

Bring Active Learning into the Accounting Classroom

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1 Introduction

The declining in the number of accounting students trend has been observed recently across many countries including USA (PCAHE, 2012; Albrecht & Sack, 2000), Australia (Baxter & Kavanagh, 2012; McDowall & Jackling, 2010), New Zealand (Tan & Laswad, 2006; Fedoryshyn & Tyson, 2003) and Ireland (Byrne & Willis, 2005). Japan is not an exception of this downside. A recent report in a Japanese newspaper states that the number of examinees who sat for the Certified Public Accountant (CPA) Examinations in 2013 dropped by 40% compared with the number of candidates in 2009 (Minami, 2013). The Certified Public Accountants and Auditing Oversight Board (CPAFOB), who is the public authority in charge of the CPA examination, also comments on this significant decrease in the numbers of CPA examinees and alerts the latest unfavorable trend that students are being discouraged both to seek to become a professional accountant and to choose their major in accounting (Anon, 2014).

Literature in accounting education confirms that business students at the introductory level: are unsuccessful in passing accounting courses (Jackson, 2014; Sargent et al., 2011); do not seek for a career in professional accounting (Jackling, 2014; PCAHE, 2012; Albrecht & Sack, 2000); and elect not to undertake a major in accounting (Laswad & Tan, 2014; Tan & Laswad, 2006). This downward trend creates a concern when it reduces sufficient numbers of high-qualified future accounting professionals. Against this urgent situation, one of the solutions for accounting education is regarded to bring active learning into the accounting classroom. Active learning is defined as any instructional method that engages

students in the learning process (Prince, 2004). According to this definition, active learning requires students to do meaningful learning activities and think about what they are doing (e.g. simulation games, role-plays, flipped classrooms). This type of pedagogy is believed to help students maintain their interest and learning motivation (Loeb, 2014; Anderson & Lawton, 2009). Through this active learning process, motivation is of great importance in introductory accounting courses when the majority of students are non-accounting majors and whose level of interest in accounting may be low (Sargent et al., 2011). In addition, motivation is likely to carry more value to predict students' higher performance and outcomes than their ability in introductory classes (Kruck & Lending, 2003). However few studies have undertaken the research on the effectiveness of active learning upon increasing in the possible number of accounting students and accountant candidates.

Given this background, this study aims to investigate the effect of a program incorporated with several active learning approaches, which designed to enhance first year undergraduate business student's motivation toward accounting especially in term of declaring a major in accounting and aspiring for jobs in the accounting fields. In this study, the Accounting Active Learning Seminar (AALS) is designed by the authors and implemented to achieve this above goal. Through the AALS, first year undergraduate business students are provided a chance to have experiences of various active learning approaches, then this study implements a quasi-experimental analysis by comparing the difference in change of students' learning motivation with their counterparts who are not given similar chance of taking active learning approaches in the accounting classroom.

Following this introduction, the paper explains what the AALS is and how it works. The paper then outlines the prior related literature and theoretical framework applied to this research, which incorporates the development of our research questions. This is followed by sections on the research methodology and the results of the analyses. Discussion arising from the analyses then follows. The

final section of the paper discusses limitations of the study and implication for future studies.

2 Accounting Active Learning Seminar (AALS)

The researchers of this study designed and implemented an active learning-based course titled the AALS that urges students to engage with accounting course in an attempt to increase the number of accounting students in the faculty of commerce and also to encourage them to aspire for accounting professions and other jobs in the accounting field. The reason why the researchers developed this program is to address the latest issue in the accounting field where first-year students has been less attracted by ordinal and traditional accounting courses, where passive lecture-type courses are implemented mainly concentrating on memorizations of standards and calculations of numbers. As the result, many students lose their interest and learning motivation, which may cause their redemption of introductory accounting courses and they finally do not major in accounting. In contrast to the traditional courses of accounting, AALS highlights the incorporation of several Active Learning methods during the semester. Active learning approaches have been applied in various disciplines, such as science education (Riedinger et al., 2011), criminal Justice education (Payne et al., 2003), information system and technology education (Kamoun & Selim, 2007; Jamieson et al., 1991), business education (Stainton et al., 2010; Anderson & Lawton, 2009). Active Learning approaches also have been applied to date for the accounting program (e.g. Jackson, 2014; Loeb, 2014), but the number of such cases is still limited.

The AALS of this study consists of 15 weeks in a semester, and each week runs for 90 minutes class. The first week of this course begins with the researchers of this study who provides the aims of the AALS that is designed to engage students more actively with learning accounting, attract more students and persuade them to choose their future career as accounting professions. This first week also intro-

duces the course contents, especially emphasises that this course is integrating with several active learning approaches such as simulation games, field trips and guest lecturers.

Followed by this first week, 10 guest lecturers are invited in the classroom each week to deliver their speeches. Prior literature suggests that inviting a guest lecturer represents one prominent form of active learning (e.g. Jackson, 2014; Butler & Wielligh, 2011; Leong & Kavanagh, 2013). Guest lecturers in the AALS are basically accounting professions such as the Certified Public Accountant (CPA) and Tax Accountant, together with other practitioners working in the accounting fields including Business Executives, Chief Financial Officers, public servants from the Regional Taxation Bureau and the local office of the Ministry of Economy, Trade and Industry. These guest lecturers talk about their profiles and details about their careers in terms of attractiveness, advantages, difficulties and future perspectives.

