

ABSTRAK**PENGEMBANGAN MEDIA PEMBELAJARAN BERBASIS GIM
EDUKASI PADA MATERI METABOLISME KELAS XII**

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Pembelajaran jarak jauh yang dimulai pada tahun 2020 memerlukan media pembelajaran berbasis teknologi. Media pembelajaran berbasis teknologi saat ini sudah mulai digunakan, namun kurang bervariasi. Mengatasi permasalahan tersebut, diperlukan media pembelajaran yang lebih kreatif, inovatif serta informatif agar siswa mendapatkan pengalaman baru dalam belajar. Media pembelajaran harus sesuai dengan karakteristik siswa di generasi Z, yaitu lebih senang menghabiskan waktunya di dunia maya, salah satunya adalah bermain gim. Oleh karena itu, penelitian ini bertujuan untuk mengembangkan dan mengetahui kelayakan media pembelajaran gim edukasi pada materi metabolisme kelas XII.

Penelitian ini menggunakan model *Research and Development* menurut Borg and Gall dengan lima tahapan yaitu (1) potensi dan masalah, (2) pengumpulan data, (3) desain produk, (4) validasi produk, dan (5) Revisi produk. Produk berbentuk aplikasi gim berukuran 78 MB yang terdiri dari 6 *level* permainan pada materi metabolisme khususnya respirasi aerob dan anaerob. Produk gim edukasi dapat dipasang pada *smartphone OS android* minimal versi 4. Gim edukasi divalidasi oleh 4 validator yaitu ahli materi, ahli media, dan dua guru biologi kelas XII dengan perolehan skor rata-rata 3,6. Perolehan skor tersebut masuk ke dalam kategori “Sangat Baik” dan layak diujicobakan secara terbatas setelah melakukan perbaikan berdasarkan komentar dan saran dari validator. Produk akhir gim edukasi diunggah ke *google play store*.

Kata kunci: *Research and Development (R&D), gim edukasi, metabolisme.*

ABSTRACT**DEVELOPMENT OF EDUCATION GAME BASED LEARNING AS A MEDIA TO TEACH METABOLISM MATERIAL FOR 12th GRADE STUDENTS**

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Distance learning starting in 2020 requires technology-based learning media. Currently, technology-based learning media have begun to be used, but they are less varied. To overcome these problems, more creative, innovative, and informative learning media are needed so that students get new experiences in learning. Learning media must meet the characteristics of students in generation Z, which is more like spending their time in cyberspace, one of which is playing games. Therefore, this study aims to develop and determine feasibility of educational game learning media for class XII metabolism material.

This study uses the Research and Development model according to Borg and Gall with five stages, namely (1) potential and problems, (2) data collection, (3) product design, (4) product validation, and (5) product revision. The product is in the form of a game application a size of 78 MB consisting of 6 levels of play on metabolic materials, especially aerobic and anaerobic respiration. Educational game products installed on Android OS smartphones at least version 4. Educational games have been validated by 4 validators, namely material experts, media experts, and two class XII biology teachers with an average score of 3.6. The score obtained is in the "Very Good" category and deserves limited to be tested after making improvements based on comments and suggestions from the validator. The final product of the educational game uploaded to the google play store.

Keywords: *Research and Development (R&D), educational games, metabolism*