THE IMPLEMENTATION OF SCIENTIFIC APPROACH IN FINANCIAL ACCOUNTING LEARNING AND ITS EFFECTS ON STUDENTS' HIGHER-ORDER THINKING SKILLS

L. Saptono
Faculty of Teacher Training and Education Sanata Dharma University, Yogyakarta
Email: sapto.pakusd@gmail.com

Abstract: The goal of the research istwofold, i.e.to investigate the impacts of the implementation of scientific approach in financial accounting learning on vocational schools of business (SMK) students; and to reveal the effects of the application of such scientific approachin financial accounting learning particularly atthe business and management program on students with higher-order thinking skills. This research is descriptive. The population wasclass XI students taking business and management program, finance program, and accounting program in Special Region of Yogyakarta that have taken bank reconciliation subject. Using purposive sampling, data were collected through questionnaires and tests. The data were then analyzed using descriptive statistic and Spearman correlation. The findings show that: 1) the implementation of scientific approach in financial accounting learning to SMK students taking business and management program and finance program is very good (mean = 29.73); 2) there is a positive correlation between the implementation of scientific approach in financial accounting learning andstudents' higher-order thinking skills (Spearman's rho (rs) = 0.135; sig. (2-tailed) = 0.000 < α = 0.05).

Keywords: ***scientific approach, higher-order thinking skills, vocational school of business***

IMPLEMENTASI PENDEKATAN SAINTIFIK DALAM PEMBELAJARAN AKUNTANSI DAN DAMPAKNYA PADA KEMAMPUAN BERPIKIR TINGKAT TINGGI SISWA

Abstrak: Penelitian bertujuan untuk mengetahui dampak implementasi pendekatan saintifik dalam pembelajaran akuntansi keuangan pada siswa sekolah kejuruan bisnis, dan pengaruh pelaksanaan pendekatan saintifik dalam pembelajaran akuntansi keuangan di bidang keahlian bisnis dan manajemen dengan tingkat kemampuan siswa berpikir tingkat tinggi. Penelitian ini adalah deskriptif. Populasi penelitian adalah siswa kelas XI SMK di bidang keahlian bisnis dan manajemen, program keahlian keuangan, paket keterampilan akuntansi yang telah mendapatkan materi rekonsiliasi bank. Pengambilan sampel dilakukan dengan teknik purposif. Pengumpulan data dengan teknik kuesioner dan tes serta dianalisis dengan teknik statistik deskriptif dan korelasi Spearman. Hasil penelitian menunjukkan bahwa 1) implementasi pendekatan saintifik dalam pembelajaran akuntansi keuangan pada SMK, bidang keahlian bisnis dan manajemen, paket keahlian akuntansi adalah sangat baik (rata-rata = 29,73); 2) ada hubungan signifkan pelaksanaan pendekatan saintifik dalam pembelajaran akuntansi keuangan dengan tingkat keterampilan berpikir tingkat tinggi siswa (rho = 0,135; sig. (2-tailed) = 0,000 < α = 0,05).

Kata kunci: ***pendekatan saintifik, berpikir tingkat tinggi, sekolah menengah kejuruan***

INTRODUCTION

National education closely aims to develop students' full potentials to be religious and be devoted human beings to God Almighty, as well as noble, healthy, knowledgeable, capable, creative, independent, and to be democratic and accountable citizens (Law No. 30 of 2003 about National Education System). In order to possess the characteristics demanded by the law, education process shall provide broader scope in every educational level for students to develop their cognitive, affective, and psychomotor potentials. Developing these three important aspects will encourage students to grow as a whole individual, specifically to be intellectual and characteristically good at the same time.

