

## THE STUDENTS' PERSONAL LEARNING ENVIRONMENT (PLE) ENGAGEMENT IN THE SCIENTIFIC WRITING COURSE

**A'thi Fauzani Wisudawati**

Politeknik Negeri Madiun

Email: [athifauzani@pnm.ac.id](mailto:athifauzani@pnm.ac.id)

**Muhammad Isa**

Politeknik Negeri Madiun

Email: [muhammadisa@pnm.ac.id](mailto:muhammadisa@pnm.ac.id)

**ABSTRAK.** Para mahasiswa dituntut untuk menyusun sebuah artikel ilmiah yang mereka refleksikan dalam sebuah publikasi. Keterampilan menulis dimunculkan melalui teori, dan fakta, serta mengkolaborasikan aspek-aspek tersebut mejadi sebuah gagasan ilmiah yang baik. Tantangan untuk meyusun artikel ilmiah membawa peluang bagi konsepsi pembelajaran secara mandiri (PLE). Penelitian ini membahas bagaimana keterlibatan mahasiswa dengan lingkungan belajarnya ketika mereka menyusun artikel ilmiah. Terdapat sembilan belas mahasiswa pascasarjana jurusan Pendidikan Bahasa Inggris di Indonesia sebagai peserta penelitian. Metode penelitian yang digunakan berupa observasi, kuesioner, dan wawancara mendalam untuk mengumpulkan data. Hasil penelitian menunjukkan bahwa peserta didik memiliki keterlibatan yang kuat dalam penggunaan teknologi atau perangkat digital untuk mendukung pembelajaran penulisan artikel ilmiah. Namun, kebutuhan untuk memanfaatkan perangkat atau sumber offline juga menunjukkan angka yang signifikan. Implikasi dari penelitian ini ditujukan kepada dosen mata kuliah penulisan akademik sebagai refleksi pengajaran 2.0 dan peserta didik sebagai referensi dan pembelajaran di masa depan.

**Kata Kunci** : Personal Learning Environment (PLE), Artikel Ilmiah, Keterlibatan Siswa.

**ABSTRACT.** Students make their writing better in a specific social world which they reflect and invoke through a publication. The skill of writing must come up with a collaboration of theory and facts. Those challenges to conquer building scientific articles bring the opportunity for personal learning environment (PLE) conception. PLE is more an academic change in the utilization of innovations than a mechanical change in instructive frameworks to help students learn. This is a preliminary study in an academic writing class to explore students' engagement in PLE when they were constructing their scientific articles. The participants were nineteen graduate students majoring in the English education department in Indonesia. The researcher utilized observation, a questionnaire, and an in-depth interview to collect the data. The result showed that learners had a strong engagement in the use of technology or digital tools to support scientific writing learning. However, the need for having some encouragement through offline tools also presents a significant number. The implication of this study is displayed to both academic writing lecturers as the 2.0 teaching reflection and learners as a reference and learning in the future.

**Keywords:** *Personal Learning Environment (PLE), Scientific Writing, Students' Engagement.*

## INTRODUCTION

Scientific writing can be defined as a unique form of argument where the text is merely the channel that allows scientists to communicate independently existing truths, relaying directly observable facts to the world. The label 'scientific' confers reliability on a method and prestige on its users, it implies all that is most empirically verifiable about academic knowledge and is seen to describe what the natural and human worlds are actually like (Hyland & Salager-Meyer, 2008). In the flow scholarly atmosphere, publications are basic for professional success and the monetary survival of research divisions. In numerous establishments, the quantity of effective distributions is utilized as a proportion of research profitability. Moreover, different properties of publication, for example, the number of authors, the number of references, and the effect factor of the paper are regularly considered.

As composing a paper is considered quite a hard matter, personal learning environment (PLE) appears as a solution to bring together tools and resources that help learners control their learning process (Reinders, 2014). Personal Learning Environments and technologies can be key to supporting such lifelong learning (García-Peñalvo & Conde, 2015). Chatti (2011) disclosed that PLE is to help not just an individual space constrained by the student, yet additionally, a social stage to associate with others to trade information and seek instructive objectives. PLE speaks to a move far from the conventional model of figuring out how to a model which students can utilize on the web and disconnected assets they select and sort out alone. From those conceptions above, PLE is believed a supportive platform that highly helps the scientific writing learning process.

