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Introducing online training for health staff: An institutional perspective

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Abstract

Online training has been gaining popularity for its flexibility and cost-efficiency. Its introduction challenges existing practices of in-service training which are mostly in the form of onsite training. Based on a participative, interpretive case study, we conceptualized in-service training as an institution, examining how the introduction of online training affected changes to the in-service training practices. Our research investigates three modes of in-service training; onsite training, self-paced online course, and synchronized online training. Two conflicting institutional logics that are associated with the first two modes of training emerge; onsite training logic and online training logic. The in-service training institution in Indonesia remained stable despite changes in technology used and the covid pandemic. The logic of onsite training continued to be dominant throughout the period, and most training practices in onsite training were carried over to the online training without reflections.

KEYWORDS
in-service training, institutional change, institutional logic, online training

1 | INTRODUCTION

In-service training is an important part of public health services. This is reflected in large budgets allocated to training activities, including in public health projects related to ICT. Core practices in these activities are on-the-job mentoring, workshops, and training sessions, the two latter taking place during predefined time periods in physical classrooms inside or outside of the workplace. Such training has long been associated with high costs and extensive logistical operations (Sissine et al., 2014). Online learning offers to address some of these challenges. Although the development of online learning can be expensive (Amiel et al., 2009), it boasts cost-effectiveness in the long run (Engelen & Bauman, 2017; Ruggeri et al., 2013). Online learning also offers flexibility for trainees, and trainers, and saves time used for travel (Economides & Perifanou, 2018).

Online learning faces implementation challenges that can lead to low uptake (Chrysantina et al., 2019) and low completion rate (Jobe & Hansson, 2014). The challenges range from technical, to an individual or pedagogical aspects of online learning (Ali et al., 2018; Andersson & Grönlund, 2009). The contextual factors influencing the success of online training cover, in addition to infrastructural aspects, the more fluid concepts of culture, tradition, as well as rules and regulations, and a need for organizational changes. Such aspects have been emphasized in studies from developing countries (Andersson & Grönlund, 2009).

An institutional perspective lends itself well to studying these contextual factors, given the focus on the interplay of new technologies and social structures. This article seeks to explore in-service training in the health sector from such a perspective, namely how online training shapes and is shaped by existing institutions. While the focus of the literature on online training is on formal education, often in higher education settings (Ammenwerth et al., 2017; Fake & Dabbagh, 2020; Siribaddana & Hewapathirana, 2016; Tudor Car et al., 2018), there are some examples of

institutionalized practices in in-service training in the field of ICT4D, such as financial incentives and compensation (Herrick & Brooks, 2018; Sanner & Sæbø, 2014).

This research follows a shift of in-service training from face-to-face to online in the health sector in Indonesia. Initially, online training was introduced small-scale as exploratory research to counter some of the existing financial and logistical challenges with on-site training in a large and populous country such as Indonesia. However, with the 2020 pandemic, online training became a necessity as travel and physical meetings were restricted.

The changes within three modes of in-service training were examined using an institutional perspective, conceptualizing in-service training as an institution; a multifaceted, durable social structure "made up of symbolic elements, social activities, and material resources" (Scott, 2013, p. 57). This leads to our research question: *How does the existing institution of in-service training shape the introduction of online training for health staff in Indonesia?*

This question is relevant to the field of ICT4D from at least two angles. First, the potential of online training to reduce costs (Ruggeri et al., 2013) and reach marginalized groups addresses some long-standing challenges of capacity building in developing contexts (Sissine et al., 2014). Second, online learning platforms are predominantly developed in the North for learners in the South, therefore creating gaps and issues including the missing context of content (King et al., 2018).

To answer our question, this article is organized as follows. Section 2 presents related literature on online training, followed by how institutional theory can be used to view and analyze our case in Section 3. The research methodology section describes our research method and our empirical case. The findings, analysis, and discussion present our case as three modes of training, analyze it by themes, and discuss these themes using an institutional lens. Finally, this article concludes with theoretical and practical contributions.

2 | RELATED WORK

Broadly speaking, capacity building in ICT4D projects can be seen as efforts to improve the ability of health services to take up, implement, and sustain technology without external dependency (Sanner & Sæbø, 2014). Training is an important activity of this, typically related to learning new skills and or new technologies. Common challenges with such training relate to the relatively high costs involved. Transport and accommodation for the participants, per diems, classrooms, equipment, time away from work, and hiring skilled trainers contribute to the costs. One-time training sessions have been found insufficient and need to be complemented with mentoring and technical assistance (Ray et al., 2012), further contributing to costs and logistical challenges. It is common to apply a "cascade training" or "train-the-trainers" strategy to scale up capacity building in large organizations (Gask et al., 2019). Despite its wide practice, opinions vary about the effectiveness of this model. For instance, the quality of training can be "diluted" in such a model as training responsibilities become distributed (Clarke et al., 2013). This can be influenced by the readiness, acceptance, and ability of the initial trainers and trainees to pass on the training (Mathekga, 2006). Cascade training models still rely on generous budgets and face challenges of scaling and follow up, training management, scheduling, and "buy in" of the program by local government (Mormina & Pinder, 2018). To address some of the challenges on a more fundamental level, online training approaches have seen increased employment in recent years.