Ever since the issue of the Law No. 30 of 2013 to this point of time, there have been three implemented curricula, namely Competency Based Curriculum (*Kurikulum Berbasis Kompetensi* (KBK) in 2004), School Based Curriculum (*Kurikulum Tingkat Satuan Pendidikan* (KTSP) in 2006), and Curriculum 2013. Human Development and Cultural Affairs of Education and Culture as well as Education Quality Assurance, Ministry of Education and Culture (*Badan Pengembangan Sumber Daya Manusia Pendidikan dan Kebudayaan dan Penjaminan Mutu Pendidikan Kementerian Pendidikan dan Kebudayaan (BPSDMPK-PMP Kemendikbud),* 2011) overviewed Curriculum 2013 as a further leap to the development of KBK which had been established in 2014 and KTSP in 2006 and all was covering integrated cognitive, affective, and psychomotor competencies. The curriculum changes has brought about the logical competencies such as: 1) mindset changes, knowledge, creativity, and teachers' performances in implementing the curriculum; and 2) content, process, and learning assessment changes.

There are two interesting points to highlight from new curriculum (Curriculum 2013) compared to all previous curriculum, namely learning reinforcement and load adjustment for both teacher and student. Learning reinforcement encompasses learning process and learning assessment. Learning process in Curriculum 2013 appears to adopt scientific approach. Scientific approach is a set of techniques to investigate phenomenon, acquire new knowledge, or revise and integrate prior knowledge. To consider scientific, methods of inquiry are generally based on observation results/ experiences or measurable evidence subject according to certain principles of reasoning. Godfrey-Smith (2003) mentioned that there are four fundamental scientific methods, namely: a) characterizations, which consist of observations, definitions, measures of the investigated subjects; b) hypotheses, which are theoretical, hypothetic explanation from observation, and measures of subjects; c) prediction (reasoning that includes logical deduction from hypotheses or theory), and d) experiments to examine all those scientific methods.

Pragmatic scheme of those four elements was operationally described by Crawford (1990) as: 1) defining a question; 2) observing to gather information and resources; 3) forming an explanatory hypothesis; 4) testing the hypotheses by performing an experiment and collecting data in a reproducible manner; 5) analyzing the data; 6) interpreting the data and draw conclusions that serve as a starting point for new hypothesis; 7) publishing results; 8) retesting what is frequently done by other scientists. Meanwhile, learning assessment consists of the measurement of students' lower to higher thinking level, the emphasis on answering questions with deep thought (not memorized answers), the orientation on students' learning process (not on the result), and also the use students' learning portfolio.

Curriculum 2013 refers to two learning approaches: direct and indirect approach. Based on Minister of Education and Culture Regulation (Permendikbud) No. 103 of 2014, direct learning is applied through scientific approach which covers the activities of observing, questioning, gathering information or experimenting, reasoning or associating, and communicating. These activities are aimed to obtain an immediate effect on knowledge and students' skills (instructional effect). Meanwhile, indirect learning is nurturant effect in relation to spiritual and social aspects. Both direct and indirect learning are expected to be mutually integrated and inseparable.

One of the objectives on applying scientific approach in learning process is the development of students' higher-order thinking. Higher-order thinking is the dimension of cognitive process that embodies students' skills to analyze, evaluate, and create (the processes – analyze, evaluate, and create) (Anderson and Krathwohl, 2010). King *et al* (1998:11-18) stated some fundamental concepts that are relevant to higher-order thinking based on three assumptions of thinking and learning: first, the first thinking level is linked to learning level (some components and levels); second, are the subject's materials only be learned theoretically? In the real life, students live in both society and school, neglecting what theories conclude, concepts and vocabularies they learned in the previous year help them to think better and higher; third, higher-order thinking level involves some different thinking processes applied in perplexing situation and has variables, such as: contexts, metacognition, procedural knowledge, comprehension, insight, intelligence, problem solving, and critical thinking. On the dimension of cognitive process, knowledge substance and cognitive learning process are combined. This

combination is expected to help educators to align the objectives of learning with the objectives of assessment.

