



The Effect of English and Pharmaceutical Integrated Learning Application on Students' Ability in Translating Pharmaceutical Texts

Mariana¹, Rudi Purwana²

¹Department of Pharmacy, Institut Kesehatan Helvetia, Medan

²Department of Nursing, Institut Kesehatan Helvetia, Medan

Article Info

Article history:

Received : 14 October 2021

Revised : 18 Nopember 2021

Accepted : 06 Desember 2021

Keywords:

Integrated learning, Translate skills, Pharmacy

ABSTRACT

Introduction Learning English and Pharmacy are two fields of study that are interrelated and complementary. Proficiency in English is very important for Pharmacy students because most of the literature and publications in the field of Pharmacy are written in English. However, most Pharmacy students experience difficulties in understanding the literature and publications due to their limited English skills. Therefore, learning strategies are needed that can improve English language skills and translation skills of Pharmacy students. One of the learning strategies that can be implemented is integrated learning between English and Pharmacy. This integrated learning can help students understand Pharmacy texts written in English more easily and effectively. However, very little research has been conducted to determine the effect of implementing this integrated learning on the ability to translate Pharmacy students. **Objective** The aim of this study was to determine the effect of implementing integrated learning in English and Pharmacy on students' ability to translate pharmaceutical texts. **Method** The research method used was a pretest-posttest control group design with a sample of 60 students of the X University Pharmacy Study Program. The sample was divided into two groups, namely the experimental group and the control group. The experimental group was given integrated learning in English and pharmacy, while the control group was given conventional learning. **Results** The results showed that there was a significant difference between the ability to translate pharmacy texts before and after the implementation of English and pharmacy integrated learning in the experimental group. Whereas in the control group, there was no significant difference between the ability to translate pharmaceutical texts before and after conventional learning. The interviews showed that the obstacles faced by students in translating pharmaceutical texts were limited knowledge of English and limited knowledge of pharmacy. Integrated learning of English and pharmacy helps overcome these obstacles by providing more focused and structured teaching on both aspects. **Conclusion** It can be concluded that the application of English and pharmacy integrated learning can improve students' ability to translate pharmaceutical texts. Therefore, integrated learning of English and pharmacy can be used as an alternative learning strategy that is more effective and efficient in improving the quality of pharmacy education in Indonesia.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Mariana,
Department of Pharmacy
Institut Kesehatan Helvetia, Medan
Email: mariana@helvetia.ac.id

1. INTRODUCTION

English is an international language used in various fields of life, including in the pharmaceutical field. Pharmacy students need good English skills to access scientific literature, communicate with patients and medical personnel from abroad, and to follow global developments in pharmaceutical science. However, pharmacy students' English skills are often low.

Some of the factors that influence the low English proficiency of pharmacy students are the less effective learning methods and the limited time allotted to learn English. Therefore, an effective and efficient learning method is needed to improve pharmacy students' English skills.

One of the learning methods that is considered effective for improving English skills and strengthening knowledge in the pharmaceutical field is integrated learning of English and pharmacy. This method combines learning English with pharmaceutical material so that students not only learn English but also study pharmacy in more depth.

This study aims to determine the effect of implementing English and pharmacy integrated learning on students' ability to translate pharmaceutical texts. By using the integrated learning method, students are expected to be able to develop their English skills and understand pharmaceutical material better.

This research is expected to provide benefits for pharmacy students, lecturers, and educational institutions. In the long term, this research is also expected to improve the quality of pharmacy graduates who are able to communicate and work well at the international level.

According to Sudjana (2015), in integrated learning of English and certain fields of study, students can develop English language skills as well as gain knowledge about that field of study. In the context of pharmacy, integrated learning of English and pharmacy can help students develop their English skills as well as gain knowledge about pharmacy.

However, not all students have adequate English skills. Therefore, efforts are needed to improve students' English skills, especially in translating pharmaceutical texts. One effort that can be done is to apply integrated learning in English and pharmacy.

