Pre-service teachers’ agentive projections toward innovation in online English Language Teaching (ELT) classes

Santi Farmasari*; Lalu Ali Wardana; Baharuddin; Amrullah; Mh Isnaeni; Husnul Lail
Universitas Mataram, Indonesia
*Corresponding Author. E-mail: santifarmasari@unram.ac.id

ARTICLE INFO

ABSTRACT

Article History
Submitted: 26 June 2022
Revised: 16 November 2022
Accepted: 18 April 2023

Keywords
agentive projections; ELT innovation; online learning

This study examines the pre-service teachers’ agentive projections toward innovation in online English Language Teaching (ELT) classes. Employing teacher agency theory, this instrumental case study views projections as agentive when they are informed by the students’ ecological aspects (past and present), oriented to solve potential learning problems and improve learning outcomes. The study involved 84 pre-service teachers who were voluntarily asked to fill in a questionnaire, submit a lesson plan, and be interviewed. nVivo Pro was used to organize themes. The study indicates that the pre-service teachers, M=3.81, SD=.590, perceive that innovation in online ELT classes is closely related to the integration of information and technology. As a result, the students’ agentive projections were also oriented to solve technology and internet-based obstacles, added with innovative learning methods. The research findings may become important insights for the development of English teaching and learning in order to provide more capital for pre-service teachers creating ELT innovation in the future.

INTRODUCTION

The rapid transition from offline to online learning amidst the Corona Virus Disease 19 (Covid-19) outbreak has become a testing ground for the capacity and creativity of teachers in adjusting their learning methods (van der Spoel et al., 2020). The unprecedented transition has made teachers’ role more critical in responding to substantial challenges (van der Spoel et al., 2020) and stay innovative in online learning platforms. However, as online learning is forecasted to remain useful in the future (post-pandemic), the conduct of the online learning should not only be oriented in equipping in-service teachers with necessary literacy, but attention should also be directed to preparing pre-service teachers with knowledge and skills to conduct online teaching innovatively, as well as to be responsive to sorts of possible emerging problems (Farmasari, 2020). Therefore, not only are teachers expected to take on a role, but related institutions such as the Institution of Teacher Training and Education (ITTE) must also respond to this condition by equipping pre-service teachers with relevant innovations on online learning.

Studies have shown that pre-service teachers are normally equipped with content and pedagogical knowledge for their future teaching career (Colley & Lassman, 2021; Niiranen et al., 2018), yet whether they are prepared to be responsive to rapid educational changes in the future remain unknown. Little has been known about how pre-service teachers utilize their pedagogical, content knowledge and learning experiences to reflect, interpret and analyze their specific emerg-
ing learning experiences or problems and project strategic learning innovation to solve specific learning problems (Priestley et al., 2016; Yan & Cheng, 2015). Priestley et al. (2016) highlighted that individuals' interpretation and analysis of specific educational context and experiences will inform actions and are categorized as agentive. The interpretation and analysis will inform agentive actions in the future, targeted as agentive projections for better outcomes (Batmang et al., 2021).

Projection, either short or long term, is the final element of the triadic concept of teacher agency model (Figure 1). The term teacher agency has been widely debated since the late 18th century. This difference is caused by the bias in the definition of teacher agency which has implications for the theory and concept of teacher agency for research (Chisholm et al., 2019). Words such as autonomy, capacity, efficacy, and teacher professionalism are often associated with the term teacher agency. It was Emirbayer and Mische (1998) who introduced the concept of teacher agency through an ecological approach that emphasizes the role of a teacher as an agent in their social environment, using their capacity to solve problems that arise (Priestley et al., 2013).

Figure 1. Teacher Agency Model (Priestley et al., 2016, p. 30)

The ecological approach to teacher agency theorized that agency of individuals should be seen as “a social phenomenon influenced by the level of engagement with specific situations or conditions…” (Priestley et al., 2016, p. 7). When examined, individuals’ engagement with specific contexts can reflect their projections to address issues related to the contexts. As the pre-service teachers engaged with their online learning experiences and obstacles, the data can be used to whether the engagement result in projections (Farmasari, 2020) and oriented to better experiences and outcomes (Waite, 2018).

