Alternative Assessment Instrument for Measuring Generic Skills of Accounting Education Students

Sri Sumaryati[1], Soetarno Joyoatmojo[2], Sri Anitah Wiryawan[3], Nunuk Suryani[4]

srisumaryati@staff.uns.ac.id[1], strn_jo@yahoo.co.id[2,] sri_anitah@yahoo.com[3],
nunuksuryani@staff.fkip.uns.ac.id[4]

Universitas Sebelas Maret, Jl. Ir. Sutami 36 A Surakarta, Indonesia[1234]

Abstract. The development and assessment of generic skills acquired by accounting education students, such as analytical problem solving, communication, team work, numerical, and using technological skills in this modern era are increasingly becoming a necessity. Many teachers have designed and implemented learning aimed at developing these skills. This study aims to develop an assessment instrument that is able to measure generic skills, so that teachers get the accurate information related to generic skills that students have. This information is needed by the teacher as one of the considerations in improving his learning. The assessment referred to is an alternative assessment, which consists of self assessment and peer assessment. This research and development method referred to the Borg, Gall & Gall model, especially in the design and conduct formative evaluation and instruction stages which consisted of expert test, one to one evaluation, and small group trial. The research which was quantitatively analyzed involved twelve accounting education students of Accounting Education Program of the Faculty of Teacher Training and Education, Universitas Sebelas Maret, Indonesia, expert lecturers of accounting learning and assessment experts of generic skills as research sample. Research instruments which were used were questionnaire and interview. Result of this research, experts and students stated that the instrument was very proper used to assess generic skills.

Keywords:self-assessment, peer assessment, generic skills, accounting education

1   Introduction

Changes in economic structure, the speed, and nature of globalization, as well as technological advancement have changed nature of work, where in turn influences demand of labor market skills [1]. This condition requires availability of Human Resources who have ability to adapt to new condition based on their scientific fields, that is, the identified competency is in all Higher Education graduates from various fields of science at certain levels [2], [3], [4], [5], [6]. This competence is better known as generic skills. Human resources with generic skills based on the field of expertise will make graduates able to survive in competitive working environment and they can cooperate with current technological advancement [7], [8], [9]. This is what makes the development of generic skills as international priority [10], [11].

Sourced from various studies, generic skills which are needed byAccounting Education students include analytical and problem-solving skills, communication skills, teamwork skills, numerical skills, and utilizing technology and information [12, 9, 8]. In order to provide generic skills for students, so one of the things that teachers can do is to plan, implement and assess the learning process which is oriented towards improving students' generic skills. In this research, the emphasis is in the process of generic skills assessment, due to the assessment is needed to find out the success of a program. In other words, assessment is essential in seeing

the achievement and effectiveness of planned learning program [13], [14], as well as improving achievement and providing opportunities to develop learners independently [15].

As educational paradigm changes towards active learning student, it requires teachers to involve students in assessment activities as well as measuring level of generic skills, so thatassessment activities of generic skills can be done with alternative assessment [16], [17]. Alternative assessment is one of assessment approaches that emphasize students' involvements in assessment process to improve learning strategies. In this assessment, students are given the opportunity and guided to understand the learning objectives, do learning tasks, monitor the learning process, and get feedback to improve the learning process. Monitoring activity for students' learning process can be done with self-assessment and peer assessment. The assessment process like this is continuously carried out in each learning process so that making it easier for students to obtain information about their learning shortcoming and improve them at any time.

Application of alternative assessment, in this case, self and peer assessment in accounting learning, is believed to make students' metacognitive of the thinking skills and habits grow and it will enhance awareness, motivation, activities, responsibilities, cooperation, self-confidence, independence, and students' competencies in learning accounting [18]. Moreover, the application of self and peer assessment will also facilitate teachers in monitoring development and progress of students' learning that can be used as basis for improving learning strategies subsequently [19], [20]. Therefore, implementation of self-assessment and peer assessment of accounting learning in the class can run effectively, of course it is needed an instrument which is believed to be able for measuring generic skills appropriately.

2   Method

This research wasdevelopment research that referred to the R&D model by Borg & Gall specifically activities of design and conduct formative evaluation and instruction [21]. Basically, this research developed instrument of generic skills assessment which was applied in the learning of service company accounting cycle. At this stage, expert test, one to one evaluation, and small group trial would be conducted. Subjects of this research were forty one Accounting Education students. In order to obtain conceptually tested model, before trial of draft model was firstly done, it was validated by experts in their fields. Validators consisted of accounting learning experts and experts of generic skills assessment. One to one test and small group test were conducted through focus group discussion involving accounting students and teaching staffs to obtain the input related to the assessment model which was developed.

Assessment instruments which were arranged in the form of rubrics consisted of: (1) generic skills rubric which was developed through the learning of service company accounting cycle, and (2) measurement rubric of each attribute of generic skills. Based on data which were obtained from previous research that generic skills which were needed to be owned by graduates were analytical and problem-solving skills, communication skills, teamwork skills, application on numerical skills, and using technology and information.