This research highlights the engagement of EFL learners in their PLE in their scientific writing. The results of the questionnaire show how they tend to certain tools and platforms to support their learning process, in this case, scientific writing matter. The students' interview completes the series of data analyses of this study including what kind of tools were used and the reason behind choosing those tools.

A previous study conducted by Reinders (2014) presents a fact of the struggle of teaching Scientific Writing. Two hours a week in the classroom was considered not enough to learn the whole Scientific Writing material in detail. So, the students took more time to learn outside the classroom because learning inside the classroom is very limited. Students need to explore other resources and make use of both online and offline tools that were not possibly conducted inside the classroom with limited time. These circumstances lead to PLE having significant potency to support both inside and outside the classroom

(Reinders, 2014). However, the previous research never exposed how big the students' engagement in their PLE. As the potential benefit suggested, the question may appear as a research problem i.e, how is the student's PLE engagement in the scientific writing course?

## **LITERATURE REVIEW**

### **Personal Learning Environment (PLE)**

Personal learning environment (PLE) has risen as a promising better approach to react to the requirements of the information society and speak to a substantive change in the comprehension of e-learning (Adell and Castañeda, 2010). This idea speaks to a historic new advancement in instructive practices through the fuse of Information and Communications Technology (ICT), and a chance to advance the production of colleges without dividers ready to satisfy the needs of the learning society (Saz, et al. 2016). An extraordinarily decent variety of apparatuses can be incorporated into PLEs. They incorporate specialized instruments (for example MSN talk, Skype, or Viber), devices for production (for example web journals, Twitter, Wikispaces), asset sharing (for example Flickr, Slideshare, Delicious), person-to-person communication (for example Facebook), advanced media (for example Daringness) and archive co-creation (for example Google docs).

Panagiotidis (2012) in such a methodology PLEs support the individual quest for information which advances bona fide getting the hang of joining the assistance of the instructor for the learning exercises. Through the determination and fuse of the proper correspondence, accumulation, syndication, and coordinated effort apparatuses, PLEs enable clients to approach adapting paying little mind to time and place, institutional, specialized, or academic obstructions, and to settle on the most fitting approach to approach information. In the meantime, they enable clients to utilize them as a regular interface for the different institutional e-learning frameworks with which they associate and work in a casual route in their regular day-to-day existence too.

One of the principle preferences of utilizing a PLE is that it can give a situation and devices as well as get ready for deep-rooted learning as it empowers reflection and joint effort, gives persuading learning exercises, and creates understudy obligation (Attwell, 2007; Drexler, 2010). As the guarantee of the PLE idea, the test of composing is accepted to be fathomed as the instruments and the conditions given. The present research portrays the commitment to PLE of EFL students while they were developing scientific articles in the scholastic composition classroom.

## Scientific Writing

Scientific writing means written scholarly articles, aimed at building knowledge about a particular subject, that are published in a variety of professional venues, such as journals (Regan & Pietrobon, 2010). In scientific articles, the progress of speciation is seen most clearly in the Introduction section, where multiple studies have shown a progression, then a critical gap is isolated in the existing body of knowledge, so the author can present a hypothesis that closes the gap or simply state the research aim and questions that logically achieve the same goal (Regan & Pietrobon, 2010). When considering a theoretical framework for scientific writing, it is important to remember that because text structures are socially determined, they are specific to certain types of research and historical moments (Regan & Pietrobon, 2010).

Good writers go through many processes, in particular, writing and revising at each stage of the composing process, before the final product is produced (Chandler 2003; Chen 1997; Ferris 1997; Myles 2002). Good writers also share and discuss the writing process with others, are critical of their work, and are aware of the genre(s), or style(s) of writing, used in their fields. Effective writing is thus the result of rewriting and revising, of going back and thinking before continuing to write (Peretz, 2005).

