NECESSARY OR COMPULSORY: STUDENTS’ PERCEPTION ON SCIENTIFIC WRITING AND EVERYTHING IN BETWEEN

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Abstract: The presence of scientific writing as a new compulsory course attracts educational institutions, including Universitas Terbuka (UT). Not only because the course is a new course, which means many possible and valuable reactions to it, but also due to the puzzling condition surrounding it. The goal of this study is to observe the perception of UT students on scientific writing. To make it easier to follow, we limit our concern on two research questions and one hypothesis. The first question is on how students perceive scientific writing courses, and the second question is do students consider the course necessary or compulsory. On the other side, we promote a hypothesis that argues that students will perceive the scientific course as necessary yet fail to internalize the skill from the course. This study uses a mixed method which can be utilized to answer the research question as well as the hypothesis. The sample is 47 participants that enroll in a scientific writing class using a nested sampling design. The result shows that 3 levels of perception can also answer the research question such as high, moderate, and low perception. It can be concluded that the students have a solid perception of the importance of the course since it contains the necessary knowledge for the student.

Keywords: mixed method; perception; scientific writing.

INTRODUCTION

Writing, as one of the important elements in social life, is indisputable. It has been known as the mark of certain civilizations. From time to time, writing skill is placed as a sign of intellectuality as well as the high social status of the holder. According to Graham (2019), writing is a versatile tool that can be used for a wide range of objectives. It is a significant skill for students’ performance in the classroom and affects their personal and professional achievement after graduating from school. It affects the psychological factors of learners (Suastra and Manggo, 2020) and is used to share information, maintain relationships, influence others, and support learning. McLean (2022) states that writing helps students to remember what they learn and boost their understanding of the materials. Due to the urgency of its presence, writing has been put into the curriculum and taught in higher education as a requirement for students to be mastered.

In line with the importance of writing, academic institutions start to train their students by putting writing as one of the compulsory courses that need to be taken. For example, in Universitas Terbuka (UT) Indonesia. UT is the only open university in the country that employs open and distance learning (ODL) which is established to respond to the needs for higher education worldwide (Zuhairi, 2019). At UT, scientific writing is one of the types of writing subjects that students must enroll in. Scientific writing is part of academic writing skills where it is done for academic purposes (Fang, 2021). According to Fatimah (2018), the optimal curriculum for academic writing courses includes lessons that prepare students to write scientifically.

The university put academic writing because it can bring several benefits. It is proven by research
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from Tomak (2022) that students are benefited from the course for their academic studies. They began to be able to communicate themselves more clearly by using appropriate terminology and precise sentence structures. The interview result endorses Defazio, Jones, Tennant & Hook, 2010; Holtzman, Elliot, Biber, & Sanders, 2005; Saidy, 2015 (Scott, 2020) research where they also found that students' degrees of academic writing proficiency have a significant impact on both academic accomplishment levels and post-graduation success. Due to the importance of that course, we conclude that this course is necessary to be taught to students.

Despite the abundance of assumptions on the importance of writing, it is not always perceived positively. Several studies show otherwise teaching writing is considered less important. Moses (2019) categorized writing as a complex skill for students because they need to have enough vocabulary, good spelling, an understanding of grammar, readiness of students, and exposure to reading texts. Moreover, Darancik (2018) showed that according to the perceptions of undergraduate students, the most effective skill to master is speaking (69) and listening (19), while writing (10%) and reading (2%) are considered less important, of the four basic communication skills. From there, we can see that writing is considered less important compared to the rest of the skills.