Despite the obstacles experienced by teachers and students, virtual classes promotes students’ independent learning (Araka et al., 2021), disclosing geographical distance (Roberts, 2018), and flexible scheduling (Weldon et al., 2021). However, innovation in the delivery of learning materials online calls upon teachers’ agentive actions, by, one of which, understanding students’ experiences and problems and using the data to inform their online teaching (Ziyad, 2020).

Researching projections on English Language Teaching (ELT) innovation requires a closer look at what innovation is and how innovation can work in ELT online classes. The term innovation per se represents acts or processes of carrying out renewal, new ideas, and doing things in new ways for/in a specific social system. In the context of learning innovation, innovation has so far been conceptualized as creating something new (Gulnaz et al., 2015) and it is important as it suggests creativity for learning development (Cahyono, 2018). However, the concept of new cre-
ativity has triggered a misconception of innovation in learning (Zhu, 2018). Learning innovation is not always about creating new things from scratch, but the basic principle of learning innovation is "doing things a new way" (Anand et al., 2020; Walker, 2011). Innovation in education encourages teachers and students to explore and use all learning tools to find new ways of delivering material or actions in the classroom; encouraging students to think logically and critically and hone problem-solving skills.

In creating learning innovation, information and technology have been frequently perceived as integral components to enable the optimization of search for the latest sources of knowledge to improve the quality of learning (Ziyad, 2020). However, we argue that learning innovation is not limited to technology and information utilization in the classroom. What is more principal is how teachers understand the technology and information used and implement it as a means to increase the relevance of students' learning processes with their life and development needs (Gulnaz et al., 2015), such as the need for further study, problem-solving, the need for future careers, etc. while still adhering to the principles of teaching and learning as well as the school context (Inayati, 2013; Serdyukov, 2017). When it comes to ELT, the questions are what is really innovative to enable students to use English they learn for communication; is it about integrating information and technology? will students fail to communicate in English when information and technology are excluded from classes? The questions remind us to the nature of language learning in which input, exposures and opportunities are key factors to language learning success (Gupta, 2019). Whether online learning has provided the pre-service teachers “comprehensible input” (Krashen, 1998), whether they were exposed maximally to English and given equal opportunities for language productions require further investigation.

Therefore, by employing the ecological approach of teacher agency, this study aims to examine the perspectives of English Education pre-service teachers regarding innovations on ELT for online learning and the manifestations of those agentive projections on online ELT learning innovation. The study views the importance of pre-service teachers voice their perspectives and experiences about their personal online learning contexts, experiences and problems (Yan & Cheng, 2015). The study hypothesizes that the pre-service teachers’ perspectives would greatly inform their agentive projections and are the indications of their future agency level. In particular, this study is aimed at examining the pre-service teachers’ agentive projections toward innovation in ELT which represent their capacity in interpreting and responding to a specific current situation (Buchanan, 2015; Priestley et al., 2016). By examining the pre-service teachers agentive projections, their preparedness to respond to similar educational contexts and issues in the future can be revealed (Biesta et al., 2015; Chisholm et al., 2019; Priestley et al., 2015). Furthermore, while studies on teacher agency focus greatly on researching teachers, this study offers the feasibility of teacher agency theory to predict agency amongst pre-service teachers. The study offers educators examples and insights on how pre-service teachers’ logical, critical, systematic, and innovative thinking inform their agentive projections for better ELT online classes. Further, the agentive projections will become important capitals for creating innovative English language teaching in accordance with the contextual needs and conditions of their respective ELT classes.

**METHOD**

This descriptive qualitative research analyzes verbal and descriptive data to reveal the meaning and social phenomena in a particular situation (Satori & Komariah, 2014; Silverman, 2016). The study was conducted in a state university located in southeastern part of Indonesia. The study involved 84 English education pre-service teachers who have completed ELT methods courses and consented to participate voluntarily in the study (Table 1). The participating students were allowed to withdraw themselves, at any time, from the research. The data were collected through the framework of a descriptive qualitative research method (Creswell, 2014; Silverman, 2016). The data of this research are, first, the students’ responses in a questionnaire about per-
perspectives about ELT innovations for online learning, interview transcripts and the pre-service teachers' lesson plans.

