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Assessing E-Learning Agility in the Indonesian Public Sector

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Abstract. E-Learning has been used extensively in the public sector during the coronavirus pandemic. However, the lack of IT capability has led to irresponsive user experience measures. Agile bureaucracy is often mentioned as a set of values to respond to uncertainty during the robust demand of online interactions. Previous studies including systematic literature reviews have suggested that agile bureaucracy in the public sector is hindered by a culture of hierarchy and a lack of IT competency. Using empirical data that was derived from actual experiences, this study aimed to: 1) investigate participant perceptions of agility in e-learning for civil servants in Indonesia; and 2) recommend interventions to deal with the hinderances and prerequisites for agile bureaucracy in e-learning. This research collected data through open-ended interview questions and online surveys, and data were analyzed using the Atlas.ti software. This study considered several agile bureaucracy principles in e-learning, such as continuous improvement, collaboration, merit-based management, responsive and bottom-up decision making, and flexible support. The findings suggested that bottom-up decision-making and competency-based human resource management were two critical challenges in agile e-learning provision. Further, this study recommends practical measures that can be taken by e-learning providers to solve these challenges.

Keywords: agile bureaucracy, training, competency development, e-learning

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1. Introduction

E-learning has eased and cut cost in training delivery, however, participants often experience burnout due to lack of monitoring and supports (1). E-learning implementation problems need to be addressed particularly in the lack of ICT capabilities (2). (3) suggests agile values are suitable to address user demands in digital age. Using ICT with the approach of agile learning has contributed to learning outcomes (4). (6) called to investigate the process and prerequisites of agile e-learning in increasing the quality of training delivery as the topic still under-researched.

Earlier researches have examined values of agile bureaucracy, such as: bottom-up approach in decision making, ICT employment, trust in collaboration, responsive, and open to change are suitable to address unpredictable targets (5,7,8,9). Agile approach

is suggested to be an effective mitigation during a crisis like a pandemic situation (10). In the e-learning context, agile e-learning is assessed through the use of ICT, intense interactions to engage, support and motivate to participants (1, 11). Agile e-learning also requires known competency gap and internalized agile culture (4); evaluations and monitoring based on student's satisfactions (12, 6); and interactive database (6).

This study focuses on e-learning in public sector context. In the public sector context, previous studies have noted three barriers of agile bureaucracy in governance such as strong hierarchy culture, unpredictability, and the lack of IT infrastructure support. (5, 8, 13, 14) argue that the current bureaucratic culture in government is unlikely to favor agile bureaucracy values because of the strong control and hierarchy. Hierarchy decreases the speed of decision-making and it is suggested that small team autonomy helps to increase the agility (15). Based on a grounded research, (15) proposes some interventions that can be considered to deal with the culture of hierarchy. Those interventions are: enabling small team to work autonomously, stimulating the employees to learn new skills, and hiring team members with different competencies and skills (15). The agile bureaucracy also needs to be familiar with unpredictability which is the drawback of the approach regarding to the dominant fixed government culture (16). (17) has also evaluated that ICT barriers, legal issues, and manpower barriers remain challenges in implementing agile digital governments in particularly Indonesia.

Previous studies on agile bureaucracy that employed systematic literature reviews indicated that the strength of the evidence is low, lacked of practicality, and lacked of study design details of the papers investigated (8, 18). Past studies using different methods such as qualitative method seem to be insufficient in investigating the practicality of agile bureaucracy, the effectiveness, the impact, and how the barriers are solved (3, 7). (3) suggests future studies to investigate measurement of agility in bureaucracy, factors that support agility, bureaucratic culture adaptation, relevant competence, decision-making process, and the outcomes. (8) recommends further studies should focus on describing a model for agile bureaucracy implementation comprehensively in different services. (7, 8, 9) indicate agile values are possible to be implemented in bureaucracies to increase public values if further examinations could investigate the effect of agile bureaucracy values toward digital government transformations in different countries as public demands changes rapidly in this digital era.

This study answers the suggestions of (8) and (6) by describing a model of agile e-learning by using mixed method from actual experiences. This research aims to: 1) Investigate the perceptions of participants on agility in e-learning for civil servants in

Indonesia, 2) Recommend interventions to deal with the hindrances found and prerequisites for agile bureaucracy in e-learning provision in Indonesia. Using a quantitative-descriptive method, (19) suggested that e-learning in Indonesia still faces challenges such as in application development and facilitator competency development. Assessing Indonesia provides an explanation how e-learning in public sector promotes agility where there are few resources. E-learning for civil servants is the current fast and financially effective long-distance competency development method by using ICT in a hope to increase public service quality (20, 21, 22).