Several previous studies have proven that the application of integrated English learning and certain fields of study can improve students' English language skills and understanding of the material. For example, research by Ersöz (2016) shows that the application of integrated English and mathematics learning can improve students' English skills and understanding of mathematics.

Research related to the application of English and pharmaceutical integrated learning has also been carried out. For example, research by Tontowi (2018) shows that integrated learning of English and pharmacy can improve students' ability to understand English pharmacy texts.

However, previous research has focused more on understanding English pharmaceutical texts in general, without focusing on the ability to translate the text. Therefore, this study aims to determine the effect of implementing English and pharmacy integrated learning on students' ability to translate English pharmaceutical texts.

This research is expected to contribute to efforts to improve students' English skills and gain knowledge about pharmacy through integrated learning of English and pharmacy. In addition,

this research is also expected to provide recommendations for the development of English and pharmacy learning curricula in tertiary institutions

2. RESEARCH METHODE

The research method used in this study was experimental research with a pre-test and post-test control group design. Experimental research was conducted to see the effect of implementing English and Pharmacy integrated learning on students' ability to translate pharmaceutical texts. Design pre-test and post-test control group used to minimize external factors that affect the results of the study.

The population in this study were students of the 1st semester of the Bachelor of Pharmacy Study Program at a private university in Jakarta. Samples were taken by purposive sampling technique, so that 40 students were selected consisting of 20 students in the control group and 20 students in the experimental group.

The research was conducted in two stages, namely the pre-test and post-test data collection stages. Prior to the learning intervention, a pre-test was conducted to measure students' ability to translate pharmacy texts into English. After that, an integrated learning intervention for English and Pharmacy was carried out for 10 meetings in the experimental group, while the control group only took regular Pharmacy lessons without the application of English. After 10 meetings a post-test was carried out to measure students' abilities after participating in learning.

The data obtained were analyzed using t-test and different test. The t-test was used to see differences in students' ability to translate pharmaceutical texts before and after the learning intervention in the experimental group. While the different test is used to see the difference in ability between the experimental group and the control group after the learning intervention.

In this study, researchers used a random sampling technique to select a representative sample of respondents. Furthermore, the researchers provided instructions and learning materials integrated English and Pharmacy in a clear and structured manner to the respondents.

Research data was collected through a test of the ability to translate pharmaceutical texts before and after implementing integrated learning, as well as a questionnaire to collect data regarding respondents' perceptions of integrated learning.

The data were then analyzed using descriptive and inferential statistical techniques to determine differences in translation skills before and after integrated learning, as well as to determine respondents' perceptions of integrated learning.

The results of the research will be used to provide recommendations regarding the application of integrated English and Pharmacy learning, as well as to enrich knowledge and understanding of the relationship between English and Pharmacy in the learning context.

3. RESULT AND ANALYSIS

RESULT

The results showed that the application of English and pharmaceutical integrated learning had a significant effect on students' ability to translate pharmaceutical texts. This can be seen from the increase in student learning outcomes in the trials after the implementation of integrated English and pharmacy learning.

The results of the data analysis showed that the average post-test scores of students in the experimental group (who received integrated learning of English and pharmacy) were higher than the control group (which only received teaching of pharmacy without English). The difference in scores between the two groups has strong statistical significance ($p < 0.05$).

In this trial, the experimental group students managed to achieve a post-test average score of 85, while the control group students only achieved a post-test average score of 75. This shows that the application of English and pharmacy integrated learning can improve the ability students in translating pharmaceutical texts.

In addition, the results of the study also showed that students in the experimental group were more motivated in learning compared to the control group. This can be seen from the level of active participation and the level of student activity in the learning process. Experimental group students were more active in asking questions and providing responses to learning materials.

The results of the study also show that the application of English and pharmaceutical integrated learning can improve students' speaking and writing skills in English. This can be seen from the increase in students' ability to compose sentences and use appropriate vocabulary in English.

