentor, direct from the local site. Here, the onsite mentor supported the changing dynamics of inter-group and peer interactions, bringing confirmatory feedback and evaluation from the central or online trainers while implementing on-line and work-based activities via virtual technologies over time (Johnson et al., 2007). This is to say that introducing the dual mentor-trainers (synchronous off-source/off-line) gave rise to working collaboratively and facilitated scaffolding the respondents toward knowledge practice. Moreover, dual mentoring ensures validated action and conceptual-based initiatives, intentionally intercepting teachers' attitudes and views (Borg, 2006). It is thus right to assume that the synchronous delivery strategy supported the respondents' renegotiation of their ascribed tasks and identities in their bid to align knowledge of pedagogy and alternative practice.

Asynchronous training delivery

In the asynchronous training, the respondents focused on practice and implementation. They were given structured work-based tasks related to problems in developing lesson plans and student worksheets for distance learning. As the most common and functional e-platform, the WhatsApp group chat was considered the learning management system. In this platform, they were facilitated to discuss, post inquiries, uploaded/updated their word files. As they embarked on the adoption of these off-line tasks, the teacher-respondents began displaying traces of self-directedness and collaborative work with peers. Due to urgency of task completion, they complied with onsite trainer-mentor targeted performance through face-to- face mentoring and coaching, and reciprocally synchronized scaffolding expectations from their online trainer-mentor. The two-way reciprocal feedbacking, mentoring, and coaching from asynchronous trainer-mentor and onsite trainer-mentor paved the way for them to update their work plans and tried utilizing learning inputs.

This type of integrated synergy which dominated the asynchronous training interface corroborated the study depicting online training instructional design consisting of modelling, coaching, scaffolding, articulation, reflection, and exploration and eventually showing constant improvement of teaching practice (Gorozidis & Papaioannou, 2014; Ranellucci & Bergey, 2020). Through the artefacts, continuous improvement of teaching practices was charted. Although the sudden transition to virtual training happened without practice and the process change and preparation is unknown, the same condition rendered the respondents broader understanding and consciousness to integrate change in a self-paced perspective (Awang-Hashim et al., 2019). For instance, explication that reflected internal reasons for the teachers' decision to participate in the specific training program, such

as, "*I have learned a new thing*", "*I like to learn it, because it makes me easier in preparing learning for the student*", "*I have new motivation to learn a new thing*", and "*I am happy with this training because it's useful for me*" revealed the emergence of the intrinsic desire to learn more. The fact that the virtual-contextual framework highlighted reciprocal and inclusive engagement, these attributes- interesting and challenging nature of the given tasks and the curiosity to explore propelled teachers' self-directed intentions to gain new things (Legault, 2020; Ryan & Deci, 2000).

Motivation was wanting as well. Practices such as introducing incentives and rewards were claimed afterthoughts. Justifications for actively implementing the knowledge and practice gained from the training were expressed by some respondents as follows: "*The praise of the success in completing the work-based task makes me more enthusiastic to do the next task*", "*The reward in a challenge makes/impresses me to finish every work-based challenge*", and "*I like the challenge during the training, it gave me a target to achieve*". This set of verbatim explicates that not only external reinforcement but also external tasks can promote teachers to optimize their own practice and influence the level of practice development (Liu et al., 2019). Hence, the combination of structured work-based challenging competitions and continuous reciprocal feedback shifted their perspective to intrinsic motivation as attested by these quoted teachers' remarks: *"…at the beginning, I would like to do the task due to the reward. However, I saw the changing of my students, I become more enthusiastic to do the further task*".