This study adapts five principles of agile bureaucracy as suggested by previous studies on agile bureaucracy and agile e-learning, essentially:

1. Continuous improvement

There are several methods of e-learning, one of them is agile learning design. Agile learning design, unlike the famous one, Analysis, Design, Development, Implementation, Evaluation (ADDIE) that is non-linear model that concentrates on specific tasks. Agile learning model cuts costs and duration more than ADDIE approach (6). In the non-linear approach, monitoring and assessment at every stage then continuously improved is crucial (6, 12). The key in agile e-learning is iterative feedback for incremental development (23). Incremental improvement can be done by breaking a project in different cycles help to improve continuously (7). Some measures for continuous improvement that can be taken are: enabling feedback routinely from users, following up the feedback by bottom-up and continuous approach (5, 7, 9). (18) suggests quick wins can be a tool for continuous improvements.

2. Collaboration

Scheduling development sessions with clients periodically in short time-scale also helps the collaboration for more agile response (24), particularly in giving supports for students, addressing problems, and engaging experts (6, 1). (8) argues that collaboration requires clear coordination lines.

The focus in a collaboration process is openness, therefore, the mechanism should focus on those (5, 7, 9). Trust is also an essential prerequisite in collaboration (5, 9). Trust needs to be followed with growth mindset because everyone in an organization makes mistakes to learn, therefore, leaders should focus on effectivity and improving performances (5).

3. Competency-based human resource management

One measure of human resource management that supports agile bureaucracy is competency-based recruitment, when the team members are skilled, cutting employees would not be necessary (25). Identifying competency gap and engaging different experts can also be the interventions to increase the quality of e-learning delivery (6, 7, 12) recommends that recruiting talents that are competent in ICT from private sector to public sector might strengthen agile bureaucracy.

4. Bottom-up approach in decision making

Using 30 qualitative data from interviews in business sectors (15) suggests breaking down the whole team to small groups helps to increase the coordination pace. Therefore autonomous teams need to be supported so they can evolve (15). Connecting autonomous team can be executed by simple decision-making process. Agile bureaucracy needs a bottom-up decision-making process and involve more front-liners as they deal with users most of the times. Therefore, front-liners know most of their needs and coordinate well (9). During coordination process, the bottom-up approach enables minimum implementation control, and open and fast decision-making (5, 9). Those are important because a long hierarchical top-down process hinders the ability of the employees to decide at the right time (5). Other interventions that promote fast decision making are clear procedures, clear feedback mechanism (5) and adaptive policy for digital needs (7).

5. Flexible infrastructure and financial support

Technological infrastructure is crucial to make the agile process coordinated well (10). Agile culture is often argued of its little possibility in public sectors because of the procedures of financing and infrastructure provision take longer in public sectors than in private sectors. However, it is not impossible as some public practices show that flexibility is crucial in financial and infrastructure planning policy that enables changes any time (7, 26).

2. Method

This study employs mixed method with various data sources. A mixed method study analyses data using triangulation design by collecting quantitative data and qualitative data simultaneously and use the qualitative data to validate the quantitative finding (27). In this study, data triangulation was conducted by comparing the closed and open-ended answers in the questionnaires and interviews.

Informants of the questionnaires were selected randomly among e-learning providers and participants. This study takes samples of 32 people from e-learning-based training providers in NIPA and 38 e-learning-based training participants. However, only 30 questionnaires were answered by the providers, and 36 were answered by the participants. Informants are contacted using a formal letter accompanied by informed consent and a questionnaire, each of which was given seven days to complete and return their responses. Further, researchers selected nine informants purposively based on their positions and e-learning provision experiences. The unit of analysis in this study is divided into two, namely e-learning providers in NIPA and participants/ alumni of e-learning based training.

