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Original Research Article

The Effectivity of Colleague Assessment Model Implementation in Lambung Mangkurat University in Banjarmasin Indonesia

Suratno

Faculty of Teacher Training and Education, Lambung Mangkurat University, Banjarmasin, Indonesia

ABSTRACT

This research aims to develop Colleague Assessment Model (ATS) in the field of collaborative cooperation pattern study management (PBK), therefore the test on adaptability and model effectivity in Service Company Accounting course teaching is conducted. This model is designed to change conventional learning culture and to reveal generic competency in the problem solving ability in the field of Service Company Accounting and from the aspect of learning process and result. This research found that ATS model assessment is more superior compared to conventional assessment in revealing Accounting generic problem solving ability in Service Company Accounting course learning by using PBK model prescription and material organization in the form of learning program sample (SPP). ATS model and PBK model are very significantly able to improve the effectivity of learning and achieving Service Company Accounting course learning's aims. Moreover this model has a very significant influence towards problem solving generic ability achievement. Meanwhile adversity quotient factor and control locus with the interaction towards ATS handling is not significantly influence problem solving generic ability. ATS adaptability and effectivity are determined by training and experience in using it. The better the training and the experience of the student, the lower rating bias is.

Keywords: Accounting, Education, Colleague Assessment, Service Company, Rating, Economics Education.

INTRODUCTION

Colleague Assessment (ATS) Model is representation from a set of procedures measuring learning result work and group collaborative cooperation activity between student groups by rating each other score. According to Cramer (Stairs, 2006) grade combination between individual and group can achieve collaborative learning process without pushing aside the contribution of individual sense of responsibility. Therefore there are two kinds of assessment integral in collaborative learning, i.e., assessment during the process and assessment towards the result (Jackson et al., 2006: 11).

Colleague assessment (ATS) can used several ways. For example peer rating, peer marking, self-rating, and others, that mainly involving student to give grade. ATS is suitable to assess group work result and preferable, more accurate, and avoid subjectivity. In accordance with the views of Linn dan Wise & Behuniak (Webb, 1994: 1) that states that assessment towards collaborative learning management does not assume that learning achievement is the sole result of individual performance only, instead it is determined by colleague ability when the individual involved in collaborative learning process. Therefore it requires assessment development that is

suitable with collaborative learning process. Therefore ATS prescription implemented in collaborative learning process is expected to significantly influence problem solving ability learning development and collaborative cooperation ability in the field of Accounting.

Accounting course learning culture in Economic Education Study Program in Faculty of Teacher Training and Education of Lambung Mangkurat University in Banjarmasin all this time has learning model that stresses student development as individual and seldom in developing the students as a group. The concept of success is still referring to competition result instead of cooperation. Success is still oriented towards independence instead of interdependence. This phenomenon seems to pull the students away from cooperative spirit and social solidarity. In the end it causes the disparity of education result. In other word the powerful ones will develop and the weak ones will lag behind (Zamroni, 2000: 145).

This research basically employs introduction on the importance and benefits of alternative assessment in the frame of teaching system to minimize limitation in previous researches. The development of previous two researches by Suharsono (1991) and Mukhadis (2003) are not yet able to show the importance to reveal generic competency in the form of problem solving ability among the students. Therefore this assessment development besides playing a role to minimize those limitations it also serves to verify further and choose relevant teaching model to optimize ATS function. More importantly is to minimize the disparity of education result due to less conducive learning culture.

LITERATURE REVIEW

Colleague Assessment (ATS) started to develop among education researchers who keep up with the developments of other alternative assessments types, due to the quite significant benefits as instrument for feed back to the students. ATS can be categorized as alternative assessment or authentic assessment and performance assessment. What meant by other assessment as alternative option is to complete conventional assessment that is quite generally used. As alternative assessment, ATS can be categorized as performance assessment and classroom assessment. Since the object of ATS is work performance about the process or learning result of colleague. The way that has been developed by Wiersema (2000) in conducting assessment by involving student, volunteer is used to design ATS structure pattern. Referring to that model developed by Wiersema (2000), it is further used as a basis to prescript ATS procedure.

Based on the statement of Assessment Reform Group (Clarke, 2005: 84) the definition of ATS by its nature is a form of assessment to obtain feed-back information from students work result gathered from colleague besides the already existing and more mainstream: lecturer's assessment. Other definition is stated by Falchikov (1995), ATS is a process where student individually rate each other (Sluijsmans, 2002: 32). Somervell (1993) found that ATS involve student in decision making about work or their colleague. In ATS student can involve to give each other feedback and engage in marking. ATS is not only marking procedure or grade achieving procedure but also a skill, part of learning process that need to be improved. ATS also can improve student's responsibility because they have to be fair and accurate in taking a decision related to their colleague (Keaten & Richardson, 1992).