Table 1. The Demographics of Research Sample

<table>
<thead>
<tr>
<th>Gender</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>22</td>
</tr>
<tr>
<td>Female</td>
<td>62</td>
</tr>
</tbody>
</table>

A Likert-scale questionnaire was designed by combining the theory of English learning innovation from Wedell (2009), the principles of learning English (Gupta, 2019), and the teacher agency theory from Priestley et al. (2016). The questionnaire provided 1-5 (strongly agree, agree, strongly disagree, disagree, and do not know) options. The questionnaire was tried out for two times to five voluntary students. The forms were distributed to 84 students and the completion rate was 63% completed the questionnaire. Cronbach's Alpha was used to measure the level of reliability of the questionnaire instrument distributed to students (Table 2). There are 31 statements, and the reliability level of this questionnaire is .878, which is significant.

Table 2. Questionnaire Reliability

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>Number of Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>.878</td>
<td>31</td>
</tr>
</tbody>
</table>

The data from the questionnaire were then compared to the lesson plans. The pre-service teachers' lesson plans were first examined to see whether they included ELT innovation. In addition to standard lesson plan format from the Indonesian Ministry of Education, the participating pre-service teachers were required to add the reasons or rationale of selecting or determining certain approach, method, strategy, technique, and learning activities. Finally, the pre-service teachers' responses and their projections in the lesson plans were clarified in the semi-structured interviews. The interview was carried out with fifteen students as the representatives of the research population. The data analysis was carried by adopting the six stages of thematic analysis from Braun and Clarke (2006): Familiarization of the data, the development of codes, themes searching, themes reviewing, themes defining and naming, and reporting. The subthemes were used to generate major themes and then comparison was made to the whole collected data to ensure the inclusion of all participants' respondents (Braun & Clarke, 2006). The validation processes were conducted using participant-validation processes where the research participants checked for themes whether they have represented the responses they provided during the data collection. In addition, co-coding was also employed by recruiting a colleague who was knowledgeable about the issue discussed with ninety five percent similarity rate.

FINDINGS AND DISCUSSION

Findings

The agentive projections in this study refer to the pre-service teachers’ projections which contain innovations on ELT for online teaching and oriented for better experiences and outcomes. We categorized the projections into agentive as they are informed by the students’ interpretations and analysis of their past and current online learning situations, experiences and problems (Biesta et al., 2017). In addition, Ebersöhn and Loots (2017) highlighted that people’s interpretations about certain phenomenon, issue or context affects their responses and projections when dealing with or experiencing the same phenomenon directly. In regard to this, the questionnaire used in this study contains statements to identify pre-service teachers’ interpretations, analysis and agentive projections towards ELT innovation during online learning.
As shown in Table 3, most of the pre-service teachers agreed that when their future students face learning problems, they will need help from other fellow teachers for solutions, M=4.19, SD=6.22; they must collaborate with other fellow teachers, M=3.89, SD=.577, and get approval and permission from school leader, M=4.06, SD=.569. Nevertheless, students’ responses for statement 4, designing learning innovations for the class, was contrary. The students, M=02, SD=.604, responded that support from others is not required when it comes to innovation for their respective classes.

Table 3. Pre-service Teachers’ Interpretations, Analysis, and Agentive Projections