Limbach and Wendy Waugh (2010) revealed the following five steps to develop higher-order thinking skills: (a) determining learning objectives; (b) teaching through questioning; (c) practicing before assessment; (d) reviewing, refining, and improving; (e) providing feedback and learning assessment. Cognitive processes in scientific learning are designed in such a way so that students are able to actively construct the concepts, laws, as well as principles by undergoing the stages of observing (identifying and finding issues or problems), formulating problems, formulating hypotheses, collecting data in varied techniques, analyzing data, drawing conclusions, and communicating the found concepts, laws, and principles. These cognitive concepts are aimed to provide students some insights to recognize and comprehend various materials by applying scientific approach that the information can be gathered from anywhere, at anytime, and do not rely on teachers' one-way direct information. Therefore, learning condition is deliberately expected to encourage students to find out from any sources through observation, and not just to be simply told.

This research was aimed to investigate the implementation of scientific learning approach in vocational school of business (SMK) especially in the field of business and management skills, financial skills, and package of accounting skills. Besides, this research was also aimed to investigate the effect of scientific learning approach on students' higher-order thinking. This research was a survey to vocational schools of business students in the field of business and management skills, financial skills, and package of accounting skills in Special Region of Yogyakarta.

METHODS

This research was aimed to describe the implementation of scientific approach in financial accounting learning to vocational school of business and its effects to the students' higher-order thinking skills. The research was a surveyin Vocational Schools (SMK), ex-Economics High School (SMEA) located in Sleman District, Bantul District, KulonProgo District, Gunungkidul District, and Yogyakarta City in October 2014 to July 2015.This research population was vocational students, field of business and management skills, financial skills program, and package of accounting skills Class XI who have studied bank reconciliation in the academic year of 2014/2015 in Special Region of Yogyakarta. The number of research population was 2,540 students. However, the research sample set 1,388 students. Purposive sampling was done and set 6 (six) vocational schools, field of business and management skills, financial skills program, and package of accounting skills from every district based on the highest rank in order of the number of students in every district.

Research variables of this research were the implementation of scientific approach in financial accounting learning and the level of students' higher-order thinking skills. The implementation of scientific approach in financial accounting learning was the standard of how often learning is implemented based on scientific approach by teachers according to students' perception. The variable indicator was set in accordance with Permendiknas No. 103 of 2014 about Learning in Elementary and Secondary Schools. The variable of higher-order thinking skill level was the students' achievement to solve problems in financial accounting learning.

The scope of higher-order thinking skill covers the ability to analyze, to evaluate, and to create (Ramirez and Ganaden, 2008).The measuring instrument for the variable of scientific approach implementation in financial accounting learning was an attitude questionnaire consisting of some items/statements. The items were put in a 5-point Likert scale: strongly agree (SS) = a score of 5; agree (S) = a score of 4; neither agree nor disagree (RR) = a score of 3; disagree (TS) = a score of 2; and strongly disagree (STS) = a score of 1. Meanwhile, the measuring instrument for the variable of the higher-order thinking skills level was done by written test. Score for each question was determined based on the degree of difficulty that each has maximum score of 100. Data collection techniques in this research were questionnaire and test. Questionnaire was aimed to collect the data of scientific approach implementation variables in financial accounting learning. Data was collected directly by the researcher to the vocational students as research participants. Meanwhile, test is done to collect the data of higher-order thinking skills level.

In this research, the validity of research instruments was examined by item analysis method with correlation technique of Karl Pearson Product Moment (Arikunto, 2010). Selected research participants from the target population were 55 students of SMK Yapemda 1 Sleman, Class XI. The result of validity test showed that corrected item – total correlation value on each statement of scientific approach implementation variables in financial accounting learning and higher-order thinking skills level were valid (overall value of corrected item – total correlation for each item was greater than the value of the theoretical correlation coefficient (r) of 0.266. Meanwhile, reliability test showed that Cronbach's Alpha value of both research instruments was 0.778 for scientific approach implementation instrument in financial accounting learning and 0.859 for higher-order thinking skills level instrument. Both showed the values were greater than 0.60 and resulted these research instruments were considered reliable (Gozhali, 2001).

