

**PENGEMBANGAN MEDIA PEMBELAJARAN VIDEO GAME
PENCEMARAN AIR UNTUK MENINGKATKAN PENGUASAAN KONSEP
DAN KETERAMPILAN METAKOGNITIF SISWA**

ABSTRAK

Penelitian pengembangan (*Research and Development*) ini bertujuan untuk mengembangkan media pembelajaran *video game* yang dapat meningkatkan penguasaan konsep dan keterampilan metakognitif siswa. Penelitian dilaksanakan disalah satu SMP Negeri di Kabupaten Bandung Barat pada 1 kelas VII dengan 22 siswa. Instrumen yang digunakan berupa, tes penguasaan konsep, tes keterampilan metakognitif, angket validasi ahli diberikan kepada ahli media dan materi untuk melihat kelayakan media, dan angket respon siswa. Berdasarkan hasil analisis data penelitian didapatkan bahwa: 1) Pengembangan desai video game pencemaran Air melalui beberapa tahapan yaitu terdiri dari : analisis kebutuhan, membuat desain media, pembuatan media, validasi oleh ahli materi, ahli media, dan pengguna, revisi produk, implementasi, dan evaluasi. Sehingga dihasilkan desain video game untuk meningkatkan penguasaan konsep dan keterampilan metakognitif dengan karakteristik terdiri dari; (1) masalah, (2) tantangan tugas yang harus diselesaikan /tujuan yang harus dicapai, (3) Aturan, (4) peran karakter, (5) lingkungan gaming dimana para pemain berinteraksi, (6) evaluasi, 2) media pembelajaran video game secara umum masih belum dapat memfasilitasi penguasaan konsep siswa, tetapi terdapat konsep yang dapat difasilitasi lebih baik oleh game yaitu konsep ekosistem, siklus air, dan kualitas air, game juga memfasilitasi lebih baik kemampuan memahami (C2), serta dapat memfasilitasi kemampuan menganalisis (C4), setelah bermain game siswa mampu membangun model mental mengenai konsep Interaksi Makhluk hidup dan lingkungan, 3) media pembelajaran video game secara umum masih belum dapat memfasilitasi keterampilan metakognitif siswa, tetapi terdapat keterampilan metakognitif yang dapat difasilitasi lebih baik oleh game yaitu keterampilan *planning* dan *evaluating*, 4) Respon siswa sangat baik terhadap *game* yang telah dikembangkan.

Kata Kunci : *media pembelajaran interaktif, video game IPA, keterampilan metakognitif, penguasaan konsep*

WATER POLLUTION VIDEO GAME DEVELOPMENT TO IMPROVE STUDENTS' MASTERY OF CONCEPT AND METACOGNITIVE SKILLFULLNESS

ABSTRACT

This Research and Development (R & D) study aims to develop video game as instructional media that can improve the students' mastery of concepts and metacognitive skillfullness. This study was set in a junior high school seventh-grade classroom in West Bandung regency, involved 1 class with 22 students. Mastery of concept assessment including multiple choice and draw an environment rubric that was developed, a questionnaire instrumernt, metacognitive Activities Inventoy will focuses on students' metacognitive skillfullness, expert validation questionnaire given to the expert media and content, was employed to examine feasibility of video game as instructional media, and student questionnaire responses,was employed to examine student response to video game as instructional media. Based on the analysis of data: 1) the procedure of this video game design development is doing preliminary research , design media , media creation , validation by content experts , media experts , and users , the revision of the product , and product trials, video game design characterized by; conflict , Action - Domain Link , Rule , fantasy , Representation , Debriefing, 2) this study stated that in general, learning science by using video game are still not able to facilitate mastery of concept of students, but there were concepts that can be better facilitated by the game, that is the concept of ecosystems, water cycle and water quality, ability to understand (C2) also can be better facilitated by the game, and Educational games facilitate the ability to analyze (C5), and after playing the game students are able to build a metal model of the interaction of living beings and the environment concept, 3) video games in general are still not able to facilitate the students' metacognitive skillfullness, but there were metacognitive skills that can be better facilitated by the game, that is planning and evaluating skills, 4) student response to video game game that has been developed is on very good category.

Keywords : *Interactive instructional media, science video game,metacognitive skillfullness, mastery of concepts*

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