Teacher-made tests on Bahasa Indonesia subject for school examinations in public vocational high school of Bengkulu province

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ABSTRACT
The purpose of this study was to identify and describe the use of operational verbs based on Anderson’s taxonomic cognitive domain on test items of Indonesian language exams in the public vocational high school in Bengkulu, Indonesia. This is qualitative in nature employing descriptive method as the research design. The data were obtained from test items of Indonesian language school examinations in a public senior vocational school which delivered to twelve graders in the academic year of 2019 with 45 questions in total. The data were documented and analyzed qualitatively. This turned out that operational verbs of the cognitive realm based on Anderson’s taxonomy are two items of remembering, two items of classifying, an item of summarizing, four items of inferring, an item of predicting, three items of interpreting, an item of executing, six items of analyzing, twenty items of selecting, two items of assessing, an item of checking, and two items of formulating which accounted for 24 verbs in total. However, the shows that only 12 verbs on the 12 test items are considered high-level thinking skills which resulted in suggestions to consider.

Assessment is an integral part of the learning process. Assessment is a tool that determines the success/failure of achieving learning goals. Assessment must be done comprehensively to obtain accurate data on student learning outcomes (Nurgiyantoro, 2013). Given the urgency of assessing and evaluating learners’ competence, every teacher must know the basic concepts
of assessment and the skills of applying them in learning. However, many teachers have not been able to master these abilities (Sofyan, 2006, hlm. 1).

The 2013 curriculum requires skilled teachers to create and develop tests that train students' thinking skills. High-level thinking skills is a thinking activity involving cognitive levels in bloom taxonomy's high hierarchy. In Bloom's taxonomy, the cognitive hierarchy consists of six levels: remembering, understanding, applying, analysis, synthesis, and evaluation (Suprapto et al., 2017). This hierarchy was revised by Anderson and Krathwohl (2001) to: remember, understand, apply, analyze, evaluate, and create. In its development, remembering, understanding, and applying are low-level thinking skills. While the ability to analyze, evaluate and create categorized high-level thinking skills. (Pardede et al., 2020; Putri, 2018; Suhardjanto, 2021).

Teachers can specify cognitive operational verbs in Anderson's taxonomy on each test item. Students' cognitive competencies can be evaluated based on the type of knowledge Anderson and Krathwohl compiled the category of knowledge on two things, namely: 1) dimension of knowledge and 2) dimension of the process (Wulandani et al., 2019). (Anderson & Krathwohl, 2001).

Research on teacher-made test instruments found that test instruments made by teachers of Indonesian junior high schools in Bandar Lampung are not yet ideal, not yet complete containing affective, cognitive, and psychomotor aspects (Riadi & Hilal, 2017). Assessment of tests made by high school teachers in Palembang, South Sumatra based on validity, reliability, difficulty level, discrimination index, and effectiveness of the distractors showed that most of the teacher-made tests (58%) was at "sufficient" quality and the rest (42%) was categorized as high quality (Waty, 2018). Analysis of the quality of teacher-made tests at SMPN 4 Gorontalo also reported the quality of teacher-made tests in State Junior High School 4 Gorontalo as many as 25 items with objective forms were categorized as less good (Tiban et al., 2021).

The tests for vocational school exams in the 2019/2020 school year are made by teachers appointed by the Education and Culture Office of Bengkulu Province. All vocational schools in Bengkulu Province use the test developed by teachers. Before developing the test, teachers are trained to develop good tests, including measurable Operational Verbs. Previously, the tests used on school exams were made by teachers and did not focus on practicing high-level thinking skills. The Verbs are still more at the level of remembering (C1) and applying (C3) (Ramadhanti, 2020). The choice of Operational Verbs in the test is the primary key in determining the cognitive realm from the School Exam question. Therefore, the objective of this study is to analyze operational verbs based on Anderson's taxonomic cognitive realm on the Indonesian
School Examination test item at Public Senior Vocational School of Bengkulu Province in the 2019/2020 school year.

METHOD
The design of this research was qualitatively descriptive. Research location was in Public Senior Vocational School of Bengkulu Province. Research time was from May to June 2020.