The qualitative data are categorized from the open-ended answers and the interview results of training providers using Atlas.ti according to the five agile bureaucracy principles such as continuous improvement, collaborations, competency-based human resource management, bottom-up approach, and infrastructure support. In analyzing numbers, researchers compiled two types of questionnaires consisting of open questions and statements using a Likert scale format with five response options, namely Strongly Disagree (1), Disagree (2), Doubt (3), Agree (4), and Strongly Agree (5). Each questionnaire is aimed at administrators of e-learning based training (29 statements and two open-ended questions) and participants / alumni of e-learning based training (13 statements and two open-ended questions). The statements in the questionnaire are analyzed using median to describe the central tendency. In analyzing ordinal data, median is more appropriate than mean because mean is less susceptible to data outliers and mean does not give meaningful value to the level of perception (28, 29). An examination suggests median also works better than mode in representing ordinal data (30).

This study uses descriptive statistical analysis because it considers the research objectives, namely describing the perceptions of stakeholders in the application of an agile bureaucracy. The data analysis compares findings of closed-ended answers and open-ended by categorizing data, identifying the finding, comparing the data with the previous studies, and drawing implications.

3. Results and Discussions

1. **Continuous improvement**

Based on data from the Likert scale, informants from both providers and participants agreed that the implementation of e-learning-based training in NIPA had implemented

the principle of continuous improvement well. Both participants and providers agree for the clarity of complain and follow-up mechanism. This is indicated by the median score of providers and participants answers which are both in number 4.

Table 1: Providers and Participants Perceptions on Continuous Improvement in E-Learning Based Training in NIPA

Perceptions of providers		Perception of participants	
Median	**St. Dev**	**Median**	**St. Dev**
4 (Agree)	0,69	4 (Agree)	0,83

Source: Obtained from the primary data, 2021

Based on the qualitative data, the principle of continuous improvement can be implemented due to several measures. First, the implementation of complaint management. This is shown by providing platforms for complaints that are accessible, varied, and supported by the use of information technology. The most accessible media is the WhatsApp Group that enables coordination among trainees and several persons in charges (PICs) from the providers. Other alternative complaint platform is through the website, Learning Management System (LMS), through trainers, directly to the technical team during the training activity, and can also be through the training evaluation surveys at the end of the training. The complaint mechanism was informed openly to the trainees since the beginning and during of the training activities. Furthermore, complaints are responded to and followed up quickly by the providers. They discuss all problems in conducting training and responds in real-time on the WhatsApp Group.

These findings are in line with several previous studies. (16) stated that continuous improvement needs to be accompanied by the development of established software applications that easily connect all stakeholders. In the context of this case, several media for submitting complaints based on information technology, especially WhatsApp Groups, have become a real-time media that can easily connect stakeholders, both between participants and providers, as well as between elements of training providers, so that enables the follow-up too. Likewise, several previous studies stated that some efforts to implement continuous improvement are activating regular feedback from users, following up on feedback with a bottom-up and sustainable approach (5, 7, 9), all in line with the findings of this study.

Second, there is an evaluation process of training that is carried out regularly at the end of every training and are then followed by enhancement to the implementation of the next training or activities in the following year. However, complaints and suggestions from stakeholders cannot be followed up quickly. These usually occurred when the complaint is related to the authority of a third party or with an external unit that is beyond

the control of the training providers and thus requires more complicated coordination. On the other hand, a small number of informants stated that they were not informed about the follow-up process. This needs to be improved in the future.

2. **Collaborations**

Based on the data from the providers described in the Table 2, at least the majority of the providers perceive to agree on the overall representation of collaboration agility. This can be seen from the median score of 4. Providers agree as the median value is 4 for the working trust building mechanism, shared-vision, and conflict resolution. The median on the participants' responses shows a higher median of 4.5. Data from the Likert scale corroborates with the qualitative findings as categorized on Atlas.ti. Frequently, interviewees have expressed that they do not face significant challenges during the collaboration process internally and externally. Qualitative findings describe a broader view from the previous studies. The findings from the providers denote that collaboration is determined by scheduled intensive communication. There are other tools in collaboration that are described by interviewees such as 1) Trust building mechanism such as routine participative meetings, prayer forum to support team members who are sick, pre-covid outbound activities, and appreciation from the leader and team members when anyone does a great job, 2) Shared vision among stakeholders that is translated into the understanding of task from each stakeholder, 3) Division of labors i.e IT application team, substantive facilitators, small teams that handle different types of training, and administrators; 4) IT internal tools such as instant messaging group among providers and participants and LMS that enable real-time reports and feedback; 5) Openness in budgeting, project progress, and policy. Those findings indicate that trust building and established IT system that enable real time feedback are crucial for collaboration.