Hyland & Salager-Meyer (2008) in their work mentioned three significances of scientific writing. First, describe its role in academic persuasion and the construction of knowledge. All academic writers must display familiarity with the persuasive practices of their disciplines: encoding ideas, employing warrants, framing arguments, and conveying an appropriate attitude to their readers and their ideas, in ways that their potential audience will find most convincing. Second, legitimizing the ideological and political authority of science in the modern world. The third, establishing an institutionalized system of hierarchy, reputation, and reward through publication.

## METHODOLOGY

### Participants

The participants were nineteen graduate students majoring in the English education department at the Faculty of Education in Indonesia, including five males and fourteen females. Their average age is 22-30. This study took place in the first semester of academic writing class for sixteen weeks. In academic writing class, scientific writing was their mandatory final assignment to be submitted at the end of the semester. Since they were English major students, they have no significant difficulty in building English arguments. However finding credible and appropriate references, combining both theoretical reviews with arguments and facts, and arranging them into good scientific papers become their challenge. Along the process of learning, they were allowed to both utilize digital and non-digital tools inside and outside the

classroom.

### **Instruments and Materials**

The data were collected by conducting class observation, interviews, and questionnaires. In the class observation, the researcher noted the scientific writing material given and the learning resources in academic writing class by the lecturer, what kind of assignment was done by the students and how they accomplish it, what learning aids they utilize, and the result of their work. While the questionnaire was a researcher-made questionnaire that was adapted from the theory of Personal Learning Environment (PLE) by Reinders (2004) which contained thirty questions about the student's involvement in PLE including the tools used, the implementation, and the frequency of using the tools. The following are the sample of questions, what kind of online and offline tools are used by the students, the reason why choosing the platforms, and how long they make use of those platforms. To enrich the data, the semi-structured interview was conducted with random students.

### **Procedure**

The researcher conducted the class observation as the first procedure. The academic writing class was held every Friday and I regularly followed the schedule to have an observation in that class. Having observation means that I took pictures of the class activity, recorded important activities or things, and noted what they were doing and the materials also tools they utilize to support learning. After four weeks of observation, the questionnaire was distributed to all students. Because analyzing the data from the questionnaire need more time, the interview as the last method to complete the data was conducted a month before the research finished.

### **Data Analysis**

The concept of PLE was adapted from Reinders' work (2014). This is beneficial to reveal and answer the research question of how is the learners' engagement in Personal Learning Environment (PLE) in constructing scientific writing. To analyze the data, this study used thematic analysis: a multiple case study by Barkhuizen, et al. (2014). Thematic analysis is one of the qualitative approaches to analyzing narrative data. It helps to connect the data excerpt to more philosophical concepts and re-arranging them in support of the theory.

## RESULT AND DISCUSSION

### 1. The tendency to use Online Tools

The following explanation exposed academic websites as part of digital tools that are used by students to learn scientific writing. As the questionnaire was distributed, the result represents that the theoretical framework is the most important substance to building an argument. In this case, relating to finding the theory, google scholar is the top platform used by all students (100%), followed by web journals used by as many as eighteen learners (94.7%), then followed by the online library (73.7%). In the open-ended questionnaire, they stated that google scholar was very useful for exploring the works of experts, besides that they could also find everything they were interested in. The work of the experts from the previous to the latest can also be easily enjoyed by the students in which the articles on google scholar can be categorized as credible writing for academics.

Web journal in this case is referred to as platform index journals such as Scopus and other reputable journals. Students claimed they were more relieved when each journal obtained was checked for quality in the journal web before being cited in their writing. Of course, this will be very influential for the reviewer of the journal which they will then send.

Most of the participants used their campus online library to browse articles they wanted to read or need for writing references. Previously, students had spent 1 hour taking part in socialization in their campus library about how to use both offline and online libraries. They were shown how to access and download credible journals available on campus online library platforms. This is felt to be very beneficial for students. Furthermore learning to find theories to be compiled into an article can be done anywhere. Besides the campus library, they also use lib gen.