The literature is rich with definitions, sometimes contradictory, of what online learning is Singh and Thurman (2019). This article follows a broad definition of online learning as essentially any form of training being delivered online (Gros & García-Peñalvo, 2016). In this article, the learning being discussed is the one that happens in the workplace, by staff already employed. There is a lack of online learning literature for the workplace as most of them are in the educational sector (Tudor Car et al., 2018).

This article presents two modes of online in-service training; an *asynchronous* online *course* and a *synchronous* online *training*. In the synchronous mode, both the teachers and learners access the learning platform live or at the same time. This mode facilitates learning activities that use more direct interaction through the platform. The opposite applies to asynchronous. This mode allows learners to study at their own pace. These two modes are compared to the traditional training mode which is called face-to-face training in this article.

In addition to flexibility, other potentials of online training are its ubiquity and ability to deliver training on a massive scale (Economides & Perifanou, 2018). Many workplaces adopted online training for their staff for these potentials; flexibility, ubiquity, and scale (Behrend & Thompson, 2011; Lim et al., 2007).

The literature on online training at the workplace focuses on blended approaches (Garley et al., 2016). Common topics include instructional design (Bjørge et al., 2015; Fuji & Galt, 2015), the development of the online courses (Chrysantina et al., 2019), and training curriculum oalr how the training was organized (Alharbi, 2017; Ammenwerth et al., 2019). A common strand in the literature evaluates online training by assessing the learning outputs (Kitsiou & Vlachopoulou, 2008, Dolezel & McLeod, 2017) or by comparing different methods (blended vs face-to-face, Mastellos et al., 2018; or fully online vs face-to-face, Russell et al., 2008).

When online training is used to replace onsite training, practices in planning, designing, organizing, and running training will need to change (Chio, 2020). Although some literature discusses implementation (Bjørge et al., 2015), they rarely touch upon the shift from onsite to online, the strategies, and the tension arising from this shift. The adoption of online training faces social and technological challenges such as access to

reliable internet, hardware to access the training materials, digital literacy of the targeted learners, and both individual and organizational readiness to adopt online training approaches (Laksitowening et al., 2016, Kaasbøll, 2014; Dray et al., 2011; Nakanjako, et al., 2015; Tudor Car et al., 2018, Ammenwerth et al., 2019). However, these articles failed to dig deeper into the logic and reasoning behind it. Although the trend for online training grows particularly in this COVID-time, the literature is still leaning toward ones developed for health workers in clinical settings such as physicians and nurses (Jain et al., 2020; Tay et al., 2020; Zhou et al., 2020).

This study adds to the conversation about online training in the following ways. First, we present different applications of online training for in-service training. An added dimension is how these initiatives moved from exploratory research to compulsory activities due to the COVID-19 pandemic. Second, we apply an institutional lens to analyze the shaping over time of the various modes of online training.

3 | THEORETICAL FRAMEWORK: INSTITUTIONAL THEORY AND INSTITUTIONAL LOGICS

The institutional lens is applied to make sense of the shift from onsite to online training in Indonesia. Institutional theory is at its core a set of concepts to understand the interplay between various actors and the environment they live and work in. Central is the concept of institution, which can be defined as "multifaceted, durable, social structures, made up of symbolic elements, social activities, and material resources" (Scott, 2013, p. 57). Such a definition implies that institutions, as social structures, both shape and are shaped by human behavior. On one side this allows for alternative explanations to a rational choice understanding of individual and group behavior (Currie, 2011), where people and organizations instead seek to attain and maintain legitimacy within these social contexts (Burton-Jones et al., 2020). Conversely, it opens up for understanding institutional change or stability.

It is such change and stability that this study seeks to understand. The point of departure is seeing training within the public sector as an institution, as a durable social structure, with symbolic elements (such as certificates), social activities (such as lectures or workshops), and material resources (such as budgets, training material, and training rooms). Such social structures attain stability in the process of institutionalization and are typically self-reinforced by shaping human activity to uphold them. However, they can also lose legitimacy and erode, known as deinstitutionalization, and change into "another institutional form, organized around different principles or rules" (Jepperson, 1991, p. 152), which is known as reinstitutionalization. A core preoccupation with much institutional theory literature has been to investigate the various forces by which such institutional dynamics are triggered. This study follows the stream of literature that examines potential institutional change as caused by institutional complexity (Greenwood et al., 2011).

Institutional complexity stems from the presence of different institutional logics. It can be defined as the socially constructed, historic patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality (Thornton & Ocasio, 1999, p.804). The original usage was more at the macro societal level, such as logics of capitalism or bureaucracy, but it has proven useful to understand behavior also at meso- and micro-levels (Thornton & Ocasio, 2008). The key contribution of an institutional logics perspective is that it highlights how institutions both enable and constrain social action. Institutional logics, as underlying assumptions on how to carry out an activity in a certain social context, thus provide a link between institutions and the agency of individuals and organizations. It can thus be a relevant analytical lens to examine agents' response to new technology, such as online training, in a given social context.