However, other providers have expressed their concerns relate to the hierarchy culture. Hierarchy is shown by such as the inability to communicate ideas directly to high-level officials and long vertical control lines. The informants perceived those have hindered the agile process. Therefore, the hierarchical coordination lines contribute to longer time for decision-making and applying new innovative ideas. This finding corroborates with (5, 8, 13, 14) argue that the current hierarchy in public sectors is seen as one of the concerns in agile bureaucracy.

The culture is not seen as the only concern, but also the ICT readiness. Providers in the regional training providers expect the headquarter should have established a Massive Online Open Course (MOOT) system before they apply as the regional providers think

they are not competent enough to address and troubleshoot MOOT technical problems. This later is elaborated in the infrastructure support and competency-based human resource management.

From the training participants' point of view, they have perceived that the communication procedure to give feedback for providers is clear and the providers are responsive even though there is a hindrance in administrative procedures, IT system errors, and grading systems. However, those challenges are later elaborated in the decision-making dimension and IT support.

Table 2. Providers and Participants Perceptions on Collaborations in E-Learning Based Training in NIPA

Table 2

Perceptions of providers		Perception of participants	
Median	**St.Dev**	**Median**	**St. Dev**
4 (Agree)	0,80	4.5 (Strongly gree)	0,88

Source: Obtained from the primary data, 2021

3. Competency-Based Human Resource Management

Table 3: Providers and Participants Perceptions on Competency-Based HRM

Perceptions of providers		Perception of participants	
Median	**St. Dev**	**Median**	**St. Dev**
4	0.85	4	0.83

Source: Obtained from the primary data, 2021

In table 3, the median is 4 for general competency-based human resource management. This shows that e-learning providers tend to agree that a merit system has been implemented in HR management in their work teams, with a relatively centralized distribution of data. They also agree that the pattern of leadership in the work unit has encouraged the application of merit to individual employees in the work team. Providers agree that they perceive their team members are competent, appreciated, and developed.

The response of the providers was quite diverse when answering open-ended questions. In short, the e-learning provider considers that leaders respond well to policies

related to e-learning in the form of implementation at the technical level of implementation. However, the decision-making process tends to be top-down process and requires close supervision in expressing requests for technical directions of conceptual policies.

Furthermore, those related to the sub-dimension of competence are stated in the theme of HR competence which includes providers, teachers, and participants who also get a balanced score, between negative and positive. E-learning providers assess that there are still many improvements of competency needed such as the ability to operate electronic-based teaching platforms and to create attractive and interactive teaching materials. This condition is in line with information from interviews that there are still trainers and facilitators who have difficulty in compiling digital teaching materials and are forced to print the results of participant evaluations, assess manually, and re-enter the results into the LMS, even though everything should be done directly in the application.

At the level of technology providers and participants, there are still difficulties in operating e-learning applications. From the results of the interviews, it was found that there were participants who had difficulty uploading the tasks that had been done into the LMS. Some can operate LMS on their computers using a wifi network, but the mobile data does not support it effectively. The solution to this problem is to provide special assistance from the providers to trainers, teachers, and participants who need technical facilitation until they can do it independently.

Lacking competency among technical administrators creates dependence on certain individuals, which is exacerbated by the large number of e-learning activities resulting in a shortage of competent human resources. Another form of dependence was found from the interview results, namely the limited understanding of the providers of the MOOC because the application platform is still new, making it difficult for technical implementation in the field.

Providers also consider the leadership and organizational bureaucracy factors as inhibiting factors. Centralized decision-making is seen as an obstacle, i.e. the need to ask higher leadership for direction first for problems that can be decided by lower management levels. In addition, accessibility to leaders is also in the spotlight. Some think that leaders are difficult to contact because of their busy lives, but some find it easy to communicate through messenger applications. It can be seen from the data, that many events show the dominant role of the leader which hinders the quick decision-making process. This dominance can specifically lead to dependence on the highest leadership, which can be influenced by the strong individual character of the leader, the weak competence of subordinates, and a highly hierarchical bureaucratic culture.