The collected data in this research was analyzed by: (a) descriptive statistics, used to analyze and describe/illustrate the research data. It was described based on *Pedoman Acuan Patokan* (PAP) Type II and completed with the mean, median, modus and standard deviation calculation; (b) bivariate normality, used to investigate whether the research data was normally distributed or not; (c) Spearman correlation, selected based on data distribution normality test which showed that coefficient R^2 of scientific approach implementation variable in financial accounting learning and higher-order thinking skills level were considered weak.

RESULTS AND DISCUSSION

Research was conducted in October 2014 to May 2015. Research participants were Class XI students of 30 vocational schools, field of business and management skills, financial skills program, and package of accounting skills who have studied bank reconciliation based on Curriculum 2013 at the academic year of 2014/2015 in Special Region of Yogyakarta. Data was collected from 1,388 students. This section is going to describe the research result, data analysis, and discussion of data analysis results.

The calculation results of central tendency value showed the mean value = 29.73, median = 30, modus = 28 and standard deviation = 3.08. Thus, in general it can be concluded that the implementation of scientific approach in financial accounting learning was very good (Table 8).

The calculation results of central tendency value showed the mean value = 79.48, median = 85, modus = 100 and standard deviation = 21.41. Thus, in general it can be concluded that the level of students' higher-order thinking skills was very good (Table 9).

Data Description

Table 6. Description of participants based on gender and the origin of district

No.	Gender	District/City					Total
		Gunungkidul	Bantul	Kulon Progo	Yogyakarta City	Sleman	
1	Female	336	170	212	233	319	1,270
2	Male	21	22	40	16	19	118
	Total	357	192	252	249	338	1,388

Table 7. Description of participant based on school status and the origin of school

No.	School Status	District/City					Total
		Gunungkidul	Bantul	Kulon Progo	Yogyakarta City	Sleman	
1	Public	200	125	109	155	208	797
2	Private	157	67	143	94	130	591
	Total	357	192	252	249	338	1388

Table 8. Data description of scientific approach implementation in financial accounting learning

Score Interval	District/City					Freq.	Category
	Gunung kidul	Bantul	Kulon Progo	Yogyakarta City	Sleman		
29 – 35	255	148	158	130	224	915	Very Good
25 – 28	93	41	75	110	95	414	Good
22 – 24	8	3	10	5	14	40	Fair
19 – 21	1	0	7	2	3	13	Poor
7 – 18	0	0	2	2	2	6	Very poor
Total	357	192	252	249	338	1388	

Table 9. Data description of students' higher-order thinking skills level

Score Interval	District/City					Freq.	Category
	Gunungkidul	Bantul	Kulon Progo	Yogyakarta City	Sleman		
81–100	167	134	113	184	193	791	Very Good
66 – 80	116	27	81	31	87	342	Good
56 – 65	23	8	16	1	33	81	Fair
46 – 55	9	1	11	15	17	53	Poor
0 – 45	42	22	31	18	8	121	Very poor
Total	357	192	252	249	338	1388	

Data Analysis

Table 10. Prerequisite data analysis testing: normality testing result of the variable data distribution of scientific approach implementation in financial accounting learning and the level of higher-order thinking skills

Model Summary and Parameter Estimates

Dependent Variable: Chi Square

Equation	Model Summary					Parameter Estimates	
	R Square	F	df1	df2	Sig.	Constant	b1
Linear*	.286	553.934	1	1386	.000	.044	.007

*) Normality testing of variable data distribution of scientific approach implementation on financial accounting learning and the level of higher-order thinking skills

Hypothesis Testing

Table 11. Hypothesis testing results on the correlation between scientific approach implementation in financial accounting learning and the level of higher-order thinking skills