Institutional logics has seen quite some application in ICT4D research. Sanner and Sæbø (2014) examine the institutionalized financial incentive of *per diems* in an ICT4D project, noting that within the development sector, a logic of paying for participation became an institutionalized practice shared by both project funders and local stakeholders. The practice incentivizes workshop and training "shopping," and projects trying to curb the use of excessive per diems face challenges to meet their attendance goals for such events. Within the education sector, Stratton et al. (2016) identified that an education sector professional logic took second place to a technology sector professional logic in ICT4D projects in two South American countries. In the development of the project, technology-oriented discourses of "agile" and "lean" became dominant, with a corresponding emphasis on system development and uptake rather than on education outcomes. They note that such contradicting logics may contribute to the prevalence of design-reality gaps in ICT4D projects (Heeks, 2006). In their study of health information system implementation in Tajikistan, Sahay et al. (2010) found irreconcilable differences between the local government and the external technical partners when it came to the design. They attributed these differences to contrasting institutional logics of a (post-)soviet centralistic approach and a decentralized approach rooted in primary health care and the enabling features of digital technology. The conflicting logics manifested themselves across the time–space dimensions as different interpretations of when and where information systems design and use decisions could be made. The above cases also highlight a phenomenon that is common in ICT4D projects, that of partnerships often consisting of local in-country actors, external funders, and technical advisors. Ismail et al. (2018) investigate how such organizational plurality leads to conflicting institutional logics, and how ICT4D projects respond to them.

Specifically touching on the relationship of new technologies, Hayes and Rajão (2011) conclude that technologies developed in accordance with a certain institutional logic may be reconfigured to reflect other institutional logics, owing to the interpretive flexibility of the technology.

The emergence of conflicting logics due to the introduction of new technology may thus be resolved by the incorporation and adaptation of the technology into a new institutional reality.

4 | METHODS

Our empirical case consists of three projects centered around the introduction of a software platform to strengthen health information management in Indonesia. The first project aimed to integrate fragmented health information streams (Chrysantina & Sæbø, 2019) in the Center of Data and Information (CDI). Initially, the training was conducted face-to-face, representing the traditional mode of training we analyze ("Mode 1"). In 2018 the Ministry of Health announced an ambitious plan to expand the platform nationally, which sparked the development of a fully online self-paced course or "Mode 2" (Chrysantina et al., 2019). The second and third project was the introduction of the platform in the Immunization and Zoonotic Diseases Programs, respectively, where we see the emergence of synchronous online training ("Mode 3"). A timeline is provided in Table 1.

4.1 | Data collection

This research follows a participative interpretive case study method (Walsham, 2006). Our access to the empirical material is through the engagement of Author 1 as a member of the country project team in training and meetings. The participation was as follows: (1) delivering initial face-to-face training, (2) assessing HIS training needs, (3) developing and executing the asynchronous online course, and (4) designing and conducting synchronous online training for both projects in Mode 3. Author 1 participated in decision-making in the aforementioned activities and has collected qualitative data through notes from planning and delivering the training. In addition Author 1 conducted 20 semi-structured interviews with staff from the Ministry of Health, province and district health offices, universities, and related non-government organizations (NGO) (Table 2). The interviewees were all involved with the training, either as participants, as developers and trainers, or as responsible at the Ministry level or with NGOs. Consents were obtained for each interviewee to use interview transcripts for research.

Meetings and interviews were carried out in Indonesian and/or English. Interviews carried out in Indonesian were transcribed by research assistants in Indonesia and interviews carried out in English were summarized by Author 1. All these minutes of meetings and research field notes were then summarized into research documentation in English by Author 1. Quotes in Indonesian were translated to English for analysis purposes.

4.2 | Data analysis

The data analysis has followed both inductive and deductive processes (Myers, 2019). An initial inductive analysis took place when discussing the activities the first author was involved in, centered on in-service training in the Indonesian health sector. Since these activities had taken place over several years, with varying modes of training approaches and technologies, a realization that institutional change and inertia were central emerged from this analysis. As an example, the inductive analysis would yield findings related to time management by participants in the online asynchronous training. This resonated well with earlier work by the authors on institutional logics, and we thus formulated hypotheses that the various modes of training were associated with different institutional logics. This led to a second, deductive round of data analysis.

For the deductive analysis, the first author wrote an extended narrative of the case for all authors to analyze, with quotes from informants translated from Indonesian to English. While activities of training to a certain degree overlapped in time, the narrative was written with three distinct periods, each representing a different approach to training health staff in the use of health information systems based on the software platform. The deductive analysis process first focused on coding the narrative using concepts related to institutional theory, such as organizations, change, stability, and institutional logic. Where the written (English) narrative suggested additional relevant links to institutional theory, the raw

TABLE 1 The projects and training modes being examined, based on the timeline

Time period	2016–2017	2018–2019	2020–2021
Training mode	Mode 1: Traditional face-to-face training	Mode 2: Asynchronous online course	Mode 3: Synchronous online training
Project being examined	Project 1: HIS strengthening in the CDI	Project 1: HIS strengthening in the CDI	Project 2: Immunization program Project 3: Development of Zoonotic surveillance system