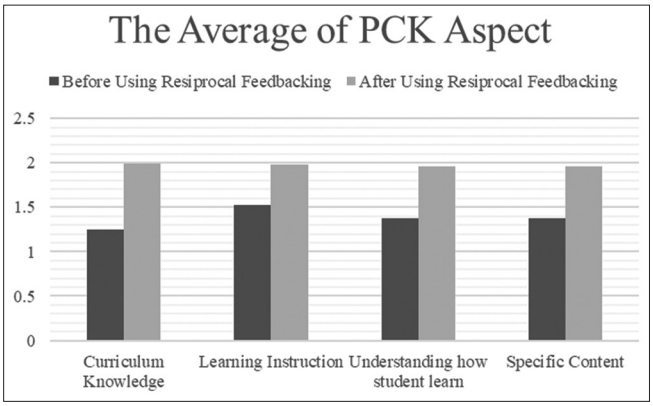

Figure 4. PCK areas of improvement

Complementarity outcomes of the synchronous and the asynchronous models

The synchronous and asynchronous activities represented a spectrum of knowledge and skills for Pedagogical Content Knowledge (PCK) enhancement related to the respondents' subject and method via distance/virtual learning. The PCK aspect grounds how to flex or adapt the curriculum while closely aligning new learnings in professional practice, opportunities to enact certain (innovative) instructional strategies and materials, and to reflect individually and collectively on experiences (Ranellucci & Bergey, 2020). Based on artefact analysis, the complementarity of both models spurred PCK incremental improvements of teachers' knowledge-based experiences in these specific aspects as shown in Figure 4: (1) knowledge practice of curriculum; (2) learning instructional strategy; (3) topic specific; and (4) understanding of how students learn. These results affirm the claim that there exist particular matters that can provide depth and breadth to conceptual knowledge development (Berry, 2015; Garritz, 2015; Gess-Newsome & Gardner, 2011; McComas, 2014).

Figure 4 plots that their artifacts were mostly categorized poorly before using reciprocal feedbacking on PCK. After reciprocal feedbacking, the teacher-respondents were not only internally motivated to revise their work, but also were gainfully honing their PCK knowledge and skills. Akkuzu (2014) stressed that using reciprocal feedback on teacher performance positively increased teachers' self-efficacy, which implies that self-efficacy bears a positive correlation to the increased teachers' PCK (Fananta et al., 2018). Hence, reciprocal feedback is a profound mechanism in honing the teachers' PCK.

With regard to assessment, common revisions centered on learning instruction such as selecting an appropriate teaching approach, aligning curriculum components, contextualizing learning experiences, and documenting misconceptions in some specific topics. Through continuous reciprocal feedbacking, gradual improvements in the quality of their artefacts were noted. Consistently, showed the fusion of (1) virtual face-to-face training with hands-on activities, (2) strengthening implementation of practice knowledge with asynchronous training, and (3) continuous reciprocal feedbacking scaffolded by onsite trainers, facilitated teachers' improved PCK as summarized in Table 2.

Table 2. Training Outcomes: PCK Aspect

PCK Aspects	Outcomes
Curriculum knowledge	• Giving an awareness of the teacher's mindset that learning has a structure, i.e., goals, activities, and learning. • Giving the teacher new knowledge about how to adapt the face-to- face curriculum to the "new normal" curriculum in distance learning that fits current context.
Learning instruction	• Realizing that learning preparation is a very important in learning. • Designing/creating a set of teaching tool (simple lesson plans and student worksheets, etc.). • Completing their work-based assignments with gradually changing quality (n=27/35).
Understanding how students learn	• Conceiving that a better student understanding can be achieved by teaching the material in a more contextual (according to the student's context) and explorative manner. • Confirming that learning will be easier to understand if it is delivered contextually through inquiry and exploration.
Topic Specific	• Exhibiting gradual improvement on their knowledge in specific topics specifically in science and numeracy through continuous reciprocal feedback.

CONCLUSION

Anchored on a qualitative design, this study aimed to examine the virtual and contextual delivery strategies and processes of an alternative teacher training in laid-back settings. Training initiatives that were responsive to the trainees' current pedagogical concerns, background, and capabilities formed core parts in its development and implementation. Major findings showed that the structure and the suitability of the virtual-contextual training model configurated from the following factors: (1) Accessibility of both physical and human resources; (2) Structure and quality (motivating and engaging) of work-based activities; (3) continuous/systematic assessment; and (4) reciprocal feedbacking.