The literature generally agrees that a guest speaker inviting in the classroom would provide a better balance between theory and practice (Butler & Wielligh, 2011; Kamoun & Selim, 2007). Using this teaching method also helps to keep students' interest and learning motivation higher (Loeb, 2014; Liu et al., 2012; Fawcett & Fawcett, 2011; Ormord, 2004; Jamieson, 1991). This method allows students to share knowledge about an interesting practical topic that falls outside the scope of the syllabus and that textbooks do not cover (Kamoun & Selim, 2007; Ormord, 2004; Payne et al., 2003). The lecturers are carefully selected from the networks of the authors or recommendations from Dean and other professors of the faculty. Alumni have the priority to be chosen as the lecturers because their speeches are thought to be more persuasive and familiar for the present students who are studying at the same university from which these guest speakers graduated. This event also facilitates time for face-to-face discussion between a guest and students.

Additional features of AALS to engage students in accounting is to introduce them with a simulation game and a real-world business event. The simulation game is regarded to as a useful teaching tool because it: 1) enhances students' engagement and motives, 2) establishes critical thinking skills, and 3) enables the transfer learning through the game to apply for the practice (Anderson & Lawton, 2009). In the AALS, several types of the simulation games have been selected to introduce students during the semester. We find several accounting researchers in Japan invent self-developed innovative simulation games and apply them as the teaching materials in the accounting program. The AALS invite these researchers and organise three-hour intensive workshop during a weekend. Some examples using these simulation games for the AALS in the past semester are "Active Learning Class Using Monopoly™", "Learning Accounting by Paper Tower" and "Lego Simulation Game for Learning Accounting". According to Lean et al. (2006), the simulation game implemented in the AALS is classified as the non-computerised educational game. This prior study also indicates that the simulation setting using board-, card-, and paper-based games have been employed across variety degree programs, but they are still rare.

In the AALS, students are required to play the simulation game and compete to win against their peers in the course. To play a game is not only fun, but also provides students with opportunities to learn basic principles, concepts and technical terminologies of accounting and business. For instance, the AALS organised a simulation game using paper cranes in 2014. In this simulation game, students were grouped into teams and each team simulated a factory to produce as many paper cranes as possible. To win the game, students must operate their production activities effectively and efficiently so as to produce the largest numbers of paper cranes. Through this game, the instructor provides technical concepts such as mass production, manufacturing management and lean production system, and explained how to apply these concepts to manage their whole activities.

The researchers of this study designed the game to simulate students' interest in accounting, enlarge their willingness to learn accounting and as a consequence stimulate their decision to major in accounting and their aspiration for accounting jobs as their future career. Related to this, Anderson & Lawton (2009) agreed the simulations as an educational material would improve students' attitude toward the discipline, provide a common experience for class discussion, and engage students in the learning process.

The AALS also provides students an opportunity to simulate a real business outside of the classroom. Students join in a local autumn festival during a weekend and run a one-day real business. This experiential learning simulates variety of components in business such as business planning, logistics, human resource management, marketing and accounting. Students are basically formed into groups of between five and ten members, and initially raise their own money for their business. They need to plan the details of their one-day business including what they sell to whom, how and what they prepare for their business. Their goal, set by the instructors, is to earn as much profit as possible so that all groups work harder to win this competition. Before operating their business, each student group is required to calculate projected profit of their business by using Cost-Volume-Profit (CVP) analysis and any other accounting techniques, and give a formal presentation about their plans in the classroom. Students can apply whatever they have learnt in the past or whatever they have independently learned. In a week after the autumn festival, students gather in the classroom to report the financial outcomes, review their activities, facilitate discussion and the winner is announced.

In the literature, this type of active learning approach is defined differently depending on studies. Riedinger et al. (2011) for instance explores similar teaching activities in science education and defines them as the informal education, which stands for the learning that takes place outside of the formal school setting. According to this prior study, the informal education includes going to field trip

or attending to internship programmes, but are not limited to them. Other studies calls this type of learning approach as the experiential learning (e.g. Stainton et al., 2010; Lainema & Hilmola, 2005; Spector, 2000; Gentry, 1990). These studies admit experiential learning is an active learning approach that uses the senses of build or construct learning by experiencing problems and issue and reflecting on those experiences in order to clarify understanding (Stainton et al., 2010). Gentry (1990) points out experiential learning is accommodating the concept of “learning by doing”, which nurtures understanding by encouraging personal involvement through participation and interaction both in feeling being affective and thought being cognitive. Other studies also support affective dimensions of this learning approach enhancing learners’ motivation, interest and confidence (Falk & Dierking, 2000; Schauble et al., 1996).

3 Literature Review

Early research by Bonwell & Eison (1991) suggests that “active learning” lacks an identifiable origin or a common definition, despite its frequent appearance in the literature. This study tentatively proposed to define active learning as anything that “involves students in doing things and thinking about the things they are doing”. More precisely, Prince (2004) summarised Bonwell & Eison’s (1991) definition as an instructional method that engages students to do meaningful learning process. The question here is how we can effectively engage students in a meaningful learning process. According to the expectancy-value theory, originally advocated by Tolman (1932) and Lewin (1938), student’s engagement in an activity motivated when it is perceived to be linked to the satisfaction (value aspect) of personal needs and when there is a positive expectancy (expectancy aspect) for successful implementations (Keller, 1987). Therefore, if an implementation of active learning changed successfully students’ motivation higher in terms of value and/or expectancy aspects, then students could achieve better engagement in learning.