Kane and Lawler (1978) introduced three ATS methods, i.e., (1) peer rating; (2) peer ranking; and (3) peer nomination. Peer rating is evaluation method towards colleague where each group member rate their colleague's several performances or individual characteristics by using rating scales). Peer ranking is a method to mark colleague where every group member rank all group members about their one or more factors to be marked from the best to the

worst. Peer nomination is a method to mark colleague where each group member nominate other member that considered the best in certain characteristics and according to certain performance dimension (Kane dan Lawler, 1978: 557)

According to Kane & Lawler (Latham & Wexley, 1982: 88-89) peer rating assessment is very suitable to detect student's learning difficulty since peer rating give more detail information about skill stage from which skill is already mastered successfully and which skill is failed to achieve by student in their learning. Therefore this ATS prescription is stressed more on assessment instrument for rating category.

METHODS

This research is conducted in Social Science Education Department, Economics Education Study Program, Faculty of Teacher's Training and Education Lambung Mangkurat University, Banjarmasin, South Kalimantan. Student population as small group trial test subject and model test are students of Social Science Education Department, Economics Education Study Program, Faculty of Teacher's Training and Education, Lambung Mangkurat University who are not graduate yet or have not take Service and Trade Practice course and or Introduction to Accounting 1 course. The population is 155 students (79 from regular group and 76 from independent group). From that student population, 31 persons are used as small group trial target objects and 46 persons as trial subject. Small group trial target is regular student that enrolled in over the year course (PAT) in Economics Education study program, Faculty of Teacher's Training and Education, Lambung Mangkurat University. Before conducting small group test, students are given Adversity Quotient (AQ) and Control Locus (LK) test. Adversity Quotient is the measure of someone's success after faced with self challenge and time limit, by using instrument adopted from Stoltz (1997). Control Locus (LK) is control locus test score, in Indonesia the instrument has been adopted by Abimanyu (1990), Suharsono (1991) and Mukhadis (2003) from Rotter (1966).

Development procedure consisted of two stages: model development and model implementation, referring to spiral model from Cennamo and Kalk (2005). Development stage consisted of analyzing the needs towards assessment and Accounting competency learning essence, ATS model prescription plan, PBK and learning program sample (SPP). Model implementation stage consisted of small group test and model validation test. Model validation test is pre-and post test quasi-experiment design, continued with model accuracy test with Input-Environment Outcome model evaluation approach. Input variable consisted of problem solving ability early test (KPPM, KPM1 and KPM2), Control Locus, and AQ. Environment Variable is ATS treatment, collaborative cooperation learning pattern, and SPP prescription use. Outcome variable is problem solving final test score (KPPM, KPM1, KPM2). Data collecting instrument consisted of (1) learning and teaching process observation sheet, (2) PBM reflection and evaluation sheet, (3) need of Accounting teaching assessment questionnaire analysis, and (4) Accounting competency mastery need and identification questionnaire analysis. Treatment instrument consisted of (1) three kinds of problem solving ability test., (2) Collaborative cooperation ability progress scale questionnaire, (3) analytical assessment rubrik in the form of audit check sheet and complete cycle problem, and (4) log and learning journal. Data analysis technique for model validity test use technique multivariate statistics GLM Repeated Measures and non-parametric statistics. For ATS implementation generalization in wider facet, generalizability theory approach is used.

RESULTS AND DISCUSSION

Initial test and final test point analysis result and initial test and final test score data analysis from each consecutive problem solving test category, the following profile is acquired.

Table 4.1: Test Point Analysis Result of KPPM, KPM1, and KPM2 (N=31) Small Group Test

Test Type	Difficulty Level (Tk)		Discriminatory Power (D)		Cronbach's Alpha's Reliability Index	PPDI Index*
	Each Point	Total	Each Point	Total		
Initial PPM	0.10 s.d 0.87	0,26	-0.05 s.d 0.45	0.16	0.62	
Final KPPM	0.16 s.d 0.81	0.31	-0.15 s.d 0.40	0.14	0.69	-0.01
Initial KPM1	0,00 s.d 0.80	0.38	0.00 s.d 0.50	0.33	0.76	
Final KPM1	0,00 s.d 1.00	0.56	-0.10 s.d 0.50	0.23	0.90	-0.10
Initial KPM2	0,00 s.d 0.86	0.45	0.00 s.d 0.50	0.27	0.92	
Final KPM2	0,00 s.d 0.90	0.50	0.00 s.d 0.50	0.29	0.92	0.01

*)PPDI : *pre-post difference index*
*) p<0,01

The table shows that each test category reliability level, and pre-post difference index confirmed that each test category has good potential as instrument for problem solving ability variable measurement

Variant component estimation sourced from student (M), Marker (P), and Marking Criteria (K) for KPPM, KPMI1, and KPM2 test from small group test participant student with Genova approach acquired result shown by the following table.