Two major conclusions can be derived in this model. First, the complementarity of the asynchronous and synchronous models was seen as a common platform for practice, implementation and assessment of authentic-driven experiences and evidence of teachers' display of gained knowledge and skills. To illustrate the two-way or reciprocal feedback provided equity and inclusivity of teacher mentoring both from the asynchronous trainer-mentor and onsite trainer-mentor; thus, paving the way for teachers to update their work plans and utilize new training inputs in a more independent (individual) and collaborative (peer-group) manner.

Second, training resource exigencies proved challenging, yet the dynamic interaction and exchanges among the stakeholders had engendered motivated behavior, a key requisite for the new normal condition of training. This claim links the provision of content training which was designed as more practice-driven than knowledge-based. For example, the training contents which emphasized real-life, experiential, or situational concerns such as how to adapt their teaching practices that seemingly were compliant to the new normal era of teaching and learning. Given the nature of training content-practice and the complexity of virtual delivery, training stakeholders employed need-based strategies, i.e., extrinsic and intrinsic reinforcers, work-related/experiential activities, positive feedback, among others - all these helped them improve their perspectives on knowledge of practice (PCK aspect) in the domains of curriculum knowledge of practice, learning instruction, understanding of how students learn, and zooming into specific content.

The handful of significant contributions of the alternative virtual-contextual model offers a practical platform for teacher training and coaching. First, the study affirms that the alternative virtual-contextual model signifies the importance of developing a 'motivational-relational-experiential' training context to instill operational mechanisms toward PCK practice. Second, it provides a spectrum of initiatives/strategies for adaptation to local or specific contexts, despite the recurring challenges in technology access and use. Lastly, the study which covered a laid-back context communicates the need for comprehensive and profound studies across various contexts and spectra of training initiatives, and their impact outcomes on teacher autonomy or self-determined pedagogical practice and professional identity.

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REFERENCES

Akkuzu, N. (2014). The Role of Different Types of Feedback in the Reciprocal Interaction of Teaching Performance and Self-efficacy Belief. *Australian Journal of Teacher Education, 39*(3). http://dx.doi.org/10.14221/ajte.2014v39n3.3

Amzat, I., & Valdez, N. (2017). *Teacher empowerment toward professional development and practice.* Springer.

Awang-Hashim, R., Kaur, A., & Valdez, N. (2019). Strategizing inclusivity in teaching diverse learners in higher education. *Malaysian Journal of Teaching and Instruction, 16*(1), 105-128.

Berry, A. (2015). *Re-examining Pedagogical Content Knowledge in Science Education*. Routledge. https://doi.org/10.4324/9781315735665

Borg, S. (2006). *Teacher Cognition and Language Education: Research and Practice*. Bloomsbury Academic. https://books.google.co.id/books?id=BnNhAAAAMAAJ

Borko, H. (2004). Professional Development and Teacher Learning: Mapping the Terrain. *Educational Researcher*, *33*(8). https://doi.org/10.3102/0013189X033008003

Brophy, J., & Good, T. (1986). Teacher behavior and student achievement. In M. C. Wittrock (Ed.), Handbook of research on teaching (3rd ed.). McMillan.

Chen, L., Ding, W. R. U., & Wu, W. (2019). *Design of Online Teacher Training Mode: a Cognitive Apprenticeship approach. In Lecture Notes in Educational Technology.* Springer. https://doi.org/10.1007/978-981-13-6908-7_14

Chinapah, V., Cars, M., & Grinberg, S. (2013). Global Efforts towards Quality Education for All : Evidence and Reflections from an International and Comparative Educational Perspective. *Journal of Education and Research, 3*(2), 39–58. https://doi.org/10.3126/jer.v3i2.8397

Claudia, V. (2015). The Role of Motivation in the Development of School Teachers 'Career. Procedia - Social and Behavioral Sciences, 180(November 2014), 1109–1115. https://doi.org/10.1016/j.sbspro.2015.02.220

Craft, A. (2000). *Continuing professional Development: A practical guide for Teacher and Schools* (2nd ed.). Routledge Falmer.