In the accounting literature, research has investigated the roles of active learning on enhancing students' learning motivation that ultimately aims to achieve their goals of this learning approach. Butler & Wielligh (2011) for instance reports an empirical evidence of student's higher motivation and engagement in Auditing course elaborated by an active learning approach that included guest lecture sessions in an Auditing course for tertiary undergraduate accounting students in South Africa. Their findings discovered the active learning approach generated students' high appreciation and increasing positive attitudes towards a guest speaker as an appropriate and useful teaching method. Along with this study, Metrejean et al. (2002) explored the effect of a pedagogical method carrying accounting professionals as guest speakers in the classroom. A questionnaire-based survey was conducted after each semester to collect students' feedback about the course. The result of their qualitative and quantitative analyses revealed that the guest speaker event changed positively students' awareness of accounting, strengthened their confidence in their accounting career decision and motivated to learn accounting. Although these two studies show evidence that active learning approach was effective to improve ones' motivation and attitude of learning accounting, they simply focused on the effectiveness of one single strategy of a guest speaker among various active learning approaches. Furthermore, they collected data from the treatment group that actually affected by the active learning but fail to prepare the control group to compare the differences in outputs.

Riedinger et al. (2011) in contrast addressed these drawbacks of Butler & Wielligh (2011) and Metrejean et al. (2002) to extend this research line. Although Riedinger et al. (2011) is not in an accounting literature, this research examined curricular and pedagogical innovations using an informal education setting in an undergraduate science methods course for elementary education majors in USA. The authors incorporated several components such as guest speakers, virtual field trip and a living case program with the experimental course and compared the

data from control group who did not take this informal science education course. Collecting authors' observations, instructors' reflections and students' feedback, this study concluded that positive attitude towards science was notably improved for treatment group while the degree of improvement for control group's attitude was statistically less than that of treatment group. Accordingly, Riedinger et al. (2011) certainly contributes to the literature by presenting solid evidence about the effectiveness of comprehensive active learning setting to change learners' motivation and attitudes. But this study solely addressed on one type of attitude about preference of science, and does not clarify how active learning approaches work on other values of attitudes (e.g. interest, confidence, satisfaction) and in the other disciplines including accounting.

Sivan et al. (2000), which was also not an accounting study, examined the effectiveness of active learning over students' learning motivation and learning approach. Using Bigg's (1987) Study Process Questionnaire (SPQ), the researchers of this prior study collected data from undergraduate business and economics students in Hong Kong. The SPQ is the instrument to measure one's approach to learning such as surface approach, deep approach and achieving approach (Biggs, 1987). According to this theory, one's deep approach is based on intrinsic motivation or curiosity, while surface approach is based on extrinsic motivation such as more materialistic and realistic purpose. With this theoretical construct, the active learning including games, role-play, simulations and discussions were implemented in the courses. The findings indicate that the change in the students' learning approach before and after experiencing active learning was reflected in an increase in deep approach. This study presented a statistical association between intrinsic motivation of learning and quality of students' learning measured by learning approaches, but hypothesised a premise that high intrinsic motivation would be facilitated simply by implementing active learning.

In the accounting literature, Jackson (2014) also questioned an empirical rule:

increased students' effort and motivation results in higher performance. Given this construct, the study explored whether it would be effective to improve students' academic performance of upper-division coursework by using an intervention called "accounting boot camp". This boot camp was actually intended to enhance their learning motivation. The accounting boot camp was designed to combine several best active learning practices developed in the literature such as inviting guest lecturers and facilitating discussion times for students. The statistical result from 278 students concluded that attendees of this boot camp outperform their non-attending peers in terms of academic result of intermediate accounting course. However, similar to Sivan et al. (2000), attending to the boot camp was solely used as the proxy of higher motivation in this study and the authors did not examine whether the boot camp actually stimulated students' learning motivation or not.

Sivan et al. (2000) and Jackson (2014) set student's goal of learning as obtaining deeper learning approach and achieving higher academic evaluation, respectively. But no studies was found to explore the effect of active learning on students' career aspiration to become accounting professions and their decision to major in accounting, of which issues are quite urgent in accounting education. As seen above section, accounting is becoming less attractive for undergraduates who have not yet decided their major and accountant candidate is dramatically decreasing. Apart from the academic outcome or learning approach in the recent prior studies, it is found that earlier works in the higher education research have devoted to implement active learning to take advantage of its benefits in preparing students for their careers (e.g. Umbreit, 1992; Russell & Rothschadl, 1991; Haywood, 1989). This trend is also recently reformed and coined as the Work-Integrated-Learning (WIL). In relation to this, Leong & Kavanagh (2013) recommends that active learning approaches such as field visits and guest speakers should be integrated in the accounting programme as the WIL tools. The aim of this integration is explained to develop a better understanding of student's future career path,

personal and professional direction, and extend their work field knowledge and employment opportunities (Leong & Kavanagh, 2013). Accordingly, this prior study justifies that career aspiration for an accounting profession can be regarded as the actual output from effective application of active learning. Choice of major in accounting is also thought to be appropriate output since the choice of major is the pivotal step to develop successful career path. Given above literature review, the present research investigates the effect of active learning on these two goals of accounting work aspiration and choice of major in accounting through the process of motivation driven by this form of learning approach. For this purpose, the following three Research Questions (RQ) were formulated.