Furthermore, in Indonesia where English is a foreign language, learners usually have some problems when trying to put together a sentence, a paragraph, or a text, students typically run into several difficulties. Students have difficulty in connecting one sentence with another because of the limitation of knowledge about the topic (Suryanto and Sari, 2021). There are certain issues with text writing where pupils who do not write in English often have trouble when their teacher asks them to record their views or experiences. (Alisha et al, 2019). According to Andira and Trisno (2021), students' anxiety in writing in English is one of their anxiety patterns because they are terrified of making mistakes. They emphasized that the pupils might produce poor writing because of their worry. It is relevant to the fact that when students are not enjoying it or are psychologically under pressure, the real potential will not emerge or improve. Based on the discussion, can we still consider writing necessary or it is just (forced) compulsory without knowing that directing our students to take this course is like putting them on a brink. This is the academic puzzle we want to answer.

The writing skills of Indonesian university students who are studying English as a Foreign Language (EFL) have been the subject of some studies. For instance, Toba, et al. (2019), who conducted a study in Samarinda, stated that university students face difficulties in writings aspects such as vocabulary, structure, content, organization, and mechanics. Another study was done by Aunurrahman et al (2017) in Pontianak, West Kalimantan who made the observation that the writing control of EFL students in relation to the language and structural elements in argumentative essay writing was still restricted, particularly in terms of fostering critical thinking. Finally, Ariyanti & Fitriana (2017) found that the quality of EFL students’ essay writing ability was classified as poor when they assessed students in a private university in the city of Samarinda, East Kalimantan.

Although normatively, writing is an important subject since it can robust students’ performance either as a student or job seekers. Empirical evidence shows scientific writing can bring bad benefits such as the possibility of anxiety for students (Sa’adah and Ali, 2022). Moreover, several studies present the fact that students have a low level of achievement in an academic writing course, despite the claims from several prior studies and theories that academic writing is necessary. Due to this phenomenon, we want to explore students’ primary assumptions toward the course. Do they perceive the course as a necessary course to boost their instrumental skills, or do they just see it as a compulsory course that they need to deal with to be able to earn a degree? To investigate the perspective, we develop two research questions. First, how do students perceive scientific writing as one of the compulsory courses? Second, is scientific writing essential for students?

Academic writing is a form of writing where the writer composes a scientific work. By means, the process of reporting the fact is based on a certain method. It is in contrast with the regular form of writing which is free from any methodological constraint. According to Alamsyah (Madjid et al, 2017), the following are some traits of academic writing: (1) discusses a research finding (factual objective), or the facts in light of the hypothesis under study, (2) systematic and methodical, referring to the employment of specific techniques and stages that are ordered and regulated when discussing issues, (3) Scientific writings that employ the scientific barrel, or the barrel of the formal and raw scientific language. From this
concept, it is understandable that academic writing is not a simple process. We need to follow certain rules and those need to learn to create a good or at least fulfilled the criteria of academic writing. In addition, in teaching academic writing, various approaches are available. One of the strategies is using cooperative learning. At Arab International University, Shammout (2020) investigated whether cooperative learning improved the writing abilities of Syrian EFL students. Along with improving their writing abilities, EFL students benefitted from the cooperative learning environment by developing their linguistic proficiency. Meanwhile, Gao (2023) conducted a study to examine the joint benefit of providing and receiving feedback in academic writing. This study analyzed two drafts of literature reviews from 50 postgraduate students. The results showed that those bilateral peer reviews significantly improved students' writing development. There is more selection of academic teaching methods or strategies to increase students’ skills but how do we know that our students perceive the learning in a respected manner? We can always provide good learning material, yet we cannot force them to like it if they do not prefer it from the very beginning. Therefore, understanding their perception is important.

Through the psychological process of perception, which is in accordance with the experience gained through the five senses, people can filter reactions into good or negative views. Responses are obtained through the processes of selection, interpretation, and reaction (Erin & Maharani, 2018). From the concept, we realize that perception is internal recognition that particular people give to certain things, phenomena, or in this case learning processes. In understanding perception, the stakeholder can filter which area needs to be improved, the type of learning that probably is judged as compulsory but less necessary for the personal well-being of the student. Then, the stakeholder can plan or re-plan a better strategy which can finally improve students’ academic writing skills. For instance, we take an example of the importance and concern of students’ perceptions as it will generate a positive result for our students (Edgerton and McKechnie, 2023). They claimed that students’ perceptions about learning in school significantly impact their academic achievement. Regarding academic writing, it is an important or compulsory course that students need to take to proceed to the next level.