Creemers, B.P.M., Kyriakides, L., & Antoniou, P. (2013). *Teacher professional development for improving quality of teaching.* Springer.

Dube, B. (2020). Rural online learning in the context of COVID-19 in South Africa: Evoking an inclusive education approach. *Multidisciplinary Journal of Educational Research, 10*(2), 135–157. https://doi.org/10.4471/remie.2020.5607

Fananta, M. R., Umbara, T., & Hastuti, S. D. (2018). In-Service Professional Development on Supporting Elementary Teachers' Pedagogical Content Knowledge and Efficacy through Inquiry-Based Teacher Training. *SHS Web of Conferences*, *42*(8). https://doi.org/10.1051/shsconf/20184200008

Garritz, A. (2015). Pedagogical Content Knowledge. In R. Gunstone (Ed.), *Encyclopedia of Science Education* (pp. 733–736). Springer Netherlands. https://doi.org/10.1007/978-94-007-2150-0_203

Gedik, N., Kiraz, E., & Ozden, M. Y. (2013). Design of a blended learning environment: Considerations and implementation issues. *Australasian Journal of Educational Technology, 29*(1). https://doi.org/10.14742/ajet.6

Gess-Newsome, J., & L. Gardner, A. (2011). A PCK Rubric to Measure Teachers' Knowledge of Inquiry-Based Instruction Using Three Data Sources. www.bscs.org/sessions

Glaser, B., & Strauss, A. (1967). The Discovery of Grounded Theory: Strategies for Qualitative Research. Sociology Press.

Golby, M., & Viant, R. (2007). Means and ends in professional development. *Teacher Development, 11*(2), 237-243, DOI: 10.1080/13664530701414886

Gorozidis, G., & Papaioannou, A. G. (2014). Teachers' motivation to participate in training and to implement innovations. *Teaching and Teacher Education, 39*(April), 1–11. https://doi.org/10.1016/j.tate.2013.12.001

Guskey, T. R. (2000). *Evaluating professional development*. Corwin Press.

INOVASI. (2019). Baseline Report-Sumba, East Nusa Tenggara Report. East Nusa Tenggara. http://www.inovasi.or.id.

Islam, R., Zatzman, G., & Islam, J. (2014). *Reconstituting the Curriculum.* Scrivener Publishing & Wiley & Sons Publishing.

Johnson, R., Kemp, E., Kemp, R., & Blakey, P. (2007). The learning computer: Low bandwidth tool that bridges digital divide. *Educational Technology & Society, 10*(4), 143-155.

Kauppinen, M., Kainulainen, J., Hökkä, P., & Vähäsantanen, K. (2020). Professional agency and its features in supporting teachers' learning during an in-service education programme. *European Journal of Teacher Education, 43*(3), 384–404. https://doi.org/10.1080/02619768.2020.1746264

Kyriakides, L., Creemers, B. P. M., & Antoniou, P. (2009). Teacher behaviour and student outcomes: Suggestions for research on teacher training and professional development. *Teaching and Teacher Education, 25*(1), 12–23. https://doi.org/10.1016/j.tate.2008.06.001

Laschewski, L. (2012). Innovative E-Learning in Rural Areas: A Review. *SSRN Electronic Journal.* https://doi.org/10.2139/ssrn.1861912

Legault, L. (2020). Self-Determination Theory. *Encyclopedia of Personality and Individual Differences*, June. https://doi.org/10.1007/978-3-319-28099-8

Lichtman, M. (2013). *Qualitative Research in Education* (3rd ed.). SAGE Publications, Inc.