Correlations

			Saintific approach	Higher-order thinking
Spearman's rho	Saintific approach	Correlation Coefficient	1.000	.135**
		Sig. (2-tailed)	.	.000
		N	1388	1388
	Higher-order thinking	Correlation Coefficient	.135**	1.000
		Sig. (2-tailed)	.000	.
		N	1388	1388

**. Correlation is significant at the 0.01 level (2-tailed).

Table 12. Correlation of each item between scientific approach (SA) implementation on financial accounting learning and the level higher-order thinking skills

Correlations

			SA_1	SA_2	SA_3	SA_4	SA_5	SA_6	SA_7	Overall KBTT
Spearman's rho	SA_1	Correlation Coefficient	1.000	.276**	.311**	.303**	.292**	.276**	.240**	.034
		Sig. (2-tailed)	.	.000	.000	.000	.000	.000	.000	.209
		N	1388	1388	1388	1388	1388	1388	1388	1386
	SA_2	Correlation Coefficient	.276**	1.000	.198**	.263**	.168**	.174**	.203**	.158**
		Sig. (2-tailed)	.000	.	.000	.000	.000	.000	.000	.000
		N	1388	1388	1388	1388	1388	1388	1388	1386
	SA_3	Correlation Coefficient	.311**	.198**	1.000	.333**	.296**	.309**	.305**	.039
		Sig. (2-tailed)	.000	.000	.	.000	.000	.000	.000	.143
		N	1388	1388	1388	1388	1388	1388	1388	1386
	SA_4	Correlation Coefficient	.303**	.263**	.333**	1.000	.355**	.365**	.337**	.076**
		Sig. (2-tailed)	.000	.000	.000	.	.000	.000	.000	.005
		N	1388	1388	1388	1388	1388	1388	1388	1386
	SA_5	Correlation Coefficient	.292**	.168**	.296**	.355**	1.000	.420**	.351**	.093**
		Sig. (2-tailed)	.000	.000	.000	.000	.	.000	.000	.000
		N	1388	1388	1388	1388	1388	1388	1388	1386
	SA_6	Correlation Coefficient	.276**	.174**	.309**	.365**	.420**	1.000	.434**	.089**
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.	.000	.001
		N	1388	1388	1388	1388	1388	1388	1388	1386
	SA_7	Correlation Coefficient	.240**	.203**	.305**	.337**	.351**	.434**	1.000	.040
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.	.138
		N	1388	1388	1388	1388	1388	1388	1388	1386
	Overall KBTT	Correlation Coefficient	.034	.158**	.039	.076**	.093**	.089**	.040	1.000
		Sig. (2-tailed)	.209	.000	.143	.005	.000	.001	.138	.
		N	1386	1386	1386	1386	1386	1386	1386	1386

**. Correlation is significant at the 0.01 level (2-tailed).

Normality testing of variable data distribution of scientific approach implementation in financial accounting learning and the level of higher-order thinking skills showed the R^2 value = 0.286 (Table 10). R^2 value showed that the normality of data distribution was considered weak. Therefore, the data in this research was analyzed by non-parametric statistics (Spearman correlation).

Correlation of each item in statements between the variables of scientific approach implementation in financial accounting learning and the level of higher-order thinking skills (overall) is presented in Table 12.

Table 12 illustrated the correlation coefficient of each item between the scientific approach implementation in financial accounting learning at the learning stages of observing (SA_1), questioning (SA_2), communicating (SA_7) and the level of higher-order thinking skills (overall) was insignificant. Meanwhile, the correlation coefficient of each item between the scientific approach implementation in financial accounting learning and level of higher-order thinking skills (overall) at the learning stages of questioning (SA_2), experimenting/gathering information (SA_4), associating (SA_5) and communicating (SA_6) was significant.