TABLE 2 Data collection activities and methods

Activities of data collection	Subjects	Data source	Type of data collected
Semi-structured interviews to trainers (lasted 32–90 mins)	Trainees: experiences, opinions, and challenges related to face-to-face and online training; and how these trainings relate to their daily works, their work tasks Course developers and trainers: ideas, perceptions, how they plan, organize, and conduct face-to-face and online training NGO and ministry: practices, interviewee's personal motivations, and possible organizational visions related to the three modes examined in this article.	Trainees: • 3 district staff • 4 province staff • 1 ministry staff Course developers: 2 staff Trainers: • 2 from University • 2 consultants • 1 district staff Ministry: 1 management level and 2 staff NGO: 2 consultants	Transcript of interviews
Training	Training for staff in national, province, district, and/or healthcare facilities in relation to the implementation of the software platform	CDI project: 13 training (onsite) Immunization project: 2 Zoom training (central level) Zoonotic surveillance system project: 3 Zoom training (2 for central level and 1 for province, district, and healthcare facilities)	Field/virtual observation
Meetings	Coordination meeting involving Ministry of Health and the project team	CDI: Tens of formal and informal meeting over the course of 2 years Immunization project: 12 meetings Zoonotic surveillance system project: 21 meetings	Field/virtual observation

data material of the first author was consulted. This led to the subsequent identification of the four themes appearing for all three periods where all authors identified institutional aspects; budgeting, scaling, organization of training, and time allocation.

5 | RESULTS AND ANALYSIS

In this section we describe the three modes of training delivery examined, which represent different periods in our empirical case of health information systems strengthening in Indonesia. First, face-to-face traditional training was common at the onset of the CDI project. Second, an asynchronous online course was introduced in 2018 to address scaling issues. Lastly, synchronous online training emerged during the latter years. We analyze these three modes of training according to a set of identified characteristics of practices, related to budgeting, scaling, organization of training, and time allocation.

Traditionally, training within Indonesia's Ministry of Health is conducted face-to-face in government offices or hotel venues. Trainees are usually gathered with their colleagues in an environment where they can focus on the training and will be released from other work responsibilities. For a national level training, some participants may need to travel up to 10–12 h each way. Thus, face-to-face training often requires a large budget and a lot of time away from work for travel.

The second mode is an asynchronous online course using a platform where pre-recorded tutorial videos, assignments, and quizzes are hosted. The online course is open and self-paced. This means everyone can study the material for free, independently without instructors, at any time that suits them. Although at that time online training had not yet been practiced in the ministry, the idea of adopting online training for scaling up was accepted by the project team. During the implementation period from 2018 to 2019, the online course enrolled 1299 participants of which 330 (25%) completed the course. Among these numbers, only a very small percentage were the targeted health staff. The rest were mainly university students.

The last mode is synchronous online training for the immunization and zoonotic diseases projects. This was a result of the COVID-19 pandemic and learning from the two previous modes. The pandemic hit the country in March 2020 and the corresponding restrictions impacted the traditional face-to-face training. Similar to the second mode, the team set up a platform containing pre-recorded tutorial videos, assignments, and

quizzes. There would also be online synchronous sessions to address the previous low uptake. We now turn to our analysis related to the identified practices of each mode. These practices will be summarized in Table 3 at the end of this section.

5.1 | Practices of budgeting

Budgeting is a major component of the training conducted by the ministry. In the traditional onsite training model, the budget usually includes transportation for participants, organizers, and trainers, accommodation, trainers fee, per diem, office supplies, and so on. Although budgeting usually occurs at the beginning of a project or financial year, it is common that as the project progresses the training plan within the budget needs to be refined or revised. Normally, the Ministry will adjust the training activity based on the remaining budget. The budget, rather than training needs, thus determines the scale, location, duration, and structure of the training. As one NGO consultant put it:

TABLE 3 Examined practices of different in-service training modes

Practices of	Mode 1: Onsite training, following the *onsite training logic*	Mode 2: Asynchronous online course, following the *online training logic*	Mode 3: Synchronized online training, as a resolution of conflicting logics
Budgeting	Majority budget for travel and gathering	Cost efficiency from the flexibility of time and space	Trainees receive resource person fee as an incentive to attend
	Per diem as an incentive to attend	Course development costs	Internet allowance
	Spending the whole budget is an objective	Ongoing maintenance costs	Repurposing the onsite training budget items for online training
	Training is planned and designed based on the budget	No financial incentives to participate	
		Internet allowance	
Training for scale	Cascade training levels	Standard competence for all user levels	Training is customized for user levels
	Different competence levels	Prescribed course	Core team members train all levels
	External consultants as the main trainers		
	Trainers train staffs one level under their level		
Organization of training	Instructor-led learning	Self-directed learning	Instructor-led training
	Training as a social event	Independent learning	Spatial flexibility
	Limited access to learning materials	Spatial flexibility	Extended access to learning materials
		Time flexibility	
	Optional evening group work	Unlimited access to learning materials	Learning materials: Pre-recorded videos, presentation slides, quizzes, assignments, synchronous lectures, demo, discussion and hands on, recorded synchronous sessions
	Learning materials: Live lectures, hands on, presentation slides, quizzes, assignments, and in-class interactions	Learning materials: Pre-recorded videos, presentation slides, quizzes, assignments, discussion forum	Growing learning resources with the recorded sessions
	Learning materials not standardized	Fixed learning materials	
Time allocation	Synchronous training	Asynchronous training	Synchronous training
	organizer schedule	Self-paced	organizer schedule
	Fixed date	Flexible time	Fixed date
	Time slot for ceremonial agenda	Time slot exclusive for learning	Shorter time slot for ceremonial agenda
	Time slot for travel time	Self-prioritization	No time slot required for travel
	prioritized over day-to-day job	Duration and length of training depend on the learner	Interruption from other responsibilities
	Training lasts for days		
	Up to 8 h a day		Training lasts for days
			Up to 3.5 h a day