RQ1: Do first year undergraduate business students who enroll in AALS (AALS students) have a higher degree of learning motivation in accounting than those who do not enroll in AALS (Non AALS students)?

RQ2: Do AALS students have stronger work aspiration to become professional accountants than Non AALS students?

RQ3: Is AALS students more likely to choose their major in accounting than Non AALS students?

RQ4: Is students' higher motivation enhanced by AALS associated with strong aspiration to become professional accountants?

RQ5: Is students' higher motivation enhanced by AALS associated with more frequent decision to major in accounting?

4 Research Methodology

4.1 Data Collection

Participants of this study comprised 57 first year undergraduate business students enrolled in a compulsory course called "Introductory Accounting Course" at a middle size Midwestern University in Japan. Of the 57 students, 24 students also enrolled in a selective course titled "Accounting Active Learning Seminar

(AALS)”. Both courses commenced in early April and finalised in late July. The former “Introductory Accounting Course” was the typical lecture type course that provides basic accounting and bookkeeping studies over 15 weeks and required for the first year business students to enroll as a prerequisite class for their degree program, while the latter AALS was an active learning type course and students could choose to enroll in AALS as an elective course.

This research applied a quasi-experimental research method in an attempt to investigate the impact the AALS intervention on change to participants’ learning motivations that would ultimately suppose to affect students’ career aspiration of accounting professions and also their choice of major in accounting. The AALS is an elective course open for all business students regardless of their university year. In 2014, total of 46 students were voluntary enrolled in AALS, but we used 24 first year students enrolled both in AALS and Introductory Accounting Course as the experimental group (AALS students) to compare with the control group who participated only in the Introductory Accounting Course (Non AALS students). We selected only 24 students who were first year students and also completed all questionnaire items. Due to the above setting, this study can not claim a pure and random sampling needed for experimental design because students’ intention to enroll in the AALS may be influenced by these variables. However, we compare students in both experimental and control groups in terms of several demographic factors, independent and dependent variables measured at the pre-test stage in order to assure homogeneity of two student’s groups. The result of this homogeneity test will be reported in the Result and Interpretation section below.

4.2 Analysis Method and Questionnaire Development

With the five Research Questions developed in the above section, this study prepared a questionnaire-based survey containing the following question items:

1) Motivation of Learning Accounting; 2) Accounting Work Aspiration; and 3)

Choice of Major in Accounting. Using this instrument, the data were collected both at the beginning and end of the semester by using pre- and post-tests and compared differences in the scores of several variables among AALS and Non AALS groups to figure out the effect of the intervention applying the AALS. T-test is applied for this analysis. Also the statistic associations between variables are examined by using logistic regression technique.

Firstly, participants' motivation of learning accounting was measured by the Course Interest Survey (CIS) in the present research setting. The CIS, which was originally invented by Keller (2010; 1987), is a situational measure of individual's motivation towards a particular instructional setting (Keller, 2010). Originally, the CIS instrument was developed in correspondence with a theoretical foundation represented by the Attention-Relevance-Confidence-Satisfaction Model (ARCS Model) and designed to measure students' reactions to classroom instruction (Keller, 2010; 1987). The ARCS model categorises motivational concepts into four groups, which indicate overviews of the major dimensions of human motivation in learning activities (Keller, 2010). This model is also used to create strategies to stimulate and sustain motivation. In this study, the ARCS model was used to obtain a clear grasp of the specific four factors of Attention (ATTENTION), Relevance (RELEVANT) and Confidence (CONFIDENT) and Satisfaction (SATISFACT) involved in students' learning activities. Table 1 shows the details of the four components of the ARCS model that encompass the major factors that influence the motivation to learn (Keller, 2010). The major process question in Table 1 illustrates a typical question of each category that students might ask in relation to their learning motivation. The ARCS model has been validated by numerous research projects and by other indicators of validity (Keller, 2010), however no prior research has applied this model in the accounting and accounting education literature.

In Japan, this instrument has been translated from the original English version

Table 1: ARCS Model Categories, Definitions, and Process Questions (Keller, 2010)

Category	Definition	Major Process Question
Attention (ATTENTION)	Capturing the interest of learners; stimulating the curiosity to learn	How can I make this learning experience stimulating and interesting?
Relevance (RELEVANT)	Meeting the personal needs/goals of the learner to effect a positive attitude	In what ways will this learning experience be valuable for my students?
Confidence (CONFIDENT)	Helping the learners believe/feel that they will succeed and control their success	How can I via instruction help the students succeed and allow them to control their success?
Satisfaction (SATISFACT)	Reinforcing accomplishment with rewards (internal and external)	What can I do to help the students feel good about their experience and desire to continue learning?

into a Japanese version and released to the public (Suzuki & Fellows, 2010). The present research used the translated version to ensure reliability. In this study, participants' motivation for the course was measured by using pre- and post-test with the CIS instrument. The CIS instrument consisted of 34 items that measured each of the four components of the ARCS model of learning motivation (see A1 in Appendix). Students responded to each question by using a five-point Likert scale and anchored in a score of one for Not True and a score of five for Very True. Each of four ARCS components were calculated by using a scoring guide (see A2 in Appendix) both at the pre- and post-test and compared differences between scores in each construct at two measurement points in order to figure out shifts of their course motivation by implementing the AALS.