*"In today's digital age of learning, getting engaged in online tools is very helpful because anytime and anywhere we can access everything we need to learn in this case finding all resources we need to build an argument. Compared to Google which provides much more results of the keyword we type, Google scholar I think is more credible than that. Another platform is, of course, a web journal, because my lecturer suggested we check the article quality before we cited, Scopus web journal is still the best journal search engine since the credibility was admitted by scholars all over the world. Another tool is the online library which is provided by my*

*university, that's quite helpful"*

Other beneficial digital tools are social media applications such as YouTube and Twitter which are considered effective for learning. As the students have more time to learn outside the classroom, they are easier to explore other learning resources that they don't use in the classroom. Although students claimed to have other social media accounts such as Facebook and Twitter, they said that they never used both accounts as a learning tool.

*"As we were asked to create a scientific paper, I think that social media is not credible because the content is mostly filled with something more informal which talks about people's daily issues. That's why we can't depend on social media to search the resources to combine theory and concept in scientific writing, so I still prefer to choose reputable sources for building my article."*

Panagiotidis (2012) As the development of these PLEs concerning language learning, it was considered appropriate to include in these PLEs a series of characteristics and capabilities that could be useful not only to teachers but to learners as well. To this end, the effort was made to embed as many of the following tools as possible, with the rationale that these could help, as far as possible, a learner or teacher to approach authentic sources of the foreign language.

## **2. The need for engaging the Offline Tools**

### **a) Encouraging Out-of-Class Learning**

To find theory, the questionnaire distributed to the learners showed that the offline library sources had the most significant role for the learner to find. The second place was discussing with their friends and then printing journals. Then, it was followed by book as many as seven students and for e-books was only used by a student. To find facts to strengthen the theory different results are shown in the offline source questionnaire to find facts to strengthen the theory. If to find a theory, the influence of the library has the biggest contribution followed by discussions with friends, in this context it turns out that discussions with friends were frequently conducted by most students in helping students find facts related to the concept of articles they wrote. Whereas here libraries and printed journals have a balanced number of students as much as eleven students, however, a greater number was shown in the use of printed books and e-books.

*"Although most of my time I spend on online tools because of the strength, If I have time, I*

*sometimes go to the library to read some books. The atmosphere is highly different. I can't deny that learning using offline tools trigger me to be more focused instead of opening the other windows of the website as I access online tools. Another factor is having a chance to discuss with friends, the direct interaction by face to face increase the engagement of learning, we can exchange everything limitless."*

When collaborating theories and facts in a scientific article, the survey results show that discussion with friends is more used as a method to achieve this supported by sources in libraries and print journals. Of the three situations above, it can be concluded that having competent friends is a very influential thing in learning. Students claimed that many things were unknown before but there were already some friends who knew. Therefore discussing and sharing experiences helps them to increase their knowledge specifically to learn scientific writing together. Learning is not only from tools or sources in the form of real objects but the knowledge of various parties, one of which is a friend can add to the coffers of knowledge.

Reinders (2014) stated that the most difficult and the most energizing part of utilizing PLEs with students is the way PLEs can profoundly affect learning and classroom instructing practice. For a certain something, PLEs change the parity of intensity in class in that understudies assume greater liability for their learning. For a few students, this might be another experience, and some may well scrutinize this change. Similarly, as with all classroom practice, the best methodology is to clarify the basis behind this part of PLEs. Another is to present understudy-coordinated learning errands progressively and to give sufficient help.