3 Results and Discussion

3.1. Determination of Generic Skills and their Attributes

Based on the result of FGD with lecturers and learning experts, generic skills that could be learned in the learning of service company accounting cycle were: (1) capacity for analyzing and problem-solving skills (the attributes are ability to filter and sort out types of information which were needed to achieve the objective, and ability to provide information with the right way); (2) communication skills (the attributes are ability to communicate ideas and information in writing, ability to communicate ideas and information verbally, and ability to teach knowledge to others); (3) Numerical skills (the attributes are ability to do accounting work, ability to count in accounting cases, and ability to interpret the processing result of company's accounting data); (4) Teamwork skills (the attributes are: ability to interact in team members, ability to delegate task to others, and ability to carry out the work which is assigned by team); (5) Using technologies and information skills (the attributes are: ability to process data with using certain functions, ability to operate the Internet for obtaining information related to college tasks, and ability to use operating system and software that supports the work (such as Microsoft Word, spreadsheet, presentation).

3.2. Making Rubrics

Rubrics could be understood as a scoring scale that was used to assess students'performances for each criterion of certain tasks. The rubrics that were created were analytical rubric that the assessment which was given for each criterion. Two main things which were made in each rubric, were criteria and level of performance achievement of each criterion. Criteria referred to basic competency indicators. The level of performance achievement was showed in numbers which were measured using scale of one - five. Score 1 indicated no performance which was marked with very low or very incompetent learning outcome, while score 5 indicated very convincing and meaningful performance which was marked with level of very good or very competent learning achievement.

Table 2. Measurement Instruments for Generic Skills in Accounting Learning with self and peer assessment techniques

Identity	:
Name	:
NIM	:
Names of assessed colleagues:	

Assessment Guidelines:

1. Assess generic skills that you or colleagues have. Generic skills' assessment can be done by circling score of 1-5 with assumption that score of 1-5 is range of generic skills' levels which you or colleagues have. The following below are guidelines for scoring generic skills of self or colleagues:
   - Score 1 is circled if the skills which you or colleagues have are at very low level.
   - Score 2 is circled if the skills which you or colleagues have are at low level.
   - Score 3 is circled if the skills which you or colleagues have are sufficient level.
   - Score 4 is circled if the skills which you or colleagues have are at good level.

- Score 5 if the skills which you or colleagues have are at very good level,

2. After assessing, you can plan corrective steps that you will do in the next learning.
3. When it has filled, calculate average score of each component's generic skills by dividing total score with item number of each skill. Total score is obtained from total score that is multiplied by two.

For example, average score of communication skills is 42:5 = 8.4

4. Example:

No	Attributes of Generic Skills	Assessment Score	Corrective Steps which You Will Do
1	Numeracyskills	1 – 2 – 3 – 4 - ⑤	Learn more about calculation norm in determining profit and loss
2	Sending data via e-mail skills	1 – ② – 3 – 4 – 5	Ask your friends about how to send e-mail properly and correctly
	Average score = (total score x 2): 2		(6x2) : 2 = 6

Explanation:

Name of self or peer: Fulan

1. In this example, the instrumentis used in basic competency of arranging financialstatement. For Example 1, Fulan reflects himself that his numeracy skills (in material ofprofit and loss statements). What Fulan do is:
   a. Circling score 4 because according to Fulan, he assesses the ability in the material of good profit and loss statements.
   b. Fulan's planned corrective step is to learn more about calculation norm in determining profit and loss.
2. In Example 2, Fulan assesses himself that his ability to send data via e-mail that is at low level, so that Fulan encircles score 2. Corrective step that will be done by Fulan is to ask friends about how to send e-mail properly and correctly.
3. The next stage is that Fulan will calculate average score of his skills. From these two skills, the average score that is obtained is [(4 + 2) x 2]: 2 = 6.

Based on the instruction and example, do self and peer assessment with honesty, responsibility and full of confidence.

	Attributes of generic skills that were taught	Score	Reflective action
	Capacity for analysis and problem solving		
1	Ability to filter and sort out types of information which were needed to achieve the objective	**1 – 2 – 3 – 4 – 5**	
2	Ability to provide information with the right way	**1 – 2 – 3 – 4 – 5**	
	Average score : (score total x 2) : 2		
	Communication skills		
3	Ability to communicate ideas and information in writing (writing report, e-mail, chat, etc)	**1 – 2 – 3 – 4 – 5**	
4	Ability to communicate ideas and information verbally (discussing verbally, presentation, etc)	**1 – 2 – 3 – 4 – 5**	
5	Ability to teach knowledge to others	**1 – 2 – 3 – 4 – 5**	

Average score : (score total x 2) : 3

Teamwork skills

6	Ability to interact in team members	**1 – 2 – 3 – 4 – 5**
7	Ability to delegate task to others	**1 – 2 – 3 – 4 – 5**
8	Ability to carry out the task which is assigned by team	**1 – 2 – 3 – 4 – 5**

Average score : (score total x 2) : 3

Application of numerical skills

9	Ability to do accounting work	**1 – 2 – 3 – 4 – 5**
10	Ability to count in accounting cases	**1 – 2 – 3 – 4 – 5**
11	Ability to interpret theprocessing result of company's accounting data	**1 – 2 – 3 – 4 – 5**