Second, this study also asked students questions about their accounting work aspiration and choice of major in accounting as the two goals of the AALS as follows. With regard to accounting work aspiration, participants were asked to respond a question about their work aspiration to become an accounting professional (WORKASP), which was anchored in likert scale beginning from '1' for strongly disagree to '5' for strongly agree. This variable was measured both at

the pre- and the post-test stage separately and compared differences between the scores at two measurement points in order to figure out the effectiveness of the AALS and the association with learning motivation as the result of the AALS.

Participants were also codified into two groups in accordance with their decision of major in accounting. The first year students were required to choose their major in five-months time after the experimental period was ended (early December). The researchers of this study created the variable of MAJOR by identifying each student's major using the database from the Student Administration Office at the university. Students who decided to major in accounting subjects including Financial Accounting, Management Accounting, Auditing, Financial Analysis and Tax Accounting were coded as one, while those who majored in other business subjects (e.g. Business Administration, Management Strategies, Human Resource Management, etc.) was coded as zero.

5 Results and Interpretation

5.1 Descriptive data

To assure the homogeneity of both experimental and control groups, this study firstly compared students from both groups in terms of age and gender. No significant difference was found between two groups in these variables. The result is displayed in Table 2. The mean age across participants was 18.12 years, and approximately 42% of the students were female.

5.2 Effect of AALS to Learning Motivation

Students' motivation of learning accounting was initially analysed to investigate the effect of AALS. Keller's (2010) CIS was used to measure participants' learning motivation in accounting in terms of the four dimensions: ATTENTION, RELEVANT, CONFIDENT and SATISFACT. The homogeneity check found no significant differences in these dimensions between AALS and Non AALS stu-

Table 2: Descriptive Information

	AALS students	Non AALS students	Total	Preliminary Tests
Number of students	24 (%)	33 (%)	57 (100.0%)	
Average Age (Std. Dev.)	18.25 (.675)	18.03 (.174)	18.12 (.466)	$t = -1.556^a$
Min	18	18	18	$p\text{-value} = .132$
Max	21	19		
Gender				
Male	13 (54.2%)	20 (60.6%)	33 (57.9%)	$\chi^2 = .627^b$ ($p = .787$ /
Female	11 (45.8%)	13 (39.4%)	24 (42.1%)	$\Phi = .064$)

a Applied t-test. Equal variance was not assumed. Other assumptions were also checked and found to have no other violations.

b Applied Chi-square test. Assumption check was conducted and found no violation.

Table 3: T-test for Learning Motivation

Panel A: Independent-samples T Test

Item (57)	Pre Test Mean (Std. Dev.)		t (p-value)	Post Test Mean (Std. Dev.)		t (p-value)
	AALS Students (24)	Non AALS students (33)		AALS Students	Non AALS students	
ATTENTION	33.91 (2.48)	31.87 (3.66)	-2.35 (.022)**	34.79 (2.32)	29.54 (3.95)	-6.27 (.000)***
RELEVANT	37.20 (4.13)	36.63 (3.74)	-.545 (.588)	38.04 (3.41)	36.30 (4.10)	-1.69 (.097)*
CONFIDENT	28.41 (3.82)	28.90 (3.44)	.509 (.613)	30.41 (3.72)	28.66 (3.68)	-1.76 (.084)*
SATISFACT	33.41 (4.25)	32.69 (4.29)	-.628 (.533)	35.87 (4.33)	31.54 (4.14)	-3.818 (.000)***

Panel B: Paired-samples T Test

Item	AALS Students (24) Mean (Std. Dev.)			Non AALS Students (33) Mean (Std. Dev.)		
	Pre Test	Post Test	t (p-value)	Pre Test	Post Test	t (p-value)
ATTENTION	33.91 (2.48)	34.79 (2.32)	-1.45 (.158)	31.87 (3.66)	29.54 (3.95)	2.89 (.007)***
RELEVANT	37.20 (4.13)	38.04 (3.41)	-1.09 (.285)	36.63 (3.74)	36.30 (4.10)	.398 (.693)
CONFIDENT	28.41 (3.82)	30.41 (3.72)	-2.65 (.014)**	28.90 (3.44)	28.66 (3.68)	.331 (.743)
SATISFACT	33.41 (4.25)	32.69 (4.33)	-2.12 (.045)**	32.69 (4.29)	31.54 (4.14)	1.173 (.250)

Equal variances were assumed for all variables. Other assumptions were also checked and found to have no other violations.

*** significant difference at the level of.01, ** significant difference at the level of.05, * significant difference at the level of.1

dents except for ATTENTION (see the result of Pre Test of Panel A in Table 3). The results of the T-test demonstrated significantly higher score in ATTENTION for AALS than for the Non AALS group. This difference in ATTENTION could

be a factor that will enhance AALS students to elective enroll in the AALS more strongly than Non AALS students.