In the semester 2022.2, it is the first time UT held a scientific writing class in the form of independent learning, an online tutorial (Tuton), and a webinar tutorial (Tuweb) combination. All the students must take the course, or we can say that it is compulsory. For students in the English Education study program, the scientific writing article needs to be written in English, unlike students in other departments where they can write in Bahasa Indonesia. To join the class, students have to login into e-learning and check all the activities, assignments, and Tuweb schedules. There are 14 learning activities consisting of independent learning, Tuton, and four times Tuweb. Tuton is done asynchronously while Tuweb is conducted synchronously where the tutor and the students meet virtually in a certain schedule that lasts for two hours. However, it empirically brings challenges because students must spare some time for attending the tutorial.

The goal of this course is for students to create a good scientific writing article and publish it in the UT repository or elsewhere. Taking all the elaborate explanation of the necessity of the course as well as the empirical evidence where it can generate a negative effect on students. In the context of the university level, the writers argue that students will see the necessity, however, fails to internalize the skill.

METHOD
In this study, nested sampling is used, which is a specific sampling strategy that is applied in the context of sequential quantitative-qualitative studies (Tanner, 2023). It entails a sequence of steps in which participants from each new sample are chosen from a previous segment of the sample. Researchers used both quantitative and qualitative approaches to investigate the phenomenon. The design works to capture more integrative and comprehensive findings regarding quantitative and qualitative data since the research questions can only be revealed using both data.

At first, researchers collected the quantitative data using a closed-ended questionnaire. The technique is worked to test the hypothesis and answer the two research questions. After that, we sorted the participants who answered the questionnaire to be included in the selected semi-structured interview. The participants became the source for qualitative data, and it can be used to support the quantitative data as well as work for triangulating the findings.

Qualitative analysis is applied to explore deeper the phenomenon that has been investigated. A semi-structured interview is constructed and
addressed to the selected participant. Creswell (2018) claims that mixed-method qualitative data typically contains open-ended questions without predefined answers, whereas quantitative data typically contains closed-ended questions like those on surveys or psychological tests.

In this research, we draw the data from 47 participants that enrolled in the scientific writing class. All the students are students from Universitas Terbuka, majoring in English Education. A nested sampling design is chosen since it can connect the link between quantitative and qualitative sampling. Forty-eight students already responded to the 16 questions in the questionnaire which are specifically divided into 3 major categories: necessity, skill mastery, and learning process.

The divisions are important to capture how students perceive as well as to prove the hypothesis. After extracting data from the questionnaire, we develop an interview protocol that fits with the process of collecting the needed information and can be used to dig deeper into students’ perceptions of scientific writing courses. Three students purposively were pointed as interviewees which were considered the most appropriate to answer and deliver the important information that researchers need.

RESULTS AND DISCUSSION

Quantitative analysis
In drawing the result of this study, we firmly classify three types of perceptions regarding the first result question and extract the data from the participants. A questionnaire on the perception is priorly delivered to the students.

Table 1. Questionnaire statement (Adopted from Cai in Alhojailan (2021))

<table>
<thead>
<tr>
<th>Categories</th>
<th>Mean</th>
<th>Deviation Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>NECESSITY</td>
<td>4.43</td>
<td>0.76</td>
</tr>
<tr>
<td>Skill mastery</td>
<td>3.07</td>
<td>0.81</td>
</tr>
<tr>
<td>Learning Process</td>
<td>1.98</td>
<td>1.24</td>
</tr>
</tbody>
</table>

The first finding shows that a 4.43 mean score was gained which confirmed the possible
assumption that a high positive perception toward the necessity of the scientific course. The argument is taken from Landell (Ghazal et al., 2018) that the range of the Likert score can be interpreted as the following table.