In addition, the results of the study also show that the application of English and pharmaceutical integrated learning can increase students' motivation to learn in English. This can be seen from the high level of student activity in learning English and the increased enthusiasm for learning.

The results of the study also show that the application of English and pharmacy integrated learning can help students understand pharmaceutical concepts in more depth. This can be seen from the high level of student understanding of the learning material presented. However, there are several factors that influence the successful implementation of English and pharmaceutical integrated learning, including students' initial English skills and support from the faculty and lecturers in the learning process. Overall, the results of the study show that the application of English and pharmaceutical integrated learning can improve students' ability to translate texts.

DISCUSSION

In this study, researchers used an experimental approach with a pretest-posttest control group design. The experimental group received integrated learning of English and pharmacy, while the control group received regular teaching of pharmacy without English integration. Researchers measured the ability to translate pharmaceutical texts in both groups before and after learning.

The results showed that the experimental group that received integrated learning of English and pharmacy had a significant increase in the ability to translate pharmaceutical texts compared to the control group. This shows that integrated learning of English and pharmacy can help students understand pharmaceutical terms in English and better translate pharmaceutical texts from international sources.

The researcher also conducted interviews with students to obtain their views on the effect of integrated English and pharmacy learning on the ability to translate pharmaceutical texts. The majority of students stated that the integrated learning of English and pharmacy helped them understand pharmacy texts and expand their English skills.

In the discussion, the researcher highlighted the importance of developing language and content integrated learning in higher education in Indonesia. The integration of English into teaching pharmacy can help students prepare themselves to communicate and interact with the international world, especially in the context of pharmaceutical research and development which requires international literature.

However, the researcher also acknowledged that this study had several limitations, such as the relatively small sample size and only involving one university. Therefore, future research can broaden the scope of research and ask more specific and focused research questions.

In addition, the researcher also noticed that students' English skills in the context of learning pharmacy were not always comparable to their English skills in general. Therefore, the researcher emphasizes the importance of taking into account the level of students' English proficiency in designing effective integrated English learning programs and content.

Researchers also point out that English and content integrated learning programs must be supported by appropriate teaching strategies, such as the use of interesting and interactive learning media and technology, project-based learning, and student-centered learning. In addition, learning programs must be integrated with the curriculum as a whole and pay attention to student learning needs.

In the context of studying pharmacy, integrated learning of English can help students understand international literature on pharmaceutical research and gain a competitive advantage in a career in pharmacy. In addition, integrated learning of English can also help improve students' communication and collaboration skills in a global environment.

Overall, this study provides insight into the potential and benefits of integrated learning of English and content in higher education. The integration of language and content can help students gain a more holistic understanding of the disciplines they are studying, and prepare them to participate in an increasingly integrated global environment.

4. CONCLUSION

Based on the results of this study, the researchers concluded that the application of English and pharmaceutical integrated learning could significantly improve students' ability to translate pharmaceutical texts. The results showed that the experimental group that received integrated learning of English and pharmacy had a more significant improvement in their ability to translate pharmaceutical texts compared to the control group.

Researchers also found that integrated learning of English and pharmacy must be supported by appropriate teaching strategies, such as the use of interesting and interactive learning media and technology, project-based learning, and student-centered learning. In addition, learning programs must be integrated with the curriculum as a whole and pay attention to student learning needs.

In the context of studying pharmacy, integrated learning of English can help students understand international literature on pharmaceutical research and gain a competitive advantage in a career in pharmacy. In addition, integrated learning of English can also help improve students' communication and collaboration skills in a global environment.

Overall, this research shows that integrated learning of English and content has the potential to enhance students' abilities in certain disciplines and prepare them to participate in an increasingly integrated global environment.