The effect of AALS was then addressed to compare differences in the scores of four motivational dimensions measured at the post-test point between AALS and Non AALS groups (see Panel A in Table 3). The result revealed the scores of all four dimensions for AALS group were significantly higher than those of Non AALS group.

Additional paired-sample t-test was conducted to compare the differences in four motivation scores between at the pre-test and the post-test stages for AALS students and Non AALS students, respectively. Two dimensions of CONFIDENT and SATISFACT for AALS students were significantly higher (at the 5% level) at the post-test than at the pre-test (see Panel B in Table 3). The other two dimensions of ATTENTION and RELEVANT obtained higher score at the post-test than at the pre-test, but these scores were not significant. In contrast, for Non AALS groups, the score of ATTENTION was significantly lower at post-test than the score at pre-test. The rest of three dimensions had no significant differences between two points of time (see Panel B in Table 3).

The results in Table 3 addresses RQ1 which shows that students who enroll in AALS have higher confidence and satisfaction at the end of the semester from learning accounting subjects. During same semester, students who do not enroll in AALS loose their attention towards learning accounting, while AALS students still keep their attention to accounting as same degree as they have had at the beginning of the semester.

5.3 Effect of AALS to the Goals of Active Learning

The homogeneity test was initially performed to compare the difference in WORKASP between AALS and Non-AALS students. At the pre-test, there was no significant difference in these scores (See Panel A in Table 4). The WORKASP

Table 4: T-test for WORKASP

Panel A: Independent-samples T Test

Item (57)	Pre Test Mean (Std. Dev.)		t (p-value)	Post Test Mean (Std. Dev.)		t (p-value)
	AALS Students (24)	Non AALS students (33)		AALS Students	Non AALS students	
WORKASP	3.78 (.998)	3.61 (.827)	-.597 (.553)	4.30 (.822)	3.52 (.795)	-3.603 (.001)***

Panel B: Paired-samples T

Item	AALS Students (24) Mean (Std. Dev.)		t (p-value)	Non AALS Students (33) Mean (Std. Dev.)		t (p-value)
	Pre Test	Post Test		Pre Test	Post Test	
WORKASP	3.78 (.998)	4.30 (.822)	-2.958 (.007)***	3.61 (.827)	3.52 (.795)	.533 (.598)

Equal variances were assumed. Other assumptions were also checked and found to have no other violations.

*** significant difference at the level of .01

scores were then compared between two student groups at the post-test. The independent-sample t-test demonstrated a significantly higher score for AALS students than Non AALS students at the 1.0% level (See Panel A in Table 4).

Also, the paired-sample t-test was applied to investigate the change in WORKASP between pre- and post-test for AALS and Non AALS students, respectively. The result addresses RQ2 and shows that AALS students significantly increased their work aspiration for an accounting profession during the target semester, while Non AALS students who did not attend to AALS did not increase their accounting work aspiration during the same period (See Panel B in Table 4). It was found that students of AALS students at the end of the semester aspired more strongly for work in accounting than Non AALS students.

In relation to MAJOR, this study performed a Chi-square test for independence (see Table 5). The outcome demonstrated a significant association between students' enrollment in AALS and their decision to major in accounting, $\chi^2(1, n = 57) = 6.935, p = .008, \phi = .385$. The proportion for AALS students who majored in accounting (62.5%) over scored Non AALS students who similarly majored in accounting (24.2%). This addresses RQ3 and indicates that students who enrolled in AALS were more likely to major in accounting compared with their counterpart

Table 5: Chi-Square Test between Effect of AALS and Students Decision to Major

Major	Student Group		Total
	AALS Students	Non AALS students	
Accounting Subjects	15 (62.5%)	8 (24.2%)	23 (40.4%)
Non Accounting Subject	9 (37.4%)	25 (75.8%)	34 (59.6%)
Total	24 (100.0%)	33 (100.0%)	57 (100.0%)

$\chi^2(1, n = 57) = 6.935, p = .008, \phi = .385$.

No assumptions for Chi-Square test was violated.

students who did not take a course of AALS.

5.4 Associations Between Motivation and Two Learning Goals

This study also examined the role of motivation on learning accounting and on accounting work aspiration among students. The logistic regression was used to analyse this construct to address RQ4. The data in Table 6 reports the result of logistic regression using WORKASP as the dependent variable, which was codified into categorical variables anchored by either one or zero. The original 5-point Likert scale values of four and five were coded as one, representing to students who were willing to aspire for an accounting job. On the other hand, the original values between one and three for WORKASP were coded as zero representing those who were reluctant to aspire for an accounting profession.

The results of this logistic regression analysis reports that the model containing four motivation dimensions (ATTENTION, RELEVANT, CONFIDENT and SATISFACT) were statistically significant ($\chi^2(4, n = 57) = 21.382, p < .01$), which indicates that the model was able to distinguish between respondents who aspire for an accounting profession and those who don't (See A in Table 6). The model as a whole explains between 31.3% (Cox and Snell R Square) and 42.1% (Nagelkerke R Square) of the variance, and correctly classified 75.8% of cases. In this findings, ATTENTION and CONFIDENT had significant and positive contribution to the model, and these odds ratios were 1.300 and 1.369, respectively.