Table 3. Mean score interpretation

<table>
<thead>
<tr>
<th>Mean Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 – 2.33</td>
<td>Low</td>
</tr>
<tr>
<td>2.34 – 3.67</td>
<td>Moderate</td>
</tr>
<tr>
<td>3.68 – 5.00</td>
<td>High</td>
</tr>
</tbody>
</table>

The second finding is related to the skill mastery of scientific writing. Out of 47 participants, approximately 3.07 is the mean score. It is interesting to see that even though the students see the necessity of learning, they perceive the moderate value of internalizing scientific writing skills. The first and second findings in this study are not only able to answer how students perceive scientific writing but also endorse the hypothesis we have structured in this research. Although students see the necessity of scientific writing, they (seem to) fail to internalize the skill due to their moderate perception of the learning material.

In line with the finding above, the last finding shade light on the possible assumption on the backstory of the moderate perception toward the learning process. It displayed only a 1.98 value we can get from the questionnaire regarding students’ perception toward learning management. The score is considered a low perception. It means that the moderate process of learning is possible and can also come from low perceived learning management which students see in the learning management itself. Finally, we can see the pattern that first students see scientific writing as a necessary skill, yet they perceived the learning process as not that important and they poorly perceive learning management. Of course, we need to go deeper into the case, therefore we conducted a qualitative method as it is also necessary to validate the process through triangulation and see the causal inference.

To sum up, we can see two salient patterns from the result. The first pattern is related to the perspective of scientific writing course necessity. The second pattern is the level of students in absorbing the material and experiencing the subject. Based on the quantitative descriptive inference shows the statistical fact that students have a highly positive perception toward the necessity of the course, however, they only have moderate even low for skill internalization and learning management. It means that there are unique patterns revealed after analyzing the data.

The students appeal to see the necessity, yet they do not absorb and enjoy the course.

If we connect it with both research questions. It answered the first research question that there are three level on how students perceive the course and students do see the subject as necessary. Meanwhile for hypothesis, it is found that students perception on scientific writing courses as essential for them, but they are not effectively absorbing the material. It is also in line with a hypothesis which researchers had developed that students feel it is necessary to learn the course but fail to internalize the skill.

**Qualitative analysis**

To supplement the finding, we also contend with qualitative data. Addressing 4 selected participants to be interviewed, we try to explore the backstory of their perception of scientific writing. It is found that the majority positively perceived the necessity of the course. It was a good sign that the students’ perception indicates a linear sense with the hypothesis where students recognize the importance of the course. We can take a look at one example related to a question, asking their opinion on whether scientific writing is necessary. All interviewees said it is either for skill improvement or to elevate job opportunity reason. Furthermore, the students are asked do they still want to have the course if they can choose. Once again, all the participants see the importance of the course and proceed to have the course in the future. By mean that they did not see this course as solely compulsory. They do see the urgency of the course.

However, a solid response tends to diverge within the third question when they have been asked about the difficulty level of the course as it is marked by a previous study. The response shows that, out of four, thinks it is not difficult although it comes with a condition. For example, one interviewee said:

"Not so difficult, because whether or not a material is difficult depends on the delivery and explanation of each supervisor. And I got a very competent mentor, she was able to provide very extraordinary explanations and guidance, so that I could understand the material well.” (Interviewee)

From the response, the availability of a professional tutor is a must. The student implicitly recognizes the difficulty of the course, yet the responsive and skillful tutor who can sense students' feelings of loss during the class is the key
to neglecting the fact that the course is indeed difficult for students. The second and third responses also indicate a similar perception. For instance, one student claimed that the material is not essentially difficult since the teacher actively helps the students as the script below:

Interviewer: “Is it difficult to learn the material in a scientific writing course? Why?”
Interviewee: “No, because the teacher is very helpful.”