The training providers have perceived that the obstacles in decision-making are not only caused by a lack of knowledge on e-learning and weaknesses in ICT skills, but also the behavior of the Operators in carrying out activities, such as creativity and working pace. Looking at the feedback, it can be seen that a specific list of competencies is needed for HR Operators, to be able to carry out e-learning activities effectively. Some interventions that can be taken are: identifying the need for competency development for e-learning providers (31), talent development (25, 31, 32, 33), and providing incentives for those who have high performance (7).

e-learning participants see that the Operator has adapted to changes. Meanwhile, trainers and facilitators were highlighted regarding several problems in adapting the use of electronic media in learning, both in the form of operating platforms and making teaching media which were considered monotonous.

1. Bottom-Up Approach in Decision Making

In contrast to the analysis on the other four dimensions that confirm the perceptions given by the providers and trainees, the analysis on this dimension is based more on the perception data of the training providers. This is because the decision-making process in the Training Department can only be understood by those who work in it.

Table 4 shows that generally, the median for all indicators of the bottom-up decision-making dimension is 4. Providers agree that they perceive the decision-making uses a bottom-up approach and participative meetings. However, some providers score 2 (disagree) and 3 for allowing small teams to make decisions based on their rights and accommodative leaders. Based on the Likert-scale data, most informants mentioned that their departments have been implementing the fast and responsive decision-making process, particularly for the internal affairs of teamwork and department. These phenomena were justified because according to some informants the communication among team member as well as employees in the department was well established; a deliberative mechanism in the teamwork and department level have been regularly developed; and the availability of various channels of communication utilized such as face-to-face meeting, WhatsApp Group, and telephone. However, communication challenges were mostly happened across departments and with headquarter as well as with external parties. Overall, this research found that the decision-making process which involved internal parties of the teamwork and department could be conducted fast and responsively, but those which involved external parties and headquarter office faced challenges.

The fast and responsive decision-making process is determined by several factors including the size of the team. This research found that small teams have been assigned to conduct the e-learning in NIPA. Several interviewees mentioned the existence of small teams contributes to the fast and responsive decision-making process in conducting e-learning. This finding corroborated with the study of (15) which suggested breaking down the whole team into small groups to help to increase the coordination pace.

Besides its size, another factor contributing to the agility is the size of the authority of the small teams. About 75% of informants stated that the small teams have already been given autonomy to decide while 18.8% of informants mentioned that the formation of a small team has not yet been followed by proper authority to make decisions and the rest percentage of informants was doubt about it. From the results of the interviews about team size perceptions, it was confirmed that the existence of this small technical team has contributed to the speed of decision making, especially for matters of a technical nature and within the internal scope of the department.

However, the existence of Standard Operating Procedures (SOPs) in coordination sometimes cannot be used as a guide in decision making when the existing policies are no longer following the demands of practical needs in the field. In this context, the speed of the decision-making process becomes constrained. This means that there was limited agility in the decision-making process particularly in terms of substantial and strategic aspects. These limited autonomous teams restrict the development of the small team as mentioned by (15).

Providers have also perceived those decision-making processes are transparent and participative. The development of this participatory culture can also be seen from the involvement of the center or other departments in the implementation of training, for example, Center for Technology of Competency Development and Center for Data and Information System for IT management, there are also weekly meetings with leaders and communication channels in the form of messenger groups that are open from participants to providers. This finding follows the study of (7) which pointed out the importance of transparency and openness.

Table 4: Providers Perceptions on Bottom-up Decision-making

Median	St.Dev
4	0.95

Source: Obtained from the primary data, 2021

5. Financial and Infrastructure Support

Table 5: Providers and Participants Perceptions on Financial and Infrastructure Supports in E-Learning Based Training in NIPA.

Perceptions of providers		Perception of participants	
Median	**St.Dev**	**Median**	**St. Dev**
2	**0.84**	4	0.84

Source: Obtained from the primary data, 2021

In general, it can be seen in Table 5, that the perception of e-learning operators regarding financial support and the provision of flexible ICT infrastructure is still at the tendency of the central value of disagreeing with a median of 2 (SD 0.84). Providers do not agree that they perceive the financial planning and infrastructure support are flexible. However, participants agree that the ICT infrastructure is sufficient. Positive responses emerged regarding the use of technology that had been implemented for a long time, even before the e-learning policy. The interview results from the informants reinforce the criticism of the weak quality of IT equipment, the quality of the internet network, and some technical problems in the LMS.