Similar to the WORKASP, this study investigated whether student's choice of major in accounting would be influenced by level of motivation of learning accounting and stereotype of accounting enhanced by AALS. The logistic regression was also applied for this analysis to address RQ5. The result reports that the

Table 6: Logistic Regression Results

	A. WORKASP			B. MAJOR		
	B (Wald)	Std. Error	Exp (B)	B (Wald)	Std. Error	Exp (B)
ATTENTION	.263** (5.198)	.115	1.300	.210* (3.420)	.114	1.234
RELEVANT	-.124 (1.087)	.119	.883	.034 (.087)	.115	1.035
CONFIDENT	.314*** (5.978)	.128	1.369	-.144 (1.816)	.107	.866
SATISFACT	.013 (.015)	.103	1.013	.170 (2.619)	.105	1.185
Constant	-12.940*** (10.017)	4.088	.000	-9.938*** (6.401)	3.928	.000
No. of observation	57			57		
Pseudo R-Square (Nagelkerke R square)	.421			.350		

a: Dependent variable of WORKASP was coded 1 for Yes (participants responded to have aspirations for accounting related works) and 0 for No. The original values both 4 and 5 were categorized for Yes while the value between 1 and 3 were grouped into No.

b: Cook's distance is used as a measure of the influence from the outliers. In logistic regression, a case is identified as influential if the Cook's distance value is greater than 1.0. The mean score of the Cook's distance were calculated as .17 and .022 for WORKASP regression and MAJOR regression, respectively. The result indicates no serious impact of outliers for both regressions.

c: Variance Inflation Factors (VIF) for independent variables were calculated by using ordinal multiple regression procedure to examine any multicollinearity issues. VIFs greater than ten generally indicate a serious multicollinearity problem. The scores of VIF ranged from 2.209 to 1.605 for WORKASP and from 2.249 to 1.643 for MAJOR regression. Further, the scores of Tolerance should be higher than .10. The values of this analysis for were between .623 and .524 for WORKASP and between .609 and .445 for MAJOR regression. Thus, the model employed in this study has no multicollinearity issue.

d: One of the important assumptions for linear regression analysis is that the residuals are normally distributed. In this respect, this research examined normality of the residuals by using Kolmogorov-Smirnov (K-S) test. The value of this test should be greater than .05 when the variable is normal distribution. The value of two regressions were .583 and .361 for WORKASP regression and MAJOR regression, respectively. Accordingly the residuals of two regressions were assured as being normally distributed.

e: One of the important assumptions for Logistic regression analysis is that the residuals are normally distributed. In this respect, this research examined normality of the residuals of two regressions. Normal P-P Plot of regression standardized residual were also drawn to check this issue. The figures proved these were reasonably linear lines from the bottom left to top right. Thus, these results ensured the normality of the residuals.

f: Percentage accuracy in classification was improved from 57.9% to 75.4% and from 59.6% to 71.9% for Motivation and Perception regressions, respectively.

*** Significant at the less than .01 level, ** Significant at the less than .05 level, * Significant at the less than .1 level

model containing all four motivational dimensions were statistically significant (χ^2 (4, $n = 57$) = 17.094, $p < .01$), which indicates that the model was able to distinguish between respondents who decided to major in accounting and those who didn't (See B in Table 6). The model explains between 25.9% (Cox and Snell R Square) and 35.0% (Nagelkerke R Square) of the variance, and correctly classified 71.9% of cases. In this finding, only ATTENTION had significant and positive contribution to the model, and this odds ratio was 1.234.

6 Discussion

Previous literature and theories have suggested that active learning approaches would enhance student's motivation in the learning process so as to achieve the goals of their learning (Jackson, 2014; Prince, 2004; Sivan et al., 2000), but no study has empirically investigate this whole theoretical construct. In this study, the goals of learning were set as the career aspiration for an accounting profession and choice of major in accounting.

Our t-test result revealed that two motivational dimensions of confidence and satisfaction increased among AALS students. In contrast, the logistic regression showed that student's attention and confidence at the post-test had significant correlations with their stronger accounting work aspiration. These statistical evidence shows that active learning affects the level of student's confidence that also helps inspire work aspirations in accounting. The importance of 'confidence' is supported by Metrejean et al. (2002) that points out the guest speaker event would strengthens student's confidence in their accounting career decision. Byrne & Flood (2005) support the importance of this factor by estimating approximately 25 percent of introductory accounting students feel unsure or not confident in their ability to succeed, so that reinforcement of students' confidence by using active learning must be influential. Leong & Kavanagh (2013) also anecdotally observed that field visits and guest speakers in the WIL programme helps develop better

understanding of students' future career path and personal and professional direction. In relation to Leong & Kavanagh (2013), Keller (2010), who invented the CIS measurement defines the confidence as the dimension helping the learner's believe/feel that they will succeed and control their success. This dimension belongs to the expectancy aspect for learner's future success (Keller, 1987), which will be interpreted to link with their career aspiration as the successful learning outcome. As a consequence, the present study statistically assured the effect of the confidence inspiring student's accounting career perspective would be emerged from the comprehensive set of active learning approaches of the AALS program.