This research data was a point-of-school exam test item in Bahasa Indonesia subjects for students of vocational school class XII of the 2019/2020 school year, 40 items of multiple-choice tests and 5 essay tests. The data source in this study was the school exam test document of Bahasa Indonesia subject for Public Senior Vocational School of Bengkulu province class XII in the even semester of the 2019/2020 school year.

The data collection technique was documentation, namely the examination document of Bahasa Indonesia subject for Public Senior Vocational School in Bengkulu Province. The data was obtained from the Headmaster's Work Conference (Musyawarah Kerja Kepala Sekolah/MKKS) of Vocational High School of Bengkulu Province, which agreed that school exams should use test items developed by teachers.

The main instrument of the study was the author, with a rubric for identifying test documents that use operational verbs, as shown in the table 1. below:

<table>
<thead>
<tr>
<th>No</th>
<th>Anderson's Cognitive Aspects</th>
<th>Operational Verbs</th>
<th>Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Remembering</td>
<td>Recognizing</td>
<td>Recognizing and retrieving knowledge from long-term memory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recall</td>
<td>Recognize and search for long-term numbers of information that is identical or very similar to newly received information</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>recalling and searching for long-term numbered information and bringing that information to working memory for processing</td>
</tr>
<tr>
<td>2.</td>
<td>Understand</td>
<td>Understand</td>
<td>Understanding and constructing the meaning of learning materials, including what is spoken, written, and drawn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interpret</td>
<td>Can interpret and change information from one form to another</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exemplifies</td>
<td>Give examples of general concepts or principles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Classify</td>
<td>Classify and know that something falls into a particular category e.g., concept or principle</td>
</tr>
<tr>
<td>No</td>
<td>Anderson's Cognitive Aspects</td>
<td>Operational Verbs</td>
<td>Characteristic</td>
</tr>
<tr>
<td>----</td>
<td>------------------------------</td>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Summarize</td>
<td>Presents a sentence that represents the information received or abstracts a theme</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conclude</td>
<td>Be able to infer and abstract a concept or principle that explains these examples by observing the characteristics of each example</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compare</td>
<td>Compare similarities and differences between two or more objects, events, ideas, problems, or situations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Explain</td>
<td>Create, and use cause-and-effect models in a system</td>
</tr>
<tr>
<td>3.</td>
<td>Apply</td>
<td>Apply</td>
<td>Apply or use a procedure under certain circumstances</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Execute</td>
<td>Applying procedures when facing familiar tasks such as exercise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Implement</td>
<td>Can choose and use a procedure to complete an unknown task</td>
</tr>
<tr>
<td>4.</td>
<td>Analyze</td>
<td>Analyze</td>
<td>Analyze and break down matter into its constituent parts and determine the relationships between those parts and the overall structure or purpose.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Differentiate</td>
<td>Distinguishing and discriminate relevant and irrelevant information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organize</td>
<td>Organizing and building systematic and coherent relationships between pieces of information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Attribution</td>
<td>Determine the point of view, opinion, value, or purpose behind communication</td>
</tr>
<tr>
<td>5.</td>
<td>Evaluate</td>
<td>Evaluate</td>
<td>Make and make decisions based on criteria and standards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Examine</td>
<td>Test and examine whether a conclusion is in accordance with its premises or not, whether a subject matter contains conflicting parts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Criticize</td>
<td>Take note and critique the positive and negative traits of a product and make decisions at least in part based on those traits.</td>
</tr>
</tbody>
</table>

Data analysis is carried out with qualitative descriptive analysis techniques, with the following steps:

1. Observe and read each test to find operational verbs.
2. Group operational verbs data found according to Anderson's taxonomic cognitive realm.
3. Tabulate data according to aspects of Anderson's taxonomic cognitive realm.
4. Analyze data according to the operational verbs’ characteristics of Anderson's taxonomic cognitive realm
5. Draw conclusions on the pattern of operational verbs use contained in the Indonesian subject school exam questions in Public Senior Vocational School Bengkulu province.

FINDINGS
The tests developed 45 items, consisting of 40 multiple-choice and 5 essay test items. The examples of operational verbs used in school exam tests based on Anderson's cognitive aspects are as follows:

Remembering
The cognitive aspect of recall was found in two test items: item number 5 and item number 6. Test cognitive aspects, for example, in the following items.

