

**DEVELOPING PHYSICS BILINGUAL LEARNING
MEDIA “VOCARELI” ON FLUID DYNAMICS
FOR SENIOR HIGH SCHOOL STUDENTS**

A THESIS



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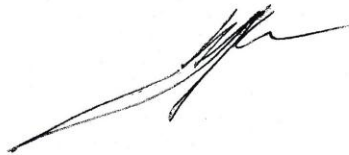
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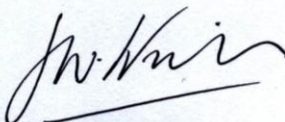


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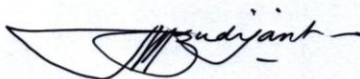
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ABSTRACT

IGNATIO BENIGNO: “Developing Physics Bilingual Learning Media “VOCARELI” on Fluid Dynamics for Senior High School Students”.
Advisors : **J.V. Djoko Wirjawan, Ph.D** and **Drs. Tjondro Indrasutanto, M.Si.**

Future challenges include the ability to use the English language in the fields of science, including physics and technology. The use of English in Physics learning is a controversial issue in Indonesia. It is usual to hear that learning Physics in the English language is difficult. This problem arises because the students have to read only the bilingual course books for learning Physics. Therefore, it is necessary to develop an instructional media equipped with audio and visual features which can attract the students' attention and motivate them in studying Physics in English.

This research aims to develop a bilingual learning media for senior high school students that can be used to strengthen Senior High School students' comprehension on Fluid Dynamics. Method used in this research is Research for Instructional Improvement (RII) that is oriented to the research on the development of bilingual multimedia learning products. The combination of media consist of text, animation, physics phenomena video, and features that can increase English language skills component in terms of vocabulary, reading, and listening (abbreviated VOCARELI). The results of this study is a “VOCARELI” Bilingual Learning Media on Fluid Dynamics topic, and stored in a compact disc (CD-Learning). This media has passed the validation in terms of material aspect, instructional aspect, and appearance aspect. This media was tried out by 21 students of St. Hendrikus Catholic Senior High School. Based on the questionnaire and its analysis, 28,6% students stated that this media is excellent and 71,4% students stated that this media is good for physics bilingual learning.

Keywords : Future challenges, Fluid Dynamics, VOCARELI, Bilingual learning, media.

ABSTRAK

IGNATIO BENIGNO: “Developing Physics Bilingual Learning Media “VOCARELI” on Fluids Dynamics for Senior High School Students”.
Pembimbing : **J.V. Djoko Wirjawan, Ph.D** dan **Drs. Tjondro Indrasutanto, M.Si.**

Tantangan masa depan mencakup kemampuan untuk menggunakan bahasa Inggris dan kemampuan dalam bidang sains, termasuk fisika. Penggunaan bahasa Inggris dalam pengajaran fisika merupakan isu kontroversial dalam masyarakat Indonesia. Sudah terbiasa terdengar bahwa belajar Fisika dengan bahasa Inggris merupakan hal yang sulit. Hal ini terjadi karena siswa terbiasa belajar hanya dengan menggunakan buku bilingual. Oleh karena itu, perlu pengembangan media pembelajaran yang dilengkapi dengan fitur audio dan visual yang dapat menarik perhatian siswa dan memotivasi mereka untuk belajar Fisika dengan bahasa Inggris.

Penelitian ini bertujuan untuk mengembangkan Media Pembelajaran Bilingual "VOCARELI" untuk siswa SMA yang dapat digunakan untuk memperkuat pemahaman siswa SMA pada pokok bahasan Fluida Dinamis. Metode yang digunakan dalam penelitian ini menggunakan metode penelitian pengembangan *Research for Instructional Improvement* (RII) yang berorientasi pada pengembangan produk pembelajaran multimedia bilingual. Kombinasi media terdiri dari teks, animasi, fisika fenomena video, dan juga fitur yang dapat meningkatkan kemampuan bahasa Inggris dalam hal *vocabulary*, *reading* dan *listening* (disingkat VOCARELI). Hasil studi yang berhasil dikembangkan adalah Media Pembelajaran Bilingual "VOCARELI" pada pokok bahasan Fluida Dinamis yang disimpan dalam *compact disc (CD-Learning)*. Media ini telah melalui validasi dalam hal materi, instruksional, dan penampilan. Media ini telah dicoba oleh 21 murid SMAK St. Hendrikus. Berdasarkan hasil angket dan analisis data, 28,6% siswa berpendapat bahwa media ini *Excellent*, dan 71,4% siswa menyatakan bahwa media ini baik untuk digunakan dalam pembelajaran bilingual Fisika.

Kata Kunci : Tantangan masa depan, Fluida Dinamis, VOCARELI, Pembelajaran bilingual, Media.