Discussion

In description section, the data has been presented on how the implementation of scientific approach in financial accounting learning according to students' perception is. In general, it can be concluded that the implementation of scientific approach in financial accounting learning, the field of business and management skills, financial skills program, and package of accounting skills of vocational schools in Special Region of Yogyakarta was very good. The research findings illustrated that teachers had implemented learning stages of scientific

approach in financial accounting learning as regulated in Permendikbud No. 103 of 2014. The learning stages include observing, questioning, experimenting, associating, and communicating.

Among these five stages, the best stages done by teachers in students' perception were: 1) teachers gave students wide opportunities to question (arousing curiosity) both individually or in groups regarding the facts, concepts, and procedures of bank reconciliation (the mean score is 4.56 on a scale of 0-5); 2) teachers facilitated students to read and figure the important points of bank reconciliation from referred textbooks or any learning sources (the mean score is 4.31 on a scale of 0-5); 3) teachers gave students wide opportunities to analyze or discuss (processing data/ information), to find the answers individually or by having group discussion, and to draw conclusion as the answers to the bank reconciliation problems (the mean score is 4.29 on a scale of 0-5); 4) teachers facilitated students individually/in groups to get the feedback from students/other students' groups/teachers or facilitated students to give the feedback to students/other students' groups/teachers while presenting in class (the mean score is 4.22 on a scale of 0-5); 5) teachers gave students wide opportunities to write down/present their work either written or oral about the preparation of bank reconciliation reports and the record of adjustment post and teachers assessed to students' work (the mean score is 4.22 on a scale of 0-5); 5) teachers gave students wide opportunities to gather the data and information from various sources, such as textbooks, internet, etc as a follow-up to the questions asked in the classroom about bank reconciliation (the mean score is 4.15 on a scale of 0-5); 6) teachers facilitated students to observe the learning media, such as PowerPoint slides, pictures, videos, etc. prepared by the teachers to deliver bank reconciliation materials (the mean score is 3.00 on a scale of 0-5).

The implementation of scientific approach in financial accounting learning, the field of business and management skills, financial skills program, and package of accounting skills of vocational schools in Special Region of Yogyakarta was very good. Meanwhile, the level of students' higher-order thinking skills was good. Nevertheless, data analysis results revealed that correlation coefficient (Spearman's rho (rs)) between the implementation of scientific approach in financial accounting learning and the level of higher-order thinking skills was 0.135. This means there was a positive correlation with weak category between implementation of scientific approach in financial accounting learning and the level of students' higher-order thinking skills. Correlation coefficient between the implementation of scientific approach in financial accounting learning and the level of students' higher-order thinking skills was significant (sig. (2-tailed) = $0.000 < \alpha = 0.05$).

The level of students' higher-order thinking skills in this research was examined in test. For the first part, students were asked to analyze the causes of errors in financial statement of a certain company and bank. In this research, it was discovered that the number of students' percentage who gave the correct answer in analyzing the problem was 63.52%. Based on correlation analysis between each statement item of the implementation of scientific approach in financial accounting learning and higher-order thinking level (analyzing) showed that at the learning stages of observing (item 1 and 2), questioning (item 3), and communicating (item 6 and 7) was insignificant. While, at the learning stages of experimenting/gathering information (item 4) and associating (item 5) was significant.

For the second part, students were asked to evaluate the different records between company's financial statement and bank statement. In this research, it was discovered that the number of students' percentage who gave the correct answer was 91.05%. Based on correlation analysis between each statement item of the implementation of scientific approach in financial accounting learning and higher-order thinking level (evaluating) showed that at the learning stages of observing (item 1 and 2), questioning (item 3), and communicating (item 6 and 7) was insignificant. While, at the learning stages of questioning (P-2), experimenting/gathering information (item 4) and associating (item 5) was significant.

For the third part, students were asked to make a correct bank reconciliation report. In this research, it was discovered that the number of students' percentage who correctly made a correct bank reconciliation report was 70.83%. Based on correlation analysis between each statement item of the implementation of scientific approach

in financial accounting learning and higher-order thinking level (creating) showed that at the learning stages of observing (item 1 and 2), questioning (item 3), experimenting/gathering information (item 4), associating (item 5), and communicating (item 6 and 7) was significant.