The 'satisfaction' dimension for AALS students also significantly increased during the semester, but this was not the attribute statistically associated with student's accounting work aspiration. Keller (2010) defines satisfaction as reinforcing accomplishment with rewards. Although students are satisfied with learning accounting under the AALS setting, this change of student's attitude is found not to influence student's pursuit of accounting jobs.

Furthermore, the results of the t-tests reveal that the attention was another seminal factor having a correlation with accounting work aspiration and choice of major in accounting, but the score of this motivational factor was not changed after the AALS intervention. Nevertheless, the attention for AALS students may be interpreted as the effective factor influenced by active learning if its impact is compared with degree of impact towards Non AALS students. Our t-test result displays that the score of attention for Non AALS students were significantly lower at the post-test than their score at the pre-test, while AALS students did not change statistically their attention score between two measurement points. This means active learning would work effectively at least not to discourage AALS student's attention during the semester. Therefore, the first year students, whose enrollment in AALS helps them keep their attention to learning accounting, tend to highly aspire for accounting related jobs and major in accounting later of the year.

Keller (2010; 1987)'s ARCS model indicates that attention is the dimension to capture the interest of learners and stimulate the curiosity to learn. This dimension postulates an intrinsic aspect of motivation. Given this construct, the present study statistically ensures that the increase in the intrinsic attention to learning effectively improves both accounting career aspiration and choice of major in accounting. The similar finding is reported by several previous studies in the other disciplines. For example, Sheldon & Krieger (2007; 2004) empirically confirmed that reductions of intrinsic motivation among law students were correlated with the decline in their mental health, grade average points and bar exam result. This implies that losing intrinsic interest will bring the failure of achieving learning goals.

The effect of active learning on learner's intrinsic motivation has been discussed in Sivan et al. (2000), which found that active learning is effective to enhance student's application of intrinsic deep learning approach. However, the flaw of this study was to hypothesise a premise that active learning can always generate positive learner's motivation. With regard to this point, the present study presents a contradictory result because the effectiveness of the AALS to provoke student's intrinsic attention was not statistically significant but positive when we solely compared the degree of attention with the Non AALS counterparts. The attention score at the post-test for AALS students does not increase from at the post-test while Non-AALS students decrease its score during the same period. Jackson (2013) also used active learning as the proxy of higher intrinsic motivation among students, but the current research found that active learning approach does not always produce their higher level of intrinsic motivation. This implies to curriculum designers and individual instructors by whom careful attention should be paid to design the pedagogies incorporating with active learning in the accounting programme in order to exert appropriate enhancement of students' intrinsic learning.

Keller (2010) further proposes three sub-components of attention, which are intended to consider when the educators would design their instruction stimulating

higher level of student's attention. These sub-components are Perceptual arousal, Inquiry arousal and Variability, each of which indicates that novel stimuli should be introduced to capture the attention in the early stage of learning (Perceptual), challenging and unsolved problems should be provided to evoke student's sense of mystery (Inquiry) and variations in learning format should be given to sustain their interest (Variation), respectively (Keller, 2010). Given these sub-constructs, two component of perceptual and inquiry arouses are thought to be properly exploited by the AALS of this study, because the teaching approaches applied in the AALS are all active learning-type methods that engage students in the centre of learning process (Prince, 2004). With these unique educational pedagogies, students will be aroused perceptually to generate higher attention to the learning. Also the implementation of simulation game and one-day business simulation event give students unstructured and unsolved problem settings that facilitate challenging situations to evoke their sense of mystery towards social phenomena. The literature suggests that the simulation game and experimental type learning approaches allow students to engage in higher order cognitive and generic skills (Phillips, 2005) and helps develop students' critical thinking, judgment and problem-solving abilities (e.g. Jacking, 2013; Coetzee & Schmulian, 2012).

In contrast the AALS may not meet sufficiently with variation aspect, because the majority of pedagogical format used in the AALS is the guest lecturer event. This format is basically regarded to as the active learning, but continuous usage of this teaching style over the semester may bore students and decline their attention. This drawback can be eliminated by arranging lecturer-style guest speeches into collaborative interview-style talks or active response events between guests, instructors and attendees. Continuous changes in teaching format are recommended by Keller (2010) to maintain student's attention. In addition, relatively less opportunities for simulations and experiential-typed approaches were provided to students than those of guest lecturer event in the present AALS program. Biggs

(1987) articulates that intrinsic motivation occurs when students deliver enjoyment from carrying it out. However, the unbalanced portfolio of active learning methods in the present AALS may fail to accommodate variation of instruction design, which may not contribute to develop appropriate attention of learning among AALS students.

7 Conclusion

The purpose of this study was to investigate the effect of the AALS program incorporated with several active learning approaches designed to encourage first year undergraduate business students to major in accounting and to aspire for jobs in the accounting fields. This was the first study to provide statistical evidence for investigating this construct. The finding revealed that active learning does not always work to enhance students' accounting work aspiration and choice of major in accounting. Active learning methods implemented in the AALS were found effective to improve both confidence and satisfaction dimensions of motivation and also to stop decreasing attention factor, but only attention and confidence factors are influential to encourage students to seek for accounting jobs and to choose their major in accounting. This implies that accounting educators need to design active learning setting carefully to address attention and confidence attributes. According to Keller (2010; 1987), confidence is the attribute of student's expectancy to seek for