As for e-learning participants, the LMS is considered to have been able to work well, although its capacity needs to be increased. The use of a messenger group as a supporter of activities is also considered positive. Meanwhile, the issuance of certificates is considered to still need to be improved. The condition of IT infrastructure in the implementation of e-learning that still needs a lot of improvement is overcome by carrying out most of the work processes in the office space because the organization provides adequate facilities and infrastructure (eg computers with better specifications, speakers, and internet connection) as well as access to IT technician in the event of a breakdown.

Regarding the budget, e-learning providers see it as a component that supports the implementation of the training, although it needs to be more flexible. In the interview, the informant also stated that the budget is too rigid, for example when the Covid-19 pandemic forced the full implementation of e-learning, thus requiring computer purchases to host virtual meetings, paid zoom accounts, covid kits for participants, and internet subsidies for e-learning participants. This could not be fulfilled easily. Especially with changes in the financial system which have become an additional workload for e-learning providers. The quality of the internet network is also equally assessed as a supporting factor, but in reality, it is still not adequately fulfilled. This finding represents the inflexibility of financial aspects and activity planning hinders the agility of the bureaucracy in the implementation of e-learning.

Cross Dimensions Comparison

Based on the findings and analysis of each of the dimensions of the Agile Bureaucracy above, several factors were found that strengthen and hinder the process of implementing agile e-learning. These factors can be described in the table below:

Table 6: Agile E-learning Dimensions Cross Comparison

Dimensions	Strengthening Factors	Hindrances of the dimension
Continuous Improvement	Accessible, varied, informed, and real-time complaint mechanism. The mechanism is informed to stakeholders. Routine evaluation.	Related to a third-party authority, delaying follow-up on complaints/inputs. Not informing stakeholders of the results of the follow-up to their complaints/suggestions
Collaboration	Trust building mechanisms. Having a shared vision. Regular meetings. Real-time coordination applications.	Competency in operating ICT systems has not been evenly distributed, thus hampering the collaboration process. Hierarchy dominant culture, so that there is no equal position in the collaboration process, but collaboration still tends to be directive. This has an impact in the long run.
CBHRM	Knowledge sharing	Insufficient IT competency. Infrastructure constraints, participants are unable to upload tasks in the LMS.
Bottom-Up Approach in Decision-making	Responsiveness of decision-making. Regular meetings for decision-making. Small teams contribute to quick decision-making. Open communication channels for participants and providers There is a categorization of types of decisions based on the level and the party who has the authority to make decisions at each level.	Communication across work units/central/and external is still constrained The authority of small teams are limited. Several rules are not relevant to the needs in the field. LMS and MOOC management is still centralized. There is a dependence on decision making from subordinates to superiors due to unequal information.
Flexible infrastructure dan financial support	-	Budgeting flexibility is still minimal. Infrastructure is still lacking, especially IT hardware and software.

Source: Authors' analysis based on the obtained primary data, 2021

4. Discussions

This study shows the adoption agile bureaucracy principles in e-learning in Indonesia still needs to be improved particularly IT competencies, infrastructures, and organizational hierarchy. 13 recommendations were identified which were divided into seven locations in Figure 1. These recommendation are to respond the insufficiency of previous

studies of (3, 7) in investigating the practicality of agile bureaucracy, the effectiveness, the impact, and how the barriers are solved.