> They (Ministry) do not conduct the need assessment properly. They have got a budget then they fit the training into the budget. Training is not clear; what to be trained. The full aspect (or objectives) is not met, and they have no trainers. (Consultant, NGO)

Although the asynchronous online course introduced in 2018 did not require most of the traditional budget lines mentioned above, no adjustment was made to the training budget after its launch. Despite the availability of the online course, the Ministry continued doing their traditional onsite training for the field staff on the same topic to spend the unchanged onsite training budget to keep the same budget for next year.

The immunization project planned for a combination of an online course and face-to-face training, but the budget did not correspondingly include online training. This plan was disrupted by the pandemic whereby the immunization project pivoted to a fully online training plan that was again not followed with a corresponding budget change. In one of the meetings, the immunization data manager asked for guidance from the supervisor regarding the adjustment of the training budget, but no answer was provided at that time.

The same online training model was applied to the zoonotic project. In this concurrent project, the local university managed the fund provided by the donor. While the budget line did not specifically cover online training expenditures, the university could be flexible. For example, the funds they received to provide technical assistance were used on a server and Zoom subscription. They also continued paying per diem to participants to cover internet costs instead of meals. They continue paying the Ministry staff who attended the meeting as a resource person;

> (From the donor) there are no particular budgeting rules for online training, but the standard resource person fee for onsite training is 900k IDR, the moderator fee is 700k IDR and participants fee is 100k IDR. We adjust these numbers for online training and online meetings. I have confirmed this with the Ministry and they're using the same numbers and budget lines. Assistant (University)

5.2 | Practices of scaling

Similar to many ICT4D projects, our case started with a pilot, where the training was handled directly by the national project team. Based on the pilot, the Ministry aimed to scale up the implementation to 496 districts in 5 years. The team decided to adopt an existing global online course for the software in question to address this scaling challenge:

> Even for a beginner like me, the online course worked well explaining the platform to me. We wanted to expand massively. An online course can save time and budget. When we started the implementation we felt like we were lacking in resources (staff and budget). (Consultant, NGO)

The project team started the localization efforts, adjusting the materials, language, curriculum, and contexts (Chrysantina et al., 2019).

As the onsite training continued despite the availability of the online course, they were combined in that the project team allocated up to 60 minutes in the face-to-face training session to introduce the online course to the field staff as an additional learning source that they can revisit for guidance. Nevertheless, there was no follow-up and very few health staff completed the course.

After this experience, the team approached the training strategy in the immunization project differently. The training for the immunization project was planned to combine face-to-face training and an online course. The online resources would serve as supplementary learning or knowledge base that the health staff can revisit whenever needed. This means the main scaling strategy remains face-to-face training.

With the COVID-19-related restrictions, the project team had to abandon the face-to-face training plan and pivot to solely using online training. The immunization manager insisted on continuing using the cascade model for this.

> We can train our workforces in lower administrative levels as trainers. It is better to use a cascade model. We pass the competency to train the provinces and districts because they are responsible for supervising and evaluating. Encouraging ownership and involvement. Empowering. At least to our colleagues at the provincial level. Although the budget is from the central level, at least the province can be the training committee or organizer, this is from the cascade point of view. (Manager, Ministry of Health)

Despite this, such cascade online training was not carried out because there was limited experience and time, even at the central level, to properly train functional provincial training teams.

5.3 | Practices of organization of training

This section reviews the practices of organizing the training, i.e. the physical or virtual venue where the training takes place, the interaction among learners and with the trainers, as well as the role of both the learners and the trainers. The first training mode we examined was the "traditional

face-to-face" mode. Here, trainees are gathered physically in a designated venue. They are excused from other work obligations. The training material is mostly delivered through demos or lectures with presentation slides. The number of trainers depends on the size of the audience. In the CDI project, the team typically consists of one trainer and one facilitator for 10–20 participants. This is sufficient to address questions and queries from the trainees promptly.

There was some use of assignments to improve trainees' engagement and comprehension of the training subjects. These assignments had strong social aspects as the trainees often carried them out in groups in the evenings.

The second training mode relied on pre-recorded demos, lectures, and online assignments that were hosted on an online learning platform. The interaction aspect was nearly absent. Neither the trainers nor trainees used the asynchronous discussion forum. Trainees watched the videos independently at their own pace and a certificate of completion was given when the trainees met a minimum total score of 80% across all assignments and quizzes. The completion of this course was not mandatory. The completion of the online course relied solely on the learner.