No. 5 Bacalah teks berikut!

| Sebagai badan independen yang memiliki kewenangan mengembangkan standar nasional pendidikan, BNSP melakukan telaah draf standar nasional dengan melibatkan pakar dari akademisi, praktisi, dan birokrasi.
|---|
| Definisikanlah makna istilah yang bercetak miring pada teks tersebut adalah ....
| A. ahli, pelaksana
| B. peneliti, pelaksana
| C. ahli, penulis
| D. peneliti, penulis
| E. penulis, pelaksanaan

In test No. 5, the verb used is “Definisikanlah/ Define” to recall the cognitive aspect of remembering (C1). The characteristic of such tests is to call back from long-term memory. In this regard, students are instructed to recall the knowledge of the meaning of the words of experts and practitioners contained in the text.

Understand
The cognitive aspect of understanding is found in two test items, on test number 8 and number 24. Verbs used: classification, interpreting, summarizing, concluding, and predicting. Examples of tests on the cognitive aspect of understanding are as follows:

No. 8 Pahami teks berikut!
Aksi Maling Tertangkap CCTV
Pelapor : “Pak, Saya kehilangan.”
Polisi : “Kemalingan apa?”
Pelapor : “Mobil, Pak. Tapi saya beruntung, Pak.”

Dialog tersebut merupakan bagian struktur teks anekdot, yaitu . . . .
A. abstraksi
B. orientasi
C. krisis
D. reaksi
E. koda

In test number 8 above, the verb found is "Classifying" which belongs to the cognitive aspect of understanding (C2). Operational verbs test includes cognitive aspects of understanding (2) because in the process of classifying students must understand the substance.

The operational verb "interpreting" is found on test items numbers 3, 32, and 41. Examples:

Item no 3. Perhatikan prosedur registrasi kartu berikut!
1) Pastikan Anda terhubung dengan jaringan internet.
2) Bila sudah terhubung, buka laman web dan pilih registrasi.
3) Setelah dipilih, masukkan nomor kartu prabayar Anda.
4) Cek nomor dengan betul dan pilih daerah kota tempat asal kartu prabayar Anda.
5) Lengkapi data diri Anda dengan tepat.
6) Pilih prabayar atau pasca bayar untuk jenis kartu Anda.
7) Tekan Simpan, dan masukkan kode verifikasi yang akan Anda terima melalui SMS.

Rincilah urutan prosedur registrasi kartu prabayar yang tepat adalah...
A. 1,2,6,3,4,5,7
B. 1,2,3,5,4,6,7
C. 1,3,2,5,4,6,7
D. 1,3,2,4,5,6,7
E. 1,2,3,5,6,4,7

In test number 3, the operational verb found is "interpreting" which is categorized as a cognitive aspect of understanding (C2). The pattern of the problem corresponds to the characteristics of the interpreting element paraphrasing into words, numerical and others. Paraphrasing is retelling the same idea in a different language form.

The operational verb "summarizing" is found in the following test item:
Teacher-made tests on Bahasa Indonesia subject for school examinations in public…

**Item no 34. Pahami teks Laporan Observasi!**


Rangkuman informasi yang tersurat dalam teks tersebut adalah ....

A. Indonesia sendiri kini sudah menerapkan berbagai cara untuk menjadi bangsa berkarakter.
B. Indonesia kini sudah menerapkan berbagai cara demi untuk menjadi bangsa berkarakter.
C. Indonesia sudah menerapkan berbagai cara demi untuk menjadi bangsa berkarakter.
D. Indonesia kini sudah menerapkan berbagai cara untuk menjadi bangsa berkarakter.
E. Indonesia sendiri kini sudah menerapkan cara untuk menjadi bangsa berkarakter.

The operational verb found in test item number 34 is "Summary", including the cognitive aspect of understanding (C2). Students develop a single sentence representing the information received or abstracting a theme. As in the matter, students are instructed to summarize the information expressed in the text of the matter.