<table>
<thead>
<tr>
<th>No.</th>
<th>Statements</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Institution (e.g. school, university, college) must support teachers’ efforts in creating innovation in ELT</td>
<td>53</td>
<td>3.81</td>
<td>.590</td>
</tr>
<tr>
<td>2.</td>
<td>As a teacher, in the future, I need the school leaders’ permission to conduct or create innovation in my class</td>
<td>53</td>
<td>3.63</td>
<td>.658</td>
</tr>
<tr>
<td>3.</td>
<td>I have to work with other colleagues to conduct or create innovation for my PLP classes</td>
<td>53</td>
<td>3.89</td>
<td>.577</td>
</tr>
<tr>
<td>4.</td>
<td>I don’t need other people’s support to create or conduct an innovation in my PLP class</td>
<td>53</td>
<td>4.02</td>
<td>.604</td>
</tr>
<tr>
<td>5.</td>
<td>I can use my autonomy to flexibly change the teaching methods/techniques/strategies/procedures to meet my class conditions</td>
<td>53</td>
<td>3.70</td>
<td>.668</td>
</tr>
<tr>
<td>6.</td>
<td>I can use my autonomy to flexibly change assessment standard procedures to meet my class conditions and needs</td>
<td>53</td>
<td>3.91</td>
<td>.491</td>
</tr>
<tr>
<td>7.</td>
<td>An innovative teacher is an agentive teacher</td>
<td>53</td>
<td>3.70</td>
<td>.575</td>
</tr>
<tr>
<td>8.</td>
<td>If I face problems in my teaching, I have to solve them by myself by referring on my previous effective methods and best practices from other other teachers</td>
<td>53</td>
<td>3.62</td>
<td>.562</td>
</tr>
<tr>
<td>9.</td>
<td>If I face problems in my teaching, I have to ask for helps from other colleagues</td>
<td>53</td>
<td>4.19</td>
<td>.622</td>
</tr>
<tr>
<td>10.</td>
<td>If I face problems in my teaching, I have to ask for helps and permissions from my school leaders to solve them</td>
<td>53</td>
<td>4.06</td>
<td>.569</td>
</tr>
</tbody>
</table>

Of the three factors in the teachers' ecological environment, the students’ agentive perspectives can be seen in their responses to statement number 6, M=3.91, SD=.491, and statement number 8, M=3.62, SD=.562. Most students agreed that when they face a difficult condition or a problem, they will try to solve the problem by referring to their past experiences and the experiences or “iterational background” (Priestley et al., 2015 p. 33). Experience in overcoming a problem will be an important asset for a teacher in overcoming similar problems in the present. The experience also will likely be projected to anticipate the occurrence of similar problems. The students’ agentive perspectives are also identified in statement number 5 regarding teacher autonomy and flexibility in carrying out classroom learning, M=3.70, SD=.668. Biesta et al. (2017) mention that autonomy and flexibility are the two terms that are most often associated with teacher agency because the agency will be formed when someone can interpret and execute a solution when needed. Therefore, we categorize the agency level of the pre-service teachers (Table 4) as a fair level (fairly agentive).

Table 4. Description of Student Agency

<table>
<thead>
<tr>
<th>Mean</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>Very Good</td>
</tr>
<tr>
<td>4.0</td>
<td>Good</td>
</tr>
<tr>
<td>3.0</td>
<td>Fair</td>
</tr>
<tr>
<td>2.0</td>
<td>Poor</td>
</tr>
<tr>
<td>1.0</td>
<td>Very Poor</td>
</tr>
</tbody>
</table>

Table 5 and Table 6 summarize students’ responses to statements generating their agentive projections toward ELT innovation and its alignment to the projective strategies or methods in their lesson plans. In Table 6, the ELT innovation projections from the lesson plans are presented in numbers, i.e., the number of lesson plans from which the aligned projections are identified.
Table 5. Students’ Agentive Projections toward ELT Innovation

<table>
<thead>
<tr>
<th>No.</th>
<th>Statements</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Innovation in ELT requires an integration of ICT in every class meeting</td>
<td>53</td>
<td>3.91</td>
<td>.529</td>
</tr>
<tr>
<td>12</td>
<td>I need sophisticated Information Communication and Technology (ICT) knowledge and skills to be an innovative teacher</td>
<td>53</td>
<td>3.74</td>
<td>.593</td>
</tr>
<tr>
<td>13</td>
<td>I have to use new and modern tools resources to create an innovation in ELT</td>
<td>53</td>
<td>3.81</td>
<td>.590</td>
</tr>
<tr>
<td>14</td>
<td>I can use affordable resources in my environment to create an innovation</td>
<td>53</td>
<td>3.92</td>
<td>.549</td>
</tr>
<tr>
<td>15</td>
<td>It is important to consider the school resources and affordances when creating innovative teaching and assessment</td>
<td>53</td>
<td>3.72</td>
<td>.533</td>
</tr>
</tbody>
</table>