Due to the COVID-19 pandemic, training had shifted online. The poor experience with the self-paced online course led the immunization project team to adopt a *flipped learning* approach. With this method, the health staff were required to study the training materials before synchronous live sessions. Similar to Mode 2, the assignments and training materials are hosted in an online learning platform. The live training was designed to clarify misunderstandings, discuss, and solve difficulties and issues. The project team also used a Whatsapp group to facilitate interaction with the participants. It was used to remind the trainees about the assignments and upcoming sessions, share resources, and clarify topics.

Despite a flipped learning approach, most of the trainees came to the sessions unprepared. With the limited duration of the live sessions, the trainers needed to explain the topics quickly. The project team distributed the recording of the Zoom webinar to the trainees so they could catch up with the materials:

> There's another emergency assignment so I got less focused in the live session, but I can catch up by learning from the recorded Zoom video (Consultant, NGO)

This finally led to the synchronous online training (Mode 3) that was implemented and tested for the Zoonotic disease project. The training was mainly delivered through live, digital sessions to meet the COVID-19 related restrictions while maintaining the traditional aspects of training in mode 1 such as face-to-face interaction, trainers guidance, and designated training time.

5.4 | Practices of allocating time

This section identifies practices related to structuring time. This includes timing, duration, and agenda of the training and the behavior affected by these practices. Although project planning specifies the estimated timing of each training, some training sessions were squeezed in at the end of the fiscal year to absorb the remaining funds. Once a date was set for face-to-face training, a reschedule was unlikely. Unlike onsite training, online courses or training are easier to reschedule as it does not involve non-refundable costs such as flight tickets, hotel bookings, or meals. During the implementation of the synchronous online training (Mode 3), each of the scheduled sessions was rescheduled at least once.

Mode 2 (asynchronous online course) is not affected by this because of its self-paced design. This design was supposed to allow the health staff to learn at their convenient time, pace, and place. Health staff commonly fill multiple positions in their office, therefore without a particular time allocation, staff prioritized other assignments over the course. Flexibility did not seem to be an advantage that health staff valued. The staff mentioned the lack of pressure and being held accountable as their reasoning:

> Online training has to be scheduled. Before this project, I attended online training with webinars. There was a timeline, there were face-to-face sessions through webinars. We could ask our mentor in the webinars, although it was just once or twice a week. Then there was an assignment. There was usually a time frame, so we were forced to attend. (Data Manager, DHO)

Traveling to onsite training can significantly reduce the effective training time (e.g., a 3-day training might only have 11–12 h of training in total due to these travel days). Both modes 2 and 3 do not require travel days as the stakeholders can participate remotely.

Although the time to complete the online course in Mode 2 was estimated to be 3 weeks with 3–4 h of work each week, some participants completed it in a few days. On the other hand, for Mode 3 it was decided to enforce splitting it up in smaller chunks to avoid "zoom fatigue" (Wiederhold, 2020) among both trainers and trainees. The training hours were reduced from the usual 8 face-to-face hours per day for 3 days, into 3 h per day for 3 days. Sessions were recorded so they could be revisited later, and this allowed the trainers to cover more ground quickly. Participants worked on assignments between the sessions, and there was a WhatsApp-group for support outside "lecture hours."

In Mode 1 the participants were "isolated" in an environment where they could focus on the training and avoid multitasking with other assignments. This taken-for-granted practice changed drastically during the adoption of the asynchronous online course (Mode 2), where

deadlines, schedules, or instructor-guided live sessions/webinars were absent. Mode 3 partly addressed this challenge, though the COVID-19 response was prioritized.

> Seems like only a few will attend today's session because some colleagues have conference videos planned for preparation of COVID immunization training. All these instructions are sudden. (Data Manager 1, EPI Ministry of Health)

The findings for the three training modes are summarized in the table below. Two conflicting institutional logics emerge. They are onsite training logic and online training logic. These two are associated with the first two modes of training conducted. Their differences are rooted in assumptions of time and space, that is, how to organize training. The third mode of training resulted from conflicts between these two logics, and how they were resolved in the particular context in Indonesia. In the next section, we discuss how this conflict played out. These practices are summarized in Table 3.

6 | DISCUSSION

In-service training is an established institution in the Ministry of Health, with a set of practices and social activities, from its preparation, planning, and implementation, to its evaluation. This article attempts to understand the shift from onsite to online training by using an institutional lens. Our previous analysis summarizes this process as tensions between two different institutional logics; the onsite training logic as established in the ministry, and the online logic as promoted by the technology and associated practices and literature. We identified four broad areas of practice in the process. Within the areas, some practices were resilient enough to influence the online training. The in-service training was reinstitutionalized as a synchronized online training. Following are the changes in these areas.

6.1 | Changes in budgeting

The budget arrangements remained the same across the observed training modes. Regardless of how the training was conducted, budgets assumed trainees and trainers were gathered in one venue to conduct face-to-face training. In Mode 2, the Ministry of Health had already allocated a budget for on-site training and wanted to avoid low-performance assessment by the financial partner, and hence potentially lose funding. Therefore they continued doing the onsite training while introducing the online course when they trained onsite. A practice of "spend what you have to ensure the budget item is renewed next year" was prevailing, which is not directly linked to an onsite or online logic, but hints at an overarching logic of bureaucracy and ICT4D project management, which nevertheless was closely associated with the onsite training practices.