**Apply**

Operational verbs of the cognitive aspect "apply" are used in question test item number 2:

**Item no 2. Pahami kutipan novel berikut!**

| [...]Sebatang pohon tua yang riang meneduhiku. Ayahku duduk di sampingku, memeluk pundakku dengan kedua lengannya dan tersenyum mengangguk-angguk pada setiap orang tua dan anak-anaknya yang duduk berderet-deret di bangku panjang di depan kami. |

Kalimat yang tepat untuk menunjukkan latar waktu pada kutipan teks novel tersebut adalah....

A. Di mulut pintu berdiri dua orang guru seperti para penyambut tamu dalam perhelatan.
B. Aku juga merasa cemas.
C. Pagi itu, waktu aku masih kecil, aku duduk di bangku panjang di depan sebuah kelas.
D. Harun telah menyelamatkan kami dan kami pun bersorak.
E. Pak harfan menghampiri orang tua murid.
In test item number 2, the operational verb used is "Indicated" which categorizes the cognitive aspect of applying (C3), another variant of this verb is executing. The word "indicates" requires the cognitive process of applying a procedure to a familiar task. The task of recognizing the time setting in the novel is a daily task that students usually do.

**Analyzing**
Operational verb aspects of "analyzing" used in test items are "analyze" and "select". The verb "analyzing" is found in test items numbers 4, 15, 23, 27, 33, and 39. Examples:

**Item no 4. Perhatikan penggalan teks berikut!**

| Harimau (Panthera tigris) digolongkan ke dalam mamalia, meliputi hewan yang menyusui. “Kucing besar” itu adalah hewan pemangsa dan pemakan daging. |

Analisislah penggunaan konjungsi yang tidak tepat pada penggalan teks di atas adalah ....
A. digolongkan  
B. meliputi  
C. yang  
D. adalah  
E. dan

In test item No. 4, the operational verb found is "Analyze" which includes the cognitive aspect of analyzing (C4). This word was chosen because the characteristics of the test item require students to analyze the problem by separating each part of the problem and looking for the interrelationships between those parts.

**Evaluating**
Operational verbs of cognitive aspects "evaluate" using the words "assess" and "examine". The word assesses are found in test items number 18, and 36.

**Item no 18. Cermati dan pahami teks berikut!**

| Untuk mengatasi dampak kenaikan BBM, pemerintah mengalokasikan dana Rp 16 triliun untuk pemberdayaan rakyat miskin. Dana ini antara lain untuk sumbangan langsung tunai dan jaminan kesehatan keluarga miskin. |

Kalimat yang mengandung tanggapan positif terhadap isi teks di atas adalah ....
A. Kalau bukan pemerintah siapa lagi yang harus memikirkan dampak kenaikan BBM.
B. Apa betul dana itu akan benar-benar sampai kepada rakyat?
C. Paling-paling dana itu akan menguap sebelum sampai tujuan.
D. Dana untuk pemberdayaan rakyat miskin setidaknya Rp 90 triliun baru layak.
E. Kita bersyukur memiliki pemerintah yang peduli kepada rakyat.

In test item number 18, the operational verb found was "Judging" which belonged to the cognitive aspect of evaluating (C5). This choice of operational verbs corresponds to the characteristics of the element "assessing" because students perform the process of assessing a product or process based on exact criteria and standards.

Creating
In the cognitive aspect of "creating" the operational verb used in the test item is "formulating" used in test items numbers 16, 36, and 44. Examples:

Item no 16. Cermati penulisan judul karya ilmiah berikut!

| Hubungan kebugaran jasmani dengan prestasi belajar siswa sekolah menengah atas 12 kota Bengkulu. |
| Rumuskanlah perbaikan penulisan judul karya ilmiah tersebut adalah .... |
A. Hubungan kebugaran jasmani dengan prestasi belajar siswa sekolah menengah atas 12 kota Bengkulu
B. Hubungan Kebugaran Jasmani dengan Prestasi Belajar Siswa Sekolah Menengah Atas 12 Kota Bengkulu
C. Hubungan Kebugaran Jasmani dengan Prestasi Belajar Siswa Sekolah Menengah Atas Dua Belas Kota Bengkulu
D. Hubungan kebugaran jasmani dengan prestasi belajar siswa sekolah menengah atas dua belas kota Bengkulu
E. Hubungan Kebugaran Jasmani Dengan Prestasi Belajar Siswa Sekolah Menengah Atas Dua Belas Kota Bengkulu

In test item number 16, the operational verb found is "Formulate" which classifies the cognitive aspect of "creating" (C6). The word is categorized as "creating (C6)" because students reformulate or hypothesize from writing the scientific work's title.