Table 4.2: Component Estimation towards Student Variant (M), test implementation frequency (P), testcategory (K) in small group testing for KPPM, KPM1 and KPM2 (N=31) test.

Variation Source	**JK**	**db**	**KR**	**Variant**	**% of total variant**
Student (M)	726.6452	30	24.2215	1.8858	1.73
Test Frequency (P)	1074.6129	2	537.3065	-0.0000	0
K:P (Test Category: Test Frequency)	4380.4194	3	1460.1398	46.5986	42.65
MP	774.3871	60	12.9065	-0.0000	0
MK:P	1402.5807	90	15.5842	15.5842	14.26
Error	8358.6452	185	45.1819	45.1819	41.36

Table4.3: G Coefficient Analysis Summary
KPPM, KPM1 and KPM2 Data Test and (N = 31) Small Group Trial Test

	SAMPLE SIZES				VARIANCES					
D STUDY DESIGN NO.	INDEX= UNIV.=	$M INF.	P INF.	K INF.	UNIVERSE SCORE	EXPECTED OBSERVED SCORE	LOWER CASE DELTA	UPPER CASE DELTA	GEN. COEF.	PHI
001-001	31	3	1	1.43955	6.63429	5.19474	20.72760	15.74686	0.21699	0.06494
001-002	31	3	2	1.43955	4.03692	2.59737	10.36380	7.89665	0.35660	0.12196
001-003	31	3	3	1.43955	3.17113	1.73158	6.90920	5.27991	0.45395	0.17243

G Coefficient calculation test result is 0.45; it means quite unreliable yet to be used as a basis for implementation to wider facet. Big variation source (42,65%) dominated by test category factor and implementation frequency. In this context nestea test category in implementation frequency is initial and final. Therefore in this test development product implementation must notice the characteristics of test category, implementation frequency, and administration both for initial test and final test.

This finding is strengthened by test result on the relationship between pre-college and post-college score which is very significant for all measurement variable indicators. Indicator that shows the strongest relationship between reading comprehension, understanding ability, and implementing knowledge technically before taking the course and after that with r = 0,77 (p<0,01). The weakest indicator is the ability to analyze, synthesize, and evaluate technical problems between before and after taking course with r = 0.39 (p<0,01).

It can be concluded that collaborative learning pattern treatment condition coupled with SPP material has been applied in accordance with test of usefulness from ATS model. The same

condition between trial group and control group has been going on well and only 'fun college' factor that differ those two conditions. Therefore test result towards differences on problem solving ability learning result in previous sessions can be accounted for methodologically.

From observation towards group work activity process in classroom, it can be known that upper group students have more activity and more creative effort in learning. They are more reactive and responsive in thinking compared to lower group students. Learning result on compulsary course marked with better grade point, actually gives clue that student with relative high grade point, can finish the assigned assessment tasks and more capable to influence colleague, marked with more productive group work and faster compared to the group with lower grade point.

From group work activity process observation in the calss also obtained information that lower group student asked more questions toward their colleague, rather than asking directly to the lecturer. Direct impact faced by this group is working longer, with more mistakes, and slow correction process and slower answer correction eventhough answer key as feedback is given.

Assessment instrument in the form of rubric is actually not quite reliable to be used as colleague assessment instrument. For KPPM test case, rubric is still easy to be implemented, but forfor assessment material for KPM1 and KPM2 test category actually not reliable anymore. Therefore assessment instrument using audit check sheet designed by Thompson (Popham, Schrag & Blockhus, 1975: 284) andcomplete-cycle problem (Harms, Stehr & Harris, 1972: 23) is developed.Audit check sheet is impelemented to control and test problem solving answer by sampling from action sequence and problem solving procedure, therefore the student audit each other and check each other's answer only in certain sampled steps according to the check sheet. Meanwhile on complete-cycle problem it implemented for more comprehensive problem solving to see learning transfer finds new procedure in problem solving therefore assessment material contains repertoire on problem solving that has novelty. Audit check sheet and complete-cycle problem actually only viewed as easier to be implemented by student group to conduct colleague assessment.

From log book and learning journal, a clue is obtained that shows most students feel not enough group study in the class room. Almost all task completion need group study activity outside classroom. Besides they are identified facing many failures in taking decision among group members. The numerous problem solving alternative thoughts among group members and different comprehension backgrounds become main obstacle for group decision making. Such condition brings fundamental change: from individual learning behavior to mutual aid and mutual need based learning behavior. Lower group student that used to be exclusive, waiting, and passive, has carried away in problem solving learning process without being forced. The impact of giving answer key as feed back when group work is over, gave positive learning stimulus for improving motivation and intimacy among fellew group members to learn collaboratively.