Further, both the government budgets and budgets from donors did not change despite the restrictions on social gathering and travel occurring from Mode 2 to 3. The inertia within the budgeting area from one mode to another is rather expected. Government budgeting is within the bureaucratic domain and changes tend to be slow and inefficient (Effah & Nuhu, 2017). In addition, the mode of funding was determined by the international donor organization. Such asymmetrical power relationships in ICT4D projects were also found by Ismail et al. (2018).

Although during our observation the budget did not reflect the change, organizations within the in-service training institution responded differently. For example, the local university could repurpose training funds with some flexibility. As online training would not necessitate per diem to cover meals and other costs associated with physical participation, the university instead instituted allowances for internet access costs. A causal relationship between per diem and training participation, as noticed by Sanner and Sæbø (2014), was not investigated in this study.

The slow reaction to reallocating the onsite training budget to online indicates that the Indonesian government is hesitant to make permanent changes, instead of waiting to return to "normal" onsite in-service training. In regards to the transition from Mode 1 to 2, the idea of adopting online training was bought in part because of the potential budget reduction. No coercive, mimetic, or normative pressures were at play on the budgeting practices. In addition to the inertia pointed out previously, at the moment of the online course introduction, the onsite training budget persisted and no online training was available. Therefore the government felt that it was not critical to switch to online training. By not encouraging online training, adoption and use of the online course remained low. This low use and demand impacted the government not budgeting for online courses.

For Mode 2 and 3, the pandemic caused a sudden change that Greenwood et al. (2002) called a jolt. The jolt has destabilized the practices of traveling and onsite meetings, but not the planning practices—and in our context—budgeting. While donors have responded quickly to the pandemic through allocating funds for COVID-19-related health services, their training budgeting practices are aligned with a pre-corona situation.

6.2 | Changes in scaling

Public health sector is inherently hierarchical (Effah & Nuhu, 2017). In the field of in-service training in the Ministry of Health, this typically means that staff at higher levels are supposed to guide and supervise those at lower levels, and also that they would need different skills. In the context

of HIS, higher-level staff would need more competencies in data extraction and visualization, for example, while staff at the district level are assumed to primarily work on data entry. Hence, when new knowledge is required within the whole organization, differentiation of time and content is part of how to scale training. Coupled with this is the established practice of cascade training.

When the first online training was implemented, there was no cascading of competencies as everyone had to follow the same curriculum. For the Mode 3 (synchronous online training), this was changed so that the various participant groups would get customized training curricula depending on their needs and daily tasks with the new system.

Other channels for training enabled through internet technology do not fit into this hierarchy of knowledge, hence these were not exploited by the Ministry of Health. Reports that cascade training can be ineffective and problematic (Mormina & Pinder, 2018; Mukherjee, 2015) do not alter the long-lived institutional assumptions. Hence, the country-wide online course was handled as an add-on to the face-to-face onsite training in Mode 2, and the online training in Mode 3 was designed according to the cascading principle.

6.3 | Changes in organization of training

The training organizers need to design the in-service training to support the trainees to undertake the learning process in the most effective way. This is needed so that the in-service training can deliver the required knowledge and/or skills. Data around the learning experience, training outputs, and adoption by the trainees were used to inform how in-service training is structured in each mode.

The structure of Mode 1 training is facilitated by the physical proximity and the temporal synchronicity of the participants and trainers. This translates to direct and isolated interactions. The trainers can explain, demonstrate and guide in person and in real-time. The participants can observe, practice, and question the learning topics. The training tools in this mode include lectures, demonstrations, discussions, assignments, and quizzes.

The direct interaction element of this mode of training is heavy. In addition to the in-class interaction, the participants often socialize after hours, be it for group work or exploring the city where the training is taking place. In-service training has traditionally been seen as a social event in addition to a means for personal development (Schaefer et al., 2019).

Most of these practices were abandoned in Mode 2. With the self-paced online course, no travel nor physical gathering is required. The familiar setting of a classroom was exchanged with an unknown learning management system. No interaction between participants or with the trainer was enabled. Instead of a live trainer, explanations and demonstrations were provided through pre-recorded videos. The interactions between participants and trainers are limited to the asynchronous discussion feature within the learning management system, usually using texts. The training tools are generally similar in principle but different in experience, where the interactions are facilitated by the internet and are often delayed.

This change in most of the practices would imply a radically changed training institution for the learners, and there does not seem to have been much pressure to back up this radical change. Such changes require legitimacy in order to be institutionalized (Dacin et al., 2002).

Mode 3 (synchronous online training) is a combination of a response to the pandemic-imposed restrictions and a lesson learned from the failure to implement Mode 2. Instead of reinforcing Mode 2 to work, the Ministry and its partners decided to conduct a more hybrid practice. Mode 3 takes one step back from Mode 2, it reintroduces interaction, although through electronic form. Months into the pandemic, the health workers to some extent have become more accustomed to substituting on-site meetings with online.

