

**PENGEMBANGAN MODUL MATA PELAJARAN SISTEM UTILITAS
BANGUNAN GEDUNG KELAS XI SEMESTER 1 PROGRAM KEAHLIAN
KONSTRUKSI GEDUNG SANITASI DAN PERAWATAN
DI SMK N 1 SEYEGAN**

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ABSTRAK

Penelitian ini bertujuan untuk: (1) mengembangkan modul pembelajaran Sistem Utilitas Bangunan Gedung Program Keahlian Konstruksi Gedung Sanitasi dan Perawatan. (2) mengetahui hasil dan tingkat kelayakan yang diperoleh dari pengujian validasi modul sebagai sumber belajar Sistem Utilitas Bangunan Gedung oleh ahli media, ahli materi, dan guru mata pelajaran.

Penelitian ini merupakan penelitian pengembangan (*Research and Development*). Desain penelitian yang digunakan mengacu pada model pengembangan 4-D model dengan empat tahapan pokok yaitu: (1) pendefinisian (*define*), (2) perancangan (*design*), (3) pengembangan (*develop*), (4) penyebaran (*disseminate*). Dalam penelitian ini, peneliti melakukan semua tahap pengembangan 4D model kecuali pada tahap *disseminate* yang tidak melibatkan siswa. Jenis data yang digunakan adalah kuantitatif dan kualitatif serta teknik analisis data dalam penelitian ini adalah deskriptif kuantitatif.

Dari penelitian ini diperoleh hasil yaitu: (1) modul pembelajaran dalam bentuk cetak yang didesain secara interaktif, mendetail dan mudah dipahami ini berisikan halaman sampul, kata pengantar, daftar isi, daftar gambar, materi yang terdiri dari empat bab, kunci jawaban dan daftar pustaka, dengan ukuran kertas A4, berat kertas 80 gram, jenis huruf Arial, font tulisan 12, spasi 1,5 dan margin atas 4 cm, bawah 3 cm, kiri 4 cm, kanan 3 cm, (2) tingkat kelayakan modul yang divalidasi oleh dosen PTSP UNY dan guru mata pelajaran Sistem Utilitas Bangunan Gedung SMK N 1 Seyegan selaku ahli materi dan ahli media. Hasil penilaian tingkat kelayakan modul dari ahli materi I memperoleh tingkat kelayakan sebesar 4,32 (sangat layak) dan ahli materi II memperoleh tingkat kelayakan sebesar 4,64 (sangat layak). Penilaian tingkat kelayakan oleh ahli media I sebesar 4.43 (sangat layak) dan ahli media II sebesar 4,5 (sangat layak). Dari hasil tersebut modul dikategorikan sangat layak digunakan untuk bahan pembelajaran peserta didik di SMKN 1 Seyegan.

Kata kunci: *pengembangan, modul, utilitas bangunan gedung.*

**MODULE DEVELOPMENT IN TEACHING SYSTEM FOR CLASS XI
BUILDING UTILITY SEMESTER 1 EXPERTISE OF SANITATION
BUILDING CONSTRUCTION AND MAINTENANCE IN SMKN 1 SEYEGAN**

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ABSTRACT

The purpose of this study was designed to: (1) develop learning modules building utility to program sanitation building construction and maintenance in SMK 1 Seyegan. (2) determine the results obtained and the feasibility of the module validation testing as a learning resource by the building utility media expert, subject matter expert, and subject teachers.

This research is a research development (Research and Development). The research design used in the 4-D model development model with four main steps namely: (1) definition stage, (2) design stage, (3) development stage, (4) dissemination stage. In this study researchers conducted all stages of developing the 4D model. In this research, researchers conducted all stages of the development of 4D models except at the disseminate stage that does not involve students. The type of data used is quantitative and qualitative. Data collection was carried out using a questionnaire. The data analysis technique in this research is quantitative descriptive.

Based on the results of the study found that: (1) modules in printed form that are designed in an interactive, detailed and easy to understand manner containing cover pages, preface, table of contents, list of pictures, material consisting of five chapters, answer key and bibliography, by A4 paper size, 80 gram paper weight, Arial typeface, 12 fonts, 1.5 spaces and 4 cm top margin, 3 cm bottom, 4 cm left, 3 cm right, (2) The module feasibility level were validated by PTSP lecturers and teacher of the Building Utility System in SMK N 1 Seyegan as material and media experts. The results of the module feasibility level by material expert I, the feasibility level reached 4.32 (very feasible) and material expert II, the feasibility level reached 4.64 (very decent). The value of the level of eligibility by media experts is 4.43 and media expert II is 4.5 (very decent). From these results the module are categorized as very appropriate to be used for learning materials for students in SMKN 1 Seyegan.

Keywords: *development, modules, building utility.*