Log and learning hournal as assessment instrument that functions to collaborative learning control in group, actually has lower effectivity compared to the use of colleague asessment scale inventory. Log and learning journal in small group trial test have 0.39 G coefficient reliability; meanwhile in the same group colleague assessment scale invontory has 0.90 G coefficient reliability. Based on this empirical proof, data from colleague assessment scale invontory use, can be more generalized towards the wider context and facet than log and learning journal use.

Considering several input variables and environment actually become suppressor for ATS relation towards problem solving ability achievement,

therefore it requires certain intervention towards learning practice condition, i.e., there must be full consideration towards student's self readiness aspect as manifestation of initial ability. If the student lack of initial ability it will highly disturb ATS implementation in achieving problem solving ability. Therefore for AQ variable and collaborative cooperation need separate management in learning group arrangement, membership composition with considering student's AQ characteristics. Meanwhile LK characteristics need to be considered in determining learning group composition and other activities.

ATS practice need more detail, more thorough, and more comprehensive scrutiny about the assessment instrument used (audit check sheet dan complete-cycle problem) by keep on paying attention towards other variable role, e.g., AQ and LK and initial ability as input variable.

ATS instrument use with rubric and it's kinds in formulative assessment practice is felt more difficult by students when they are faced with assessment that contains heavier and more procedural knowledge that demand action sequence accuracy and precision, moreover if assessment object is already on the stag of metacognitive thinking demand or novelty problem solving.

To lower the difficulty, rubric benchmark formulating action and assessment instrument that will be used between lecturer and student is the best way as suggested by Noren and Webb. Rubric should be clear and simple to be efficient and easy to use.

Rating bias can be reduced and even can be eliminated if ATS implementation is preceded with training and briefing experience in the beginning of college, simultaneous with the unified perception and understanding consolidation among colleague raters that used as ATS medium. ATS has been proven to have meaningfulness as alternative assessment for formative or summative. Association test between formative assessment in every SPP with final test of problem solving show significant relationship. This proof is in accordance with what has been done by Freeman and Dyrenfurth (2003: 7) where peer rating score has positive correlation with semester's final test result score. Active student in group work and scored high peer rating actually has high score in the final exam and vice versa. Thi is indeed has not been said to has causal relationship but this evidence can strengthen the notion that if the student is actively involved in group learning activity, including applying ATS, especially followed with written feedback and gradual colleague remidi, then the final exam surely not disappointing.

Numerous numbers of students in one class for Service Company Accounting and similar course can be problem if learning management use collaborative group cooperation without formative and summative assessment way change.

What is generated by this development research is in line with the suggestion from Wiersema (2000) that argued that class assessment with ATS pattern need to accommodate balanced lecturer and student interest, but can solve the problem of overcrowded students in a class whose learning pattern use collaborative group work. To conduct assessment, the lecturer can consider the aspect of participation, time precision, focus, honesty, idea and creativity and commitment given by each group member.

Overall this research has shown the evidence that ATS model development in course competency assessment can be used as instrument to improve teaching and learning quality in higher education institution since it can change conventional learning culture. Learning culture in collaborative group cooperation pattern background is coupled with material organizing elaboratively in the form of learning program sample (SPP) that can synergize with ATS implementation especially for the purpose of improvement in the process.

The developed ATS model that related with student's trait has several limitation therefore in it's usage should pay attention towards it's characteristics, goodness, benefits, and weakness.

CONCLUSION

Colleague assessment model (ATS) is more superior compared to conventional assessment in revealing Accounting generic problem solving ability in Service Company Accounting course teaching and learning by using PBK model prescription and material organization in the form of SPP. ATS model has significant influence towards problem solving generic ability achievement, meanwhile Adversity Quotient and Control Locus and interaction with ATS are not significantly influence problem solving generic ability. ATS model significantly influential towards the ability to introduce pattern and ability to use problem solving procedure, i.e., among both low and high Adversity Quotient group student. ATS adaptability and effectivity are determined by training and experience in using it. The better the training and experience, the lower the rating bias is. ATS model and PBK model very significantly able to improve teaching effectivity and achieving the aims of Service Company Accounting problem solving teaching.

Methodologically, this research result is not yet reaching the meaningfulness demanded by external validity criteria. This development is still reporting trial test in limited circles in the Faculty of Teacher's Training and Education, Lambung Mangkurat University, Banjarmasin therefore to fulfill generalization purpose still require replication and action evaluation towards further dissemination. From internal validity aspect there are still several limitations, both on research target subject characteristic, time, research location, and research procedure. For the researcher who interested in the field of assessment in the level of course subject, it is advised to conduct further, deeper, and more comprehensive research, both in accounting learning study or other course subject in the scope of social studies or other scientific knowledge.

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