Table 6. Alignment between Questionnaire Responses and Lesson Plans

<table>
<thead>
<tr>
<th>No.</th>
<th>Questionnaire Statements</th>
<th>Lesson Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Innovation in ELT requires an integration of ICT in every class meeting</td>
<td>51</td>
</tr>
<tr>
<td>12</td>
<td>I need sophisticated Information Communication and Technology (ICT) knowledge and skills to be an innovative teacher</td>
<td>11</td>
</tr>
<tr>
<td>13</td>
<td>I have to use new and modern tools resources to create an innovation in ELT</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>I can use affordable resources in my environment to create an innovation</td>
<td>10</td>
</tr>
<tr>
<td>15</td>
<td>It is important to consider the school resources and affordances when creating innovative teaching and assessment</td>
<td>9</td>
</tr>
</tbody>
</table>

The most prominent agentive projections were identified from students’ responses to statement number 14, M=3.92, SD=.549, where students agreed that they would be able to take advantage of the affordable resources available in their school environment. This result contrasted with the innovation projections in the lesson plans where 51 out of 84 or 61 percent (above the average) of the pre-service teachers included the integration of ICT in every class meeting. In the questionnaire, only average number of students agreed that English learning innovation required the integration of information technology (IT) in every lesson (statement number 11), M=3.91, SD=.529, which is strengthened by the students’ responses to statement number 12, M= 3.74, SD=.593, and number 13, M=3.81, SD=.590. Innovation requires the employment of modern technology tools and learning resources.

In the interview, the pre-service teachers (ST) stated innovation in ELT for online classes is very closely related to how lecturers integrate information and technology and how competent they are in using them. They believed that innovation without technology would disadvantage students’ learning on how to use technology for their future professions.

“…today’s professional workers use technology greatly, let alone in the future…there will be increasing demands in using technology at work, so we want to learn from our lecturers the technology they used and how the technology assisted our ELT online learning”. (ST1).

The integration of technology was perceived as an integral part of interactive and engaging online classes. That online teaching should have been delivered in more interesting and engaging ways, involving lively discussions and interactions amongst students, was voiced.

“I got bored and sleepy easily as the lecturers only spoke by themselves and provided only a few opportunities for students to interact with friends”. (ST13).

“They (the lectures) used the same strategy when teaching in Zoom…not interesting”. (ST7).

“I wanted to learn through games with my friends, so we did not get too bored”. (ST11)

In a different vein, some students mentioned internet connections problems and the lecturers’ responses to their technology problems. They expected that the lecturers would respond to their internet problems by giving them alternative ways of learning.

“…I got kicked from the Google Meet and I believe it would happen again…I hope the lecturers would provide me some alternative learning activities so I could still catch up with the lessons…” (ST2).
“I would prefer given the materials first and had only short online classes due to bad signal in my area” (ST8).

Discussion

Although teachers’ professional and pedagogical capacity is significant in shaping their agency, several supporting and inhibiting factors in the teachers’ ecological environment will considerably affect their agency (Priestley et al., 2016). These factors include support and collaboration within their ecological environment such as school leaders and other teachers (Hattie, 2012). The resources are not only related to physical facilities in schools but also the other cultural and structural resources such as values, beliefs, ideas, roles, and the power of the related school stakeholders, including the students themselves (Buchanan, 2015). When facilitated, students’ ideas, roles, ideas, and beliefs revealed during the online learning processes are included as learning resources, especially for their peers (Ebersohn & Loots, 2017). Students’ ideas and beliefs may influence their peers in positive ways as they were interacting during the lessons (Crosthwaite et al., 2015) and can potentially be used by teachers to support certain learning outcomes (Bjørnsrud & Engh, 2012) which is, in fact, contrary to the learning innovation theories. Innovation in teaching should not be interpreted as the integration of information technology and other modern learning resources, but innovation lies in the learning approaches and methods oriented to the students’ learning outcome improvement (Ovbiagbonhia et al., 2019; Mukhametzyanova et al., 2018).

The research data indicate that the level of student agency is at a fair level and is influenced by their ecological aspects, namely their online learning experiences when dealing with technology and the effectiveness of the teaching method employed by their lecturers. We revealed that the students’ projective ELT innovation is oriented toward making technology feasible for students and varying learning methods to evoke students’ learning motivation. The Indonesian Qualification Framework (IQF) mandates higher degree education to integrate technology in classrooms due to its necessity for students’ future work (Mali & Timotius, 2018). The integration of technology during online teaching is not only motored by this IQF, but also by the unprecedented time during the Covid-19 pandemic.