Lincoln, Y., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE.

Liu, W. S., Li, X. W., & Zou, Y. M. (2019). The Formation of Teachers' Intrinsic Motivation in Professional Development. *Integrative psychological & behavioral science, 53*(3), 418–430. https://doi.org/10.1007/s12124-018-9465-3

Luschei, T. F., & Zubaidah, I. (2012). Teacher training and transitions in rural Indonesian schools: A case study of Bogor, West Java. *Asia Pacific Journal of Education, 32*(3), 333–350. https://doi.org/10.1080/02188791.2012.711241

McComas, W. F. (2014). Pedagogical Content Knowledge (PCK). In W. F. McComas (Ed.), *The Language of Science Education.* Sense Publishers. https://doi.org/10.1007/978-94-6209-497-0

Moe, M., & Rajendran, V. (2020). Dawn of the age of digital learning: An acceleration of trends that have building for year. GSV Ventures. https://medium.com/gsv-ventures/dawn-of-the-age-of-digital-learning-4c4e38784226.

Miles, M. B., & Huberman, M. A. (1999). *Qualitative Data Analysis*. SAGE.

Ministry of Education and Culture. (2016). Indonesian National Assessment Programme. https://pusmenjar.kemdikbud.go.id/inap-sd

Monk, D. H. (2007). Recruiting and Retaining High-Quality Teachers in Rural Areas. www.futureofchildren.org

Norton, P. (2005). Scaffolding Online Learning: The ART of Mentoring. *Technology and Teacher Education Annual.* http://iols.gmu.edu/assets/761/Article8c.pdf

Philipsen, B., Tondeur, J., Pareja Roblin, N., Vanslambrouck, S., & Zhu, C. (2019). Improving teacher professional development for online and blended learning: a systematic meta-aggregative review. *Educational Technology Research and Development, 67*(5), 1145–1174. https://doi.org/10.1007/s11423-019-09645-8

Perpres RI No. 63. (2020). Tentang Penetapan Daerah Tertinggal Tahun 2020-2024*, Kementerian Sekretariat Negara 1*. https://jdih.setkab.go.id/PUUdoc/176108/Perpres_Nomor_63_Tahun_2020.pdf

Ranellucci, J., & Bergey, B. (2020). Using Motivation Design Principles to Teach Screencasting in Online Teacher Education Courses. Journal of Technology and Teacher Education, 28(2), 393–401.

Ritchie, J., & Spencer, L. (2002). Qualitative Data Analysis for Applied Policy Research. In A. M. Huberman, & M. B. Miles (Eds.), *The Qualitative Researcher's Companion* (pp. 305-329). SAGE.

Rolando, L. G. (2015). *The Qualitative Systemic Analysis in the Context of Qualitative Research Methods.* 7881(August), 25–31. http://eujournal.org/index.php/esj/article/view/6133

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology, 25*(1), 54–67. https://doi.org/10.1006/ceps.1999.1020

Skoumpopoulou, D., Wong, A., Ng, P., & Lo, M. F. (2018). Factors that affect the acceptance of new technologies

in the workplace: A cross case analysis between two universities. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, *14*(3), 209-222.

Tigelaar, D. E. H., Dolmans, D. H. J. M., de Grave, W. S., Wolfhagen, I. H. A. P., & van der Vleuten, C. P. M. (2006). Portfolio as a tool to stimulate teachers' reflections. *Medical Teacher, 28*(3), 277–282. https://doi.org/10.1080/01421590600607013

UNESCO. (2015). *Education 2015 Forum*. http://www.unesco.org/open-access/terms-use-ccbysa-en

Valdez, N. & Awang-Hashim, R. (2020). *Cultural implications in the development of educational administration. Oxford Research Encyclopedia of Education.* Oxford Publishing.