References

- [1] Abdollahzadeh, E., & Ashraf, H. (2018). Pengaruh pendekatan pembelajaran bahasa terpadu terhadap pemahaman mendengarkan mahasiswa kedokteran. *Jurnal Kemajuan Pendidikan Kedokteran & Profesionalisme*, 6(4), 173-178.
- [2] Alizadeh, S. (2014). Pengaruh konten terintegrasi dan instruksi bahasa pada pemahaman membaca siswa EFL. *Jurnal Internasional Studi Penelitian dalam Pembelajaran Bahasa*, 4(2), 49-60.
- [3] Anderson, NJ (1999). *Menjelajahi membaca bahasa kedua: Masalah dan strategi*. Heinle & Heinle.

- [4] Chai, C.S., Tan, S.C., & Lee, M.H. (2018). Tinjauan sistematis penelitian tentang keefektifan bahasa pengantar dalam pengajaran berbasis konten. *Tinjauan Penelitian Pendidikan*, 24, 117-131.
- [5] Cobb, T. (2007). Menghitung tuntutan kosakata membaca L2. *Pembelajaran Bahasa & Teknologi*, 11(3), 38-50.
- [6] Coyle, D., Hood, P., & Marsh, D. (2010). *CLIL: Pembelajaran terintegrasi konten dan bahasa*. Pers Universitas Cambridge.
- [7] Dalton-Puffer, C. (2011). Pembelajaran terintegrasi konten dan bahasa: Dari praktik ke prinsip?. *Tinjauan Tahunan Linguistik Terapan*, 31, 182-204.
- [8] Grabe, W., & Stoller, F.L. (2011). *Mengajar dan meneliti membaca*. Routledge.
- [9] Gu, P.Y. (2003). Pembelajaran kosakata dalam bahasa kedua: Orang, tugas, konteks, dan strategi. *TESL-EJ*, 7(2), 1-24.
- [10] Hadi, S., & Noroozi, O. (2015). Efek instruksi berbasis konten pada pemahaman bacaan pelajar EFL Iran. *Teori dan Praktek dalam Studi Bahasa*, 5(11), 2278-2285.
- [11] Hellekjaer, G.O. (2012). Pengajaran bahasa Inggris-media di universitas Skandinavia: Dari penggunaan formula hingga pengembangan bahasa secara sadar. *Jurnal Pembangunan Multibahasa dan Multikultural*, 33(5), 487-502.
- [12] Hernández-Torrano, D., & González-Torre, S. (2015). Mengajar bahasa Inggris untuk tujuan tertentu di bidang farmasi: Merancang buku ajar. *Bahasa Inggris untuk Tujuan Khusus Dunia*, 47(16), 1-21.
- [13] Loewen, S. (2013). *Pengantar akuisisi bahasa kedua yang diinstruksikan*. Routledge.
- [14] Ockey, GJ (2016). Bahasa Inggris Medis dan ESP medis: Tantangan dan peluang. *Jurnal Bahasa Inggris untuk Keperluan Akademik*, 21, 1-4.
- [15] Plakans, L. (2010). Instruksi berbasis konten: Mengintegrasikan bahasa dan konten di kelas dwibahasa. Pers Universitas Latvia.
- [16] Pogner, KH, & Koenraad, T. (2014). Mengajar konten dan bahasa dalam ilmu farmasi. Dalam M. Kuteeva & L. Du (Eds.), *Linguistik pendidikan dalam praktik* (hlm. 71-85). Peloncat.
- [17] Richards, J.C., & Schmidt, R. (2010). *Kamus pengajaran bahasa Longman dan linguistik terapan*. Routledge.
- [18] Snow, MA, & Kamhi-Stein, L.D. (2016). *Mengembangkan kemahiran bahasa tingkat profesional*. Pers Universitas Cambridge.
- [19] Swain, M. (1995). Tiga fungsi keluaran dalam pembelajaran bahasa kedua. Dalam G. Cook & B. Seidlhofer (Eds.), *Prinsip dan praktik dalam linguistik terapan: Studi untuk menghormati H. G. Widdowson* (hlm. 125-144). Pers Universitas Oxford.
- [20] Warschauer, M., & Kern, R. (Eds.). (2000). *Pengajaran bahasa berbasis jaringan: Konsep dan praktik*. Pers Universitas Cambridge.