PLEs suggest or encourage certain academic ways to deal with learning (Attwell 2007). They are individualized situations, explicit to students' inclinations and necessities. Students tailor nature with their favored instruments and utilize those apparatuses in the ways that suit them, usually on occasion and in spots advantageous to them. PLEs are additionally social spaces that enable students to associate with different students, local talkers, and educators. Along these lines, they are open conditions, not confined to the classroom but rather supporting cooperation with the more extensive network. The other fundamental normal for PLEs is that they offer casual conditions that students themselves make without the assistance of an educator and use in the full scope of settings that make up a student's life. Subsequently, PLEs additionally reach out past the prompt instructive condition of a course or a school and provide support for deep-rooted learning



**b) The possibility of learning inside the classroom as much as outside the classroom.**

Conventional learning is still the most effective way to increase student engagement with educators. This was revealed by the participants themselves who claimed that learning face-to-face with their learning had a significant difference. Learning in the class by meeting lecturers and friends will increase the sense of calm and eliminate the feeling of being "your own". In terms of learning to make an article, for example, to find a theory, with learning outside the classroom, certainly, the different atmosphere felt by students. For the benefit of scientific learning writing in the classroom, of course, the lecturer has the greatest role. The lecturers should notify all information for fulfillment of student learning such as material that contains theory. This proved that as many as fifteen students decided to choose their lecturers as offline learning resources in the classroom.

The researcher observed in the classroom that the lecturer also integrated both digital and non-digital sources and tools. The offline sources and tools include explanations from the lecturers themselves, guidebooks taken by several students, and printed journals that they have brought from home. Lecturers have an important role in explaining how the structure of scientific articles ranging from making titles to conclusions even to selecting journals that are following the topic to be sent until the way to submit the journal. Many students claim that this is very new and useful because most students have never had previous journal publications.

As for online learning in the classroom, lecturers often ask students to open their mobile phones to directly access what they do not understand such as journals A, B, C, or D. This is very useful, such as direct learning. Significantly, faced with meaningful outside-class learning. This is felt to be very effective than having to take notes before being predicted at a later time. Then followed by discussions with classmates, and reading journals.

To find facts to strengthen the theory, However, lecturers are not always the biggest source in the class. In the process of searching for the facts, discussing with friends is the thing they feel most comfortable and this has the highest percentage as chosen by seventeen students and then followed by lecturers' direction and printed journals.

To develop knowledge, learning that is not alone should be done. One of them is by discussing with friends. Many things we did not know before, but we can get it easily when exchanging information with friends. Besides lecturers, friends will have a good impact on learning. In an interview, several students claimed that they had limited interaction when with lecturers. Even though they have difficulties, they remain reluctant to ask. It's different from friends. Integrating two things, facts and concepts is not easy. This causes lecturers and their learning and discussion with classmates and print journals Surveys prove that indeed lecturers play a strong role in helping students learn.

PLEs are accumulations of instruments for students' coordinated learning, and if they are to help long-lasting learning, students should begin seeing and utilizing them thusly. This possibly works if students see direct connections with their language-learning practice and are required to make utilization of PLE instruments in errands that slowly stretch out past the classroom and the school. Students could, for instance, complete a gathering task and report their outcomes online to impart to different students, who would then be able to remark on them.

Utilizing existing tools and resources, especially digital, is one of the strengths of PLE in supporting overall learning. Making a scientific article that is not easy, but this tool is very influential to get rid of all the obstacles and difficulties that exist. In addition, student learners in the present era are very capable of learning 2.0. of course, the teacher will also be greatly helped by the awareness and willingness of students to be supported by the existence of technological advances.

## **CONCLUSION AND SUGGESTION**

Scientific writing is an influential matter to promote academicians' ability, competence, and satisfaction perceived as a significant consideration. The process of learning can be conducted both inside and outside the classroom as proposed by the basic review of PLE. The students conceded that they make use of both digital and non-digital tools. However, the tendency of utilizing digital tools is considered the more frequently used. Having a mandatory to build an argument into a scientific paper remains a challenge for the students because the whole process needs observation and understanding. Several components were put in involving the students' voices, the strong theory, and the story or fact that happened in the world as complete scientific writing. As students have more time to study outside the classroom, the personal learning environment engagement in learning scientific writing presents a significant number for making use of digital tools. The result of the study shows that several online platforms were beneficial for students' learning process, they are google scholar, web journal, and the college online library. Google scholar was admitted as the easiest platform to find resources they were searching for, followed by web journals because the journal quality become the highest consideration in their academic writing class. As the students had experienced library socialization from the college librarian, they find it as easy as using google scholar and web journal to support their argument building.