It can be concluded, the use of operational verbs based on the cognitive aspects of Anderson's taxonomy on the examination item of Bahasa Indonesia in Public Senior Vocational School of Bengkulu Province consists of six aspects, namely remembering, understanding, applying, analyzing, evaluating, and creating.
1. The operational verb of the cognitive aspect "remembering" is found in the verb "recall".

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2. The operational verb of the cognitive aspect "understanding" is found in the verb "classification, interpreting, summarizing, inferring, and predicting".
3. The operational verb aspects of "cognitive" are found in the verb "use".
4. The operational verb cognitive aspect "analyzing" is found in the verb "analyze and select".
5. The operational verbs on the cognitive aspect of "evaluating" are found in verbs "assess and check".
6. The operational verb of the cognitive aspect "creating" is found in the verb "formulate".

**DISCUSSION**

The results of this study which identified verbs based on Anderson's taxonomy used on the Public Senior Vocational School examination test item of Bengkulu province, found six cognitive aspects: recalling, understanding, applying, analyzing, evaluating, and creating.

The cognitive aspect of the cognitive verb "remembering" was "recall" in test items numbers 5 and 6. On the test item, students are expected to recall the knowledge of the meaning of the word in the text. They were remembering attempts to recall knowledge from both short-term and long-term (Wulandani et al., 2019). Test items with the operational verb "remembering" do not train students to think at a high level.

In the area of the cognitive "understand" found operational verbs "classification" on test items No. 8 and 24, "interpret" on test items numbers 3, 32, and 41, "summarize" on test item number 34, "conclude" on test items number 11, 20, 30, and 42, "predict" on test item number 21, "show" on test item number 2, on the test item students are asked to show or apply background use on a short story quote such as the usual daily task (Saputro et al., 2021).

The cognitive area of "analyzing" found the use of operational verbs the words "analyze" and "choose". Operational verbs "analyzing" are found on test items numbers 4, 15, 23, 27, 33, and 39, while operational verbs "select" are found on test items numbers 1, 7, 9, 10, 12, 13, 14, 15, 17, 19, 26, 28, 29, 31, 35, 37, 38, 40, 43, and 45. Students engage in a high-level thinking ability on these test items to answer questions. Students must analyze questions in order to answer them. Such test items train students to think at a high level. Test items that train students to perform analysis before answering will greatly affect the development of decision-making systems by future students (Urgo et al., 2019).

The cognitive area of "evaluating" found the word "judging and checking". The word assess is found on test items numbers 18 and 36, while
the word check is found on test number 25. The ability to evaluate is defined as assessing an object/thing for a specific purpose based on clear criteria.

The results of cognitive aspects of creating research found the use of operational verbs formulating words contained in test items number 16 and 44, and the problem students are asked to be able to form patterns or synthesize the formulation of problems contained in the problem precisely. According to Munaf (2001) synthesis is the ability to connect elements to form patterns that are logically related or draw conclusions from events that have to do with each other (Mubarok, 2019; Tilaar et al., 2020).

CONCLUSION

The results of research and discussion on the use of operational verbs based on Anderson's taxonomic cognitive realm on school exam test items for Bahasa Indonesia subject in Public Senior Vocational School Bengkulu province show that the test items have mostly trained high-level thinking skills in students. However, there were still test items that only required low-level thinking skills to answer them. Not all test items train students to think critically, creatively, analytically of information and data in solving problems involving the most basic mental activities. Higher-Order Thinking Skill (HOTS) is closely related to thinking skills by the cognitive, affective, and psychomotor realms that become one unit in the learning and teaching process.

Considering the study results, the authors conveyed some recommendations: Teachers of Bahasa Indonesia subject need to be trained to develop appropriate question test items/based on Anderson's taxonomic cognitive indicators, particularly those that train high-level thinking students. The choice of test form should also be the attention of the teacher. A type of multiple-choice test is less effective in teaching students to think critically. Teachers should multiply the form of tests that require a critical thinking process to answer, for example, essays, looking for relationships between phenomenon or others.

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