A mean of the level of students' higher-order thinking skills in learning accounting was 79.48 (on scale of 0-100). Based on correlation analysis between each statement item of the implementation of scientific approach in financial accounting learning and higher-order thinking level (overall) showed that at the learning stages of observing (item 1), questioning (item 3), and communicating (item 7) was insignificant. While, at the learning stages of questioning (item 2), experimenting/gathering information (item 4), associating (item 5) and communication (item 6) was significant.

Generally, the findings of this research indicated that the implementation of scientific approach in financial accounting learning was in line with the learning objectives in Curriculum 2013, which was improving students' intellectual skills especially on higher-order thinking skills (Hosnan, 2014). Higher-order thinking is the dimension of a cognitive process that consisting the skills of analyzing, evaluating, and creating (Anderson and Krathwohl, 2010). In the dimensions of that cognitive process, knowledge substance and cognitive process are integrated. By doing so, it facilitates students in learning as well as facilitates teachers to combine the learning objectives and learning assessment.

Research finding indicates that the degree of the correlation between the implementation of scientific approach in financial accounting learning and higher-order thinking level was very weak (Spearman's rho (rs) value = 0.135). It showed that: (1) even though teachers has received briefing materials form seminars, trainings, workshops, and such like, they apparently remain unclear to learning methods in Curriculum that are different from the previous curriculum. As stated by Rumiati (2014), the Special Staff of the Minister and Education and Culture (Mendikbud) of Supervision and Control (UKMP3), what mainly differentiate between Curriculum 2013 and previous curriculum is scientific approach learning. It was discovered in many schools that teachers found it difficult to implement such approach in their learning process.

Teachers' unfamiliarity to emphasize on associating aspect in learning has become a gap between levels of education, namely elementary school to junior high school, junior high school to high school, and high school to university. Moreover, it was worsened by the learning conditions that still tended to be oriented to the teacher rather than to the students. It affected students to not have enough space to improve their higher-order thinking skills. Therefore, if data description showed that the level of higher-order thinking skills was categorized as good, then it was not caused by the very good implementation of scientific approach but was caused by teachers' emphasis on cognitive aspects in the learning process as done in the previous curriculum; (2) the stage of scientific study has been carried out in this order, but the teachers forget that flexibility may be necessary to consider the characteristics of learners and learning materials; (3) unfamiliarity teachers to emphasize the aspects of reasoning in learning so that students know more about the 'what' than the 'why'; (4) The teacher has not found the easiest way of learning as a result of mastery of the material and teaching skills related to certain materials and conditions that accompany the students; (5) Focus accounting learning in schools generally more on the procedural aspects/skills than scientific aspects. Procedural knowledge is "knowledge about how or how to" do something. Factual knowledge acquired (Alexander, et al., 1991; Anderson, 1983; de Jong and Ferguson-Hessler, 1996; Dochy and Alexander, 1995).

In general, procedural knowledge is divided into three subtypes, namely: (1) knowledge of skills in certain fields and algorithms; (2) knowledge of the techniques and methods in a particular field; and (3) knowledge of the criteria for determining when to use appropriate procedures.

CONCLUSIONS

The findings of this research revealed that: (a) the implementation of scientific approach in financial accounting learning, the field of business and management skills, financial skills program, and package of accounting skills of vocational schools in Special Region of Yogyakarta has been running very well. Teachers has implemented learning stages based on scientific approach as regulated in Permendikbud No. 13 of 2014, covering observing, questioning,

experimenting, associating, and communicating; (b) there is positive correlation between the implementation of scientific approach in financial accounting learning and the level of higher-order thinking skills. Correlation category between the implementation of scientific approach in financial accounting learning and the level of higher-order thinking skills is very weak.

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