The third interviewee not only showed that a competent tutor is important but also an essential factor that can lead students to negative or positive perceptions of whether the subject is difficult or not. The fact that the material is difficult will not be perceived that way as long as the tutor knows what he/she is doing. The tutor in the scientific writing class tends to move their role into more centric within the learning process and it happens since the students rely on them in solving the confusion and tension related to the difficult subject. From that point of view, we can see that the subject is indeed difficult, and students are experiencing the problem. However, the tutor can bridge the gap well.

It will be a different case if the teacher is not as good as he/she is supposed to be. The important position of the tutor in the learning process also shows how students answer the question “Mention the things that you think is not good in term of learning management”. Although the function of the question is to assess their perception of the learning management that has been maintained by learning systems such as Moodle. However, students tend to connect it with the role of the teacher. One of the participants claims that there is no problem during the first course in the last semester since the tutor is competent. Once again, the core concern of the scientific course learning process is related to the tutor. It is also shown by another participant who links all issues of learning to the tutor-teaching process.

The last response related to the question is more direct and clearer regarding the difficulty of the lesson. The interviewee said it is difficult since this is new course as it is stated below:

Interviewer: “Is it difficult to learn the material in a scientific course? Why?”
Interviewee: “I think yes because it is new for me, so I have to force myself to read and write more.”

From the discussion above, several findings are underlined. First, the necessity of the course is indisputable. It means that they can convincingly answer the first research question. Second, despite the positive perception toward the course, students feel the difficulty of the lesson and it means they face an issue to internalize the material. However, it seems to be vague due to the tutor’s competence in handling the learning process. Third, we can also see how central the role of the tutor is during the scientific writing process which can generate advantages as well as disadvantages.

The advantages can be seen from the tutor’s ability to relieve the tension during the learning and help the teacher to focus on the benefit and ignore the difficulty. However, it also somehow prevents students from being more independent learning since they will rely too much on the tutor which is not the students centered learning. The development of learning is supposed to bring students into autonomous learning where the students will keep improving even though the formal learning process has ended.

The last finding shows that the hypothesis somehow captures the pattern where students will see the necessity, however, fails to internalize the skills. Due to the existence of a competent teacher, students neglect the fact they unsuccessfully absorbed the writing skill. The argument meets with quantitative data findings that show only moderate perception toward the internalization of scientific writing skills by the students.

CONCLUSION
Scientific writing in Universitas Terbuka Indonesia as a new and compulsory course is trapped under a puzzle notion of whether the course is necessary, or whether it is compulsory. This study explores the phenomenon and finds several interesting findings which are in line with the designated research questions as well as the hypothesis.

The first finding proves that the hypothesis is somewhat in line with the fact that students realize the necessity of the course. However, they face trouble in internalizing the skill from the course. From quantitative data, students show three types of perspectives that can be used to answer both research questions. The first research question is on how students perceive scientific writing as a compulsory course. It is found that the students have a solid perception of the importance of the course since it contains necessary knowledge for the student. Although when absorbing the learning material into a useful writing skill, students are facing a problem and it happens due to learning
management from the technological teaching support area. Even though they claim, based on a qualitative in-depth interview, that the students praise a high contribution to the competent tutor. The existence of a competent tutor based on the interview result can help students overcome the learning barrier. The second question which asks does scientific writing is crucial is firmly answered yes and it is endorsed by quantitative and qualitative data. The quantitative claim a high perspective on the necessity of the course while the first question in an in-depth interview said a similar view.

As the purpose of this study is to test and answer the research question on puzzling notions that occur in writing scientific courses, it has met the objective. Nevertheless, it has several flaws that can be a good start for gap spotting in a similar type of research. We can see that this study applied mixed methods since we want to explore comprehensively the issue, yet it does mean the best method to use.

Solely using qualitative research or quantitative research with a big homogeneous sample can capture another side that this research missed. In terms of external validity, of course, this research is something to be concerned about, since this research is a case study. All the samples are taken from an environment that experiences a certain kind of research. We can see that this study applied mixed methods since we want to explore comprehensively the issue, yet it does mean the best method to use.

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