

## ABSTRAK

PENGEMBANGAN INSTRUMEN TES UNTUK MENGUKUR  
KEMAMPUAN ANALISIS PESERTA DIDIK SMA  
PADA TOPIK PEREAKSI PEMBATAS

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Hasil belajar peserta didik dapat diukur menggunakan instrumen tes. Saat ini, instrumen tes yang dikembangkan di SMA PL Sedayu masih terbatas pada level C1, C2, dan C3. Selain itu, guru belum melatih peserta didik untuk menyelesaikan soal *HOTS*, sehingga kemampuan analisis peserta didik masih tergolong rendah. Penelitian ini bertujuan untuk: (1) menghasilkan produk berupa instrumen tes yang sesuai dengan model pengembangan Wilson, Oriundo, dan Antonio; (2) mengetahui validitas, efektivitas dan kepraktisan produk; dan (3) mengetahui kemampuan analisis peserta didik pada topik pereaksi pembatas. Metode penelitian yang digunakan adalah *Research and Development* (R & D) dengan model pengembangan Wilson, Antonio, dan Oriundo yang dimodifikasi menjadi tahap perancangan dan uji coba produk. Penelitian ini melibatkan 30 peserta didik kelas X MIPA 1. Instrumen penelitian yang digunakan adalah lembar wawancara, lembar validasi, butir soal esai, dan lembar angket respon peserta didik. Data dianalisis menggunakan SPSS 22, Statistik Aiken's V, model *Rasch*, Ms. Excel 2019, dan analisis deskriptif. Hasil penelitian menunjukkan bahwa: (1) produk cocok dikembangkan dengan model Wilson, Oriundo, dan Antonio yang dimodifikasi karena lebih efektif dan sesuai dengan prosedur pengembangan instrumen tes; (2) produk yang dikembangkan telah memenuhi kriteria validitas isi dengan rata-rata persentase sebesar 88,38% (valid); hasil analisis dengan *Rasch* menunjukkan 4 butir soal telah memenuhi kriteria validitas empiris dengan mengacu pada parameter *MNSQ*, *ZSTD*, *Pt Measure Corr*; *item reliability* sebesar 0,89 (bagus); tingkat kesukaran butir soal 1 dengan logit 0,70 (kategori sulit), sedangkan butir soal 2, 3, dan 4 dengan logit berturut-turut -0,04, -0,17, dan -0,49 (kategori mudah); daya pembeda butir soal 1, 2, dan 3 dengan nilai 0,24, 0,33, dan 0,34 (kategori cukup) dan butir soal 4 dengan nilai 0,6 (kategori baik); rata-rata nilai tes sebesar 56,10 yang menunjukkan bahwa produk tergolong efektif digunakan selama uji coba; rata-rata persentase respon peserta didik terhadap produk sebesar 81,75% yang termasuk kriteria praktis; dan (3) rata-rata kemampuan analisis peserta didik pada indikator membedakan sebesar 76,94; indikator mengorganisasikan sebesar 55,27; dan indikator mengatribusikan sebesar 36,11. Rata-rata kemampuan analisis peserta didik adalah 56,10 dengan kriteria cukup tinggi serta nilai *person reliability* sebesar 0,74 yang tergolong cukup bagus. Produk dapat dijadikan alternatif untuk mengukur kemampuan analisis peserta didik pada topik pereaksi pembatas.

**Kata kunci:** instrumen tes, kemampuan analisis, pereaksi pembatas

**ABSTRACT****DEVELOPMENT OF TEST INSTRUMENT TO MEASURE ANALYTICAL ABILITY OF SENIOR HIGH SCHOOL STUDENTS ON THE TOPIC OF LIMITING REAGENTS**

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*Student's learning outcome can be measured using test instrument. Currently, the test instrument developed at SMA PL Sedayu are still limited to C1, C2, and C3 levels. In addition, teacher have not trained students to solve HOTS questions, so that students' analytical ability are still relatively low. This study aims to: (1) create product in the form of test instrument that is in accordance with Wilson, Oriondo, and Antonio development model; (2) know the validity, effectiveness and practicality of the product; and (3) know the students' analytical ability on the topic of limiting reagents. The research method used is Research and Development (R & D) with the Wilson, Antonio, and Oriondo development model modified into the design and product testing stages. This study involved 30 students of X MIPA 1. The research instruments used were interview sheet, validation sheets, essay questions, observation sheet, and student's response questionnaire sheet. Data were analyzed using SPSS 22, Aiken's V statistic, Rasch model, Ms. Excel 2019, and descriptive analysis. The results showed that: (1) the product is suitable to be developed with Wilson, Oriondo, and Antonio modified model because it is more effective and in accordance with the test instrument development procedure; (2) the product developed has fulfilled criteria for content validity with average percentage of 88.38% which is included in the valid criteria; the results of the analysis with Rasch show that 4 items have fulfilled criteria of empirical validity with reference to the MNSQ, ZSTD, and Pt Measure Corr parameters; item reliability of 0.89 (good category); the difficulty level of item 1 with logit of 0.70 (difficult level) while items of 2, 3, and 4 with logit of -0.04, -0.17, and -0.49 (easy level); distinguishing power of items of 1, 2, and 3 with value of 0.24, 0.33, and 0.34 (quite good category) and item 4 with value of 0.6 (good category); average test value is 56.10 which indicates that the product is classified as effective during the trial; the average percentage of student's response to the product is 81.75% which includes practical criteria; and (3) the average analytical ability of students on differentiating indicator is 76.94; the organizing indicator is 55.27; and attribute indicator is 36.11. The average analytical ability of students is 56.10 with quite high criteria with person reliability value of 0.74 which is quite good. The product can be used as an alternative to measure students' analytical skill on the topic of limiting reagents.*

**Keywords:** test instrument, analytical ability, limiting reagents