

ABSTRAK

Tujuan dari penulisan skripsi ini adalah (1) untuk mengenal fasilitas yang dimiliki *website* www.calculus.net/ci2/ dan pemanfaatannya untuk pembelajaran dengan pokok bahasan aturan sinus dan aturan kosinus, (2) mengetahui penyusunan suatu modul pembelajaran khususnya pada materi aturan sinus dan aturan kosinus (yang meliputi isi materi, urutan pembelajaran dan metode penyampaian materi) berbantuan *website* www.calculus.net/ci2/, (3) dan untuk mengetahui hasil uji coba penggunaan modul pembelajaran pada materi aturan sinus dan aturan kosinus berbantuan *website* www.calculus.net/ci2/ dalam hal keterlibatan siswa, prestasi siswa, dan pendapat siswa terhadap pelaksanaan pembelajaran berbantuan *website* www.calculus.net/ci2/.

Website www.calculus.net/ci2/ berisi materi pembelajaran matematika untuk topik prakalkulus, kalkulus dan matematika tingkat lanjut. Selain itu terdapat penjelasan tentang bantuan bagi siswa/instruktur, perangkat kurikulum, teknologi dalam pembelajaran matematika, penilaian, aplikasi ilmu matematika di berbagai bidang, ilmu kependidikan dan permainan. Pada skripsi ini, contoh pemanfaatan *website* dibuat dalam bentuk modul pembelajaran aturan sinus dan aturan kosinus.

Langkah-langkah penyusunan modul pembelajaran berbantuan *website* adalah memeriksa apakah *website* merupakan *website* yang aktif (hidup), mengeksplorasi isi dan fasilitas yang dimiliki *website*, menganalisa apakah isi materi, urutan pembelajaran, dan metode pembelajaran dalam *website* sesuai dengan kurikulum yang berlaku di sekolah lalu membuat modul yang sesuai dengan kaidah yang berlaku.

Ujicoba dilaksanakan pada tanggal 25 – 26 Januari 2006 pada siswa kelas XI SMUK Sang Timur Yogyakarta dengan mengambil sampel terhadap 8 siswa. Instrumen yang digunakan adalah lembar pengamatan, kuesioner, LKS dan lembar evaluasi. Data keterlibatan siswa diperoleh dari hasil observasi, data tentang pendapat siswa terhadap pelaksanaan pembelajaran berbantuan *website* www.calculus.net/ci2/ diperoleh dari kuesioner yang diisi siswa setelah pembelajaran dan data prestasi diperoleh dari LKS dan lembar evaluasi yang dikerjakan siswa.

Hasil dari ujicoba ini mengindikasikan bahwa aspek keterlibatan dan prestasi siswa selama pembelajaran aturan sinus sangat aktif dan tinggi, sedangkan untuk aturan kosinus aspek keterlibatan dan prestasi siswa kurang aktif dan cukup rendah. Hal ini mungkin disebabkan karena materi aturan kosinus lebih sulit atau materi kosinus yang ada dalam *website* tidak begitu dipahami. Lebih dari separuh siswa berpendapat bahwa isi modul, kejelasan dan kelengkapan materi dalam *website* sudah sistematis, jelas dan lengkap. Kesulitan yang dialami siswa adalah bahasa yang digunakan (bahasa Inggris) dan waktu yang tersedia dalam pembelajaran kurang mencukupi. Walaupun ada kendala dalam bahasa dan waktu, dilihat dari hasil ujicoba ada indikasi bahwa pembelajaran berbantuan *website* www.calculus.net/ci2/ dapat diterapkan di sekolah.

ABSTRACT

The aims of this thesis were to know (1) facilities and the application of the website of www.calculus.net/ci2/ on the topic of sine rule and the cosine rule, (2) the construction of a teaching and learning module on the topic of sine rule and the cosine rule (including the substances, teaching and learning order, and the extending methods) by receiving aid of the website of www.calculus.net/ci2/, (3) the trial result effect, from learning the program, on student involvement, their study achievement and their opinion about implementation teaching and learning by receiving aid of the website of www.calculus.net/ci2/.

Website of www.calculus.net/ci2/ contains mathematics teaching and learning material such as precalculus, calculus and advanced mathematics topics. It also contains the explanations of students/instructor assistance, curriculum equipment, technology, evaluation, mathematics application on the other sciences, education science and the games. In this thesis, website application was made as the sine rule and the cosine rule teaching and learning modules.

The construction of teaching and learning modules by receiving aid of website was made by examining the website; exploring website contents and facilities; analyzing the compatibility of the substances, teaching and learning order, teaching and learning methods of the website with the school curriculum; and constructing the module according to prevail principle.

The trial was conducted on January, 25th – 26th 2006 using 8 students from class XI SMUK Sang Timur Yogyakarta. The instruments used were an observation sheet, a questionnaire, LKS and evaluation sheet. The data of student's involvement were obtained from observations, students opinion about implementation teaching and learning by receiving aid of the website of www.calculus.net/ci2/ derived from questionnaire administered to the students as a follow up to the learning process, and the data of student achievement were obtained from LKS and the evaluation sheet (the test) administered to the students.

The results of this trial indicated that student's involvement in learning the sine rule was good and active enough, but they were not active enough in the cosine rule learning process. It might be caused by the cosine rule material which is more difficult than the sine rule material, or the cosine rule material in the website is not understood by the students. The opinion of more than half of the students about the implementation this teaching and learning : substances of module, clarity and comprehensiveness of the website substances were systematic, clear and comprehensive. The difficulties experienced by students were the language (English) and the short time of learning. Although there are language and time difficulties, but the trial result indicated that teaching and learning by receiving aid of the website of www.calculus.net/ci2/ was effective to be done at school.