The flipped learning model is essentially one more new practice, that of preparation before training. The health workers do not easily change their practices, which in this case meant that the participants did not invest their own time before training started. Without any enforcement of this new practice, it failed. Participants arrived unprepared for the training therefore the method became ineffective. Additional new practices such as recording the synchronous session and distributing the recording were introduced to adapt to the shorter training time discussed in Time Allocation (Section 5.4 and 6.4).

The pandemic-related restrictions have been speeding up the adoption of online technology for training. At this point, implementation-wise, there is a shift from "having the choice to conduct blended" to "obligation to do fully online."

Silva (2007) found that institutionalization of new practices required both governmental decisions and local consultants who could make sense of the policies. In our case, a lack of local adaptation was observed, since the policies seemed incompatible with local practices.

6.4 | Changes in time allocation

This issue also brought a dramatic change in practice between Mode 1 and 2. From completely scheduled training enforced by the trainers on-site, external scheduling was abandoned, and the learners had to manage their own time. The trainees would have to decide to spend their time learning the IT system. There might not have been clear incentives for doing so, hence the practice of self-management of learning time was not taken up by the Ministry staff.

The time spent traveling during Mode 1 was saved. For participants, this institutional change might have been unwanted, since too many health workers, travel paid for by the state would feel like a sign of appreciation (Sanner & Sæbø, 2014).

Since few health workers actually completed the Mode 2 course, the institutional change for health staff is that the Mode 3 (synchronous online training) takes longer than the previous, onsite course. Since very few take a specific course twice, those taking the Mode 2 course would probably not have personal experience with the face-to-face course on the health information system. Hence, a change in their practice will most likely not occur.

6.5 | Summary of results and discussion

Although the project was motivated by the potential of online courses (see e.g., Behrend & Thompson, 2011; Economides & Perifanou, 2018; Lim et al., 2007), it failed to reap the expected benefits. Especially the asynchronous Mode 2 suffered from the classic low uptake (Chrysantina et al., 2019) and low completion rate (Jobe & Hansson, 2014). The challenges experienced can be partly explained by the conflicting institutional logics of onsite and online training. The logics manifests itself as different practices around budgeting, scaling, and organizing training, as well as managing time. The in-service training institution in our case followed an onsite training logic, and both organizations, trainers, and trainees held associated assumptions that made a shift to an asynchronous online training, following a different logic, difficult and in the end unsuccessful. This study adds to the literature on online training in exploring what has earlier been attributed to cultural and contextual factors of online training uptake (Ali et al., 2018; Andersson & Grönlund, 2009). We argue that these rather vague terms can be successfully examined through an institutional logics lens.

A hybrid model emerged from the resolution of the conflicting logics, incorporating aspects of both identified logics. While this was held online, partly due to the pandemic which hindered physical meetings, the synchronous nature and instructor-led component persisted. This is aligned with previous studies showing the preservation of the onsite instructor-led component in blended online training (Justinia & Salaby, 2014; Garley et al., 2016). The interplay of conflicting logics may complicate efforts to change practices in planning, designing, organizing, and running online training as advocated by Chio (2020).

7 | CONCLUSION

This study has observed how the in-service training institution in Indonesia remained relatively stable despite changes in technology used and the COVID-19 pandemic. This article contributes to the literature on online training, as well as the training practices within the capacity building in ICT4D projects, by showing how the two institutional logics associated with onsite and online training interacted over several years, with an added "jolt" provided by COVID-19, to produce a synthesis of logics. A hybrid solution associated with the latter projects, applying structures and time management resembling onsite training to an online webinar, emerged as a result of the tension between the institutional logics. The logic of onsite training continued to be dominant throughout the period and most associated practices were carried over to the new paradigm of online training.

The underlying institutional arrangements around training make the adoption of either self-paced online courses or a more structured online training difficult. Although the project team from the universities and NGOs brought the ideas to adopt IT for the Ministry of Health's in-service training, the logics around onsite training was strong and supported by structures that were unforeseen by the team members. This led to *prioritization by participants* being an important theme. The preexisting in-service training practices supported the onsite training by providing time off from daily work to go to venue-based training. These practices do not really help the self-paced online course that required health staff to take time to learn independently. If the same institutional arrangement prevails, health staff will still find it difficult to prioritize. Instead of motivating or rewarding, online courses or online training became an additional burden for health staff. As a recommendation for practice, to institutionalize a self-paced online training, some legitimation support such as course accreditation or credits accounting for a work promotion, and structures for securing time should be considered.

Challenging a long-established institution takes time. An unresolved question is whether this online in-service training will prevail after the travel and gathering ban associated with COVID-19 is lifted.

Our study only looked at the group training process within the capacity building, therefore, other components of the capacity building such as individual or institutional level or financial resource building were not addressed. Although these coexisted with the three training modes being examined. Our analysis is also focused on the public health sector, therefore it could be interesting to know how institutional logics shapes online training in other sectors. The organizational setup and how this can contribute to institutional complexity were also not examined. Future work could look at conflicting institutional logics arising from how international health partnerships are organized (Plamondon et al., 2021; Wendland, 2016). Such research could find inspiration in recent ICT4D research on organizational hybrids (Heeks et al., 2020).

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CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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