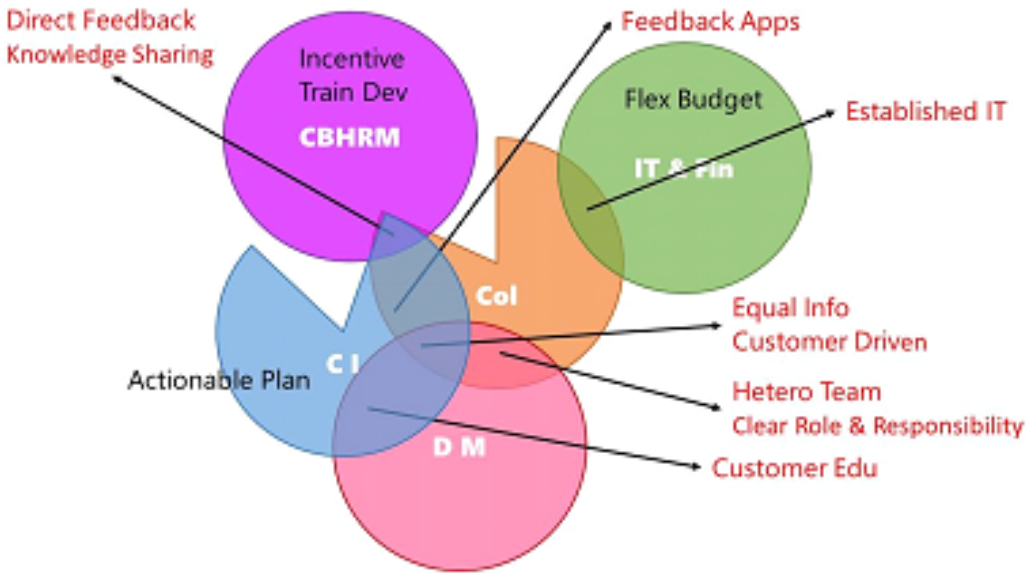

Figure 1

The first is a recommendation to deal with challenges faced by three dimensions, namely: Continuous Improvement, Collaboration, and Competency-based Human Resource Management (CBHRM). In the three-dimensional slice, the first recommendation is offered in the form of creating an open culture in providing feedback to colleagues. Providing supervisor-subordinates' feedback is common, but this research finds that it is important to establish a culture of openness and egalitarian.

The second is a recommendation to improve the dimensions of continuous improvement, collaboration, and bottom-up decision-making. The recommendation given is to provide equal access to information between parties who work together in the implementation of e-learning and to build a culture that makes service users the ”heart” in the implementation of e-learning (customer-driven).

The third recommendations are to improve the dimension of continuous improvement and collaboration. Media development can be used to inform improvements to the implementation of e-learning based on suggestions provided by service users. The intended media can be in the form of applications on the provider's website or social media.

Fourth is the recommendation to prepare an e-learning Information Technology systematically and continuously. This recommendation is placed to accelerate the performance of collaboration and infrastructure and financial support. The existence of an IT system is the main means in implementing e-learning whose creation is

be centered on the Headquarter office in Jakarta, but the implementation must be decentralized to other regional working units and internalized evenly to participants, sending agencies, and other stakeholders.

Fifth is the recommendation for the improvement of collaboration and bottom-up decision-making. The role of small team with autonomy helps to increase the agility. This finding confirms the suggested report by (15). Strengthening division of authorities in decision-making of each level can also be helpful. However, the finding that the small teams can be formed by involving more heterogeneous members in skills and competences is the new finding of this research. It is because the heterogeneity composition can generate a more dynamic and egalitarian environment.

Related to the first recommendation regarding the importance of a culture of openness, this research found that it is important to improve the competence of service users in providing criticism more ethically and intelligently, including the initiative to monitor changes to the criticized system. These recommendations intersect between the dimensions of collaborations and bottom-up decision-making.

Furthermore, this research also found several group recommendations which lies in their respective dimensions. In the collaboration dimension, it is recommended to establish a service user input management team whose task is to translate the criticism into a feasible/implementable technical plan. In the CBHRM dimension, suggestions are given in the form of providing incentives to providers and other stakeholders who show high achievement and/or performance so that they become behavioral reinforcement for the individual as well as for others. In addition, it is recommended to conduct competency development for trainers and teachers in producing e-learning materials that have high substantive quality and are attractive to e-learning participants. Finally, for the infrastructure and financial dimension, it is necessary to engineer a system to increase flexibility in budgeting without reducing caution for fraud, for example by providing space for a budget review in the current year involving the Inspectorate to anticipate changes in the implementation of e-learning that have an impact on budgeting and procurement of IT infrastructure.

5. Conclusions

This study corroborates with previous studies in the context of hindrances of agile approach in public sector performance such as strong hierarchy culture and human

resource competencies particularly in delivering interactive materials and ICT competencies. This study also suggests doable interventions to increase the agility in e-learning such as; interactive and real-time complaint mechanism, trust building mechanism through informal meetings, knowledge sharing moments to identify problems and prove support at each stage, and diverse small-teams that enables autonomous decision-making.

The limitation of this study is the data was collected by using survey in a single case. This can only explain people's perceptions not how effective a policy is. This study also generally uses agile bureaucracy concepts not agile e-learning theories. The scope of this study is limited to the situation of public sector training in Indonesia where the e-government development still faces challenges in limited infrastructure coverage, limited data storage and fast band-with. Further studies are necessary to investigate agile process in more developed countries using quantitative method like randomized control trial (RCT) to evaluate how effective a policy is.

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