Since the implementation of online learning from home, students have carried out several lessons facilitated by technology and internet-based platforms such as Google Meet, Zoom and WhatsApp. Additionally, the students also experienced a great deal of flipped learning methods where their lecturers maximize students’ independent learning at home and work on tasks before the online face-to-face learning. Mastery of learning materials in flipped learning is carried out through a process done by students in completing tasks, both structured and unstructured tasks (Butler & Liu, 2019). Through the learning process with assignments media completed independently by students, flipped learning can support the formation of students’ self-regulated learning because it can stimulate the initiative and enthusiasm of students (Zhu, 2018).

The students’ involvement in flipped learning influenced the choice of ELT innovation form. They admitted that this learning model was most likely to be implemented for students in remote areas with limited online synchronous meeting facilities. Azhari and Fajri (2021) attested that learning models during the online learning era must always consider the ability of the students, and the teachers are required to be more adaptable to students’ learning conditions and difficulties, including the difficulties in using technology. We categorized these projections as agentive because students can relate one aspect of their ecological context, their past online experience, as a basis for designing learning innovations (Priestley et al., 2016). In addition, it also reflects the pre-service teachers’ responsiveness to other students in their emerging environment (Farmasari, 2021) when involved in synchronous online learning.

Further, the pre-service teachers’ lesson plans show that combining more than one learning method for one online learning process was another form of agentive projection. The students attested that this combination was considered innovative because it could improve their learning experience; project students to be more active and collaborate with their classmates. Some forms
of learning model combination identified from student lesson plans are (1) combining scientific learning with communicative language teaching, (2) combining project-based learning with genre-based approach, and (3) combining genre-based approach with total physical response.

The combination of two learning methods in one lesson is oriented to the problems faced by students when carrying out learning using science-based learning methods. The pre-service teachers doubted that ELT learning materials and language skills can thoroughly be delivered through a scientific-based method, such as project-based learning and case-based learning. In addition, the agentive combination of the learning methods is oriented towards increasing English language proficiency. Scientific-based learning methods, such as project-based and case-based learning are believed to promote students’ participation and collaboration during the learning (Allen, 2011), yet the pre-service teachers’ agentive projections do not let go of the communication objectives in the learning of English as a foreign language in Indonesia (Gupta, 2019). The pre-service teachers hesitated that teacher would be able to balance durations for project completion and opportunities to practice English for communication, as well as the assessment of their English language proficiency. By combining project-based learning with genre-based approach, students can communicate the projects they have composed into written reports (writing) and oral reports (speaking) by first being given the language models, involved in a joint- construction of the text and independent-construction of the texts according to the needs of their respective project descriptions (Farmasari, 2021; Gupta, 2019). Apart from assessing projects, the lecturers can also observe students’ English proficiency when communicating their projects using communicative-based assessment rubric. However, more in-depth studies on teachers’ strategies to develop students’ English competencies as mandated in their respective curriculum. Besides, future studies are also required to examine how teachers integrate assessment of the English language competencies with assessment of the projects students created.

CONCLUSION

This study indicated that the students’ agentive projections are influenced by the students’ ecological aspects, namely their learning experiences during the online learning, forms of learning innovation carried out by lecturers in class, and their understanding of the integration of information technology to support learning innovation. Furthermore, the pre-service teachers’ agentive projections towards the ELT innovations show a great influence of the students’ perceptions of ELT innovative models and their perceptions of the nature of learning English as a foreign language. The findings are expected to be beneficial for knowledge about the potential manifestations of teacher agency amongst pre-service teachers of English education and for professional practice, namely educators and students about sorts of ELT innovation feasible for online learning. The findings may also contribute to preparing pre-service teachers conducting teaching apprenticeships specifically when planning and implementing online lessons.

This study strengthens the idea that teacher agencies are not only influenced by the professional capacity and pedagogy of teachers but also influenced by factors in the teachers’ ecological environment. Teachers’ ecological factors may hinder or support the exercises of agency. Designing and implementing learning innovations for online learning aimed at improving the quality of the learning process and increasing students’ learning achievement. These are categorized as agentive because innovations should be based on learning problems, as well as the results of teacher considerations regarding the availability of facilities and infrastructure to support learning innovations.

REFERENCES