## REFERENCES

- Adell, J. & Castañeda, L. (2010). Los Entornos Personales de Aprendizaje (PLEs): una nueva manera de entender el aprendizaje. In Roig Vila, R. & Fiorucci, M. (Eds.) Claves para la investigación en innovación y calidad educativas. La integración de las Tecnologías de la Información y la Comunicación y la Interculturalidad en las aulas. Strumenti di ricerca per l'innovazione e la qualità in ambito educativo. La Tecnologie dell'informazione e della Comunicazione e l'interculturalità nella scuola. Alcoy: Marfil – Roma TRE Università degli Studi.
- Asztalos, R. (2015). The Pedagogical Purposes of the Use of Virtual Learning Environments and Web 2.0 Tools in Tertiary Language Teaching in a Blended Learning Environment. *Doctoral Dissertation*
- Bessenyei, I. (2010). A digitális bennszülöttek új tudása és az iskola [Digital natives' new knowledge and the school]. *Oktatás-Informatika*, 2010(1-2), 24-30.
- Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 8(1), 136-155.
- Brown, J. S. (2000). Growing up digital: How the Web changes work, education, and the ways people learn. *Change*, 2000(March/April), 10-20.
- Chandler, J. (2003) "The efficacy of various kinds of error feedback for improvement in the accuracy and fluency of L2 student writing", *Journal of Second Language Writing*, 12 (3), 267-296.
- Chen, J.F. (1997) "Computer Generated Error Feedback and Writing Process: A Link", [online],
- Ferris, D.R. et al. (1997) "Teacher Commentary on Student Writing: Descriptions and Implications", *Journal of Second Language Writing*, Vol 6, No.2, pp155-182.
- Frاند, J. (2000). The information-age mindset: Changes in students and implications for higher education. *EDUCAUSE Review*, 35(September-October), 14-24.
- Gaston, J. (2006). Reaching and teaching the digital natives. *Library Hi Tech News*, 23(3), 12-13.
- Golonka, E. M., Bowles, A. R., Frank, V. M., Richardson, D. L., & Freynik, S. (2014). Technologies for foreign language learning: A review of technology types and their effectiveness. *Computer Assisted Language Learning*, 27(1), 70-105.
- Hoopingarner, D. (2009). Best practices in technology and language teaching. *Language and Linguistics Compass*, 3(1), 222-235.
- Hyland, K. & Salager-Meyer, F. (2008). Science writing. In Cronin, B. (ed) *Annual Review of Information Science and Technology*. Vol 42: 297-338
- Kaya, H. (2015). Blending technology with constructivism: Implications for an ELT classroom. *Teaching English with Technology*, 15(1), 3-13.
- Myles, J. (2002) "Second Language Writing and Research: The Writing Process and Error Analysis in Student Texts
- Panagiotidis. (2012). Personal Learning Environments for language learning. *Social Technologies*. 2012, 2(2): 420–440.
- Peat, J., Elliot, E., Baur, L., & Keena, V. (2002). Scientific writing easy when you know how. *BMJ Books*
- Peretz A (2005) "Teaching Scientific/Academic Writing in the Digital Age" *The Electronic Journal of e-Learning* 3 (1), 43-54
- Regan, M. & Pietrobon, R. (2010). A Conceptual Framework for Scientific Writing in Nursing. *Journal of Nursing Education*, 4 (8), 437-443

- Reinders, H. (2014). Personal Learning Environments for Supporting Out-of-Class Language Learning. *English Teaching Forum* No 4
- Saz, A., Engel, A., & Coll, C. (2016). Introducing a personal learning environment in higher education. An analysis of connectivity. *Digital Education Review* - Number 29.
- Szűts, Z. (2014). Közösségi média és web 2.0 alapú tanulási formák integrálása a felnőttképzésbe [The integration of social media and web 2.0 based learning forms into adult education], *EDU Szakképzés-, és környezetpedagógia elektronikus szakfolyóirata*, 4(1), 37-45