Average score : (score total x 2) : 3

Using technologies and information skills

12	Ability to process data with using certain functions or menus	**1 – 2 – 3 – 4 – 5**
13	Ability to operate the Internet for obtaining information related to college tasks	**1 – 2 – 3 – 4 – 5**
14	Ability to use operating system and software that supports the work (such as Microsoft Word, spreadsheet, presentation)	**1 – 2 – 3 – 4 – 5**

Average score : (score total x 2) : 3

3.3. Product validation through expert test

Table 1. Summary of Expert Validation Result

No	Validated product	Feasibility level	Information	Recommendation
1	Measurement questionnaire of generic skills	92 %	Very worthy	It can be used without revision
2	Measurement rubric of generic skills	94 %	Very worthy	It can be used without revision

Source: primary data

Based on **Table 1**, information was obtained that experts stated that all products were feasible to be used due to they had percentage of agreement (R) more than 70. By experts of accounting learning and generic skills assessment, the model that was stated worthy to be used. The experts assumed that there was consistency of the learning objectives, accuracy of the learning strategies in internalization of generic skills for students, as well as the suitability of assessment rubric with indicators which were developed. However, some revisions which were led to model simplification.

3.4. Trials with Lecturers and Students

One to one test and small group trial in this research were readability test for product and instrument which would be used in the research, namely alternative assessment model and assessment sheets of generic skills and their rubrics. In this activity, it was involved five lecturers and twelve students. In this trial, lecturers and students gave some suggestions for improvement: 1) simplifying handbook of lecturer and student, 2) statement in assessment rubric of generic skills, 3) being added instruction or example to assess generic skills.

3.5. Discussion

Development of students'generic skills that is integrated with accounting learning implies importance of assessment model that is able to measure all attributes of generic skills which are taught. Direct assessment of performance becomes an alternative model in measuring students' competencies. Meanwhile, the assessment that is done by students for performance or product which has been produced is form of self-evaluation in order to make improvement for achieving the expected competence. The result of expert validation test showed that all instruments were worthy to be used withresults of 92% and 94%. Likewise, with result of readability test from lecturers which stated that assessment product could be used. Based on result of students' trial that was shown in Picture 1, the result was obtained that the result of self and peer assessment did not show significant difference. At the first meeting, students were not still fully able to conduct self and peer assessment as well. This happened due to perception difference of the rubric that was given, but this had not been happened at the next meeting.

On the average, these results could be interpreted as indication to measure ability of students' generic skills which were needed valid measurement tool, so that the information that was obtained could be utilized by lecturers in planning the learning, and to being utilized for students to assess their abilities to improve future performance [22]. Through students' self-assessment, theycan see advantages and disadvantages, and then these disadvantages become improvement goal. Through improvement of the learning process, this assessment model can develop students' abilities in applying their knowledge and skills to solve real problems, as well as making students more responsible for process and achievement of their learning objectives.

Mbonigaba and Oumar explained that self and peer assessment had been recognized in contemporary higher education due to this type of assessment involves students in the active learning [23]. Active learning as one part of constructivist learning theory that facilitates students' abilities of information processing, reflective abilities, problem-solving and high-level professional competence [24], [25], [26]. In addition, based on the result of Wen & Tsai, this assessment method had been fun for students although some students feel that this process gives them heavy responsibilities [27].

Self-assessment is process of formative assessment with way of students in reflecting and evaluating their work and learning quality, assessing the extent to which they reflect objective or criteria which is explicitly stated, identifying strength and weakness of their work, and revising appropriately [28]. In general, students' self-assessment has positive impact of academic achievement and it is important aspect in development of superior learning self-regulation [29].

Such self-assessment, peer assessment is assessment that involves class members with grouping work or performance of their colleaguesby using relevant criteria. Peers will give feedback, reflective criticism of other students'work or performance based on criteria that

have been negotiated between group members or being determined by teacher [29], [30]. This is as explained by Falchikov that in peer assessment, members from class grade's work or performance of their peers using relevant criteria. In peer feedback, students engage in reflective criticism of other students' work or performance using previously identified criteria and supply feedback to them. In peer learning, students learn with and from each other, normally within the same class or cohort [27].

4   Conclusion

The alternative assessment consisting of self assessment and peer assessment is an instrument that can be used to measure the level of generic skills of accounting education students consisting of analytical problem solving, communication, team work, numerical, and using technological skills. Implementation of self assessment and peer assessment requires a clear assessment rubric so that students can measure their own generic skills and their peers. The information obtained from measuring generic skills activities is very useful for teachers in designing learning.

Self and peer-assessment are becoming central aspects of student-centred assessment processes in higher education, especially in accounting education. This research has provided students with learning experiences that self and peer assessment is very useful as a formative assessment. In addition, students have more interested from self-assessment and peer assessment, because they can see the benefits of being involved in the assessment and feedback process. They learn both from giving and receiving feedback, getting a better understanding of the assessment requirements and using it to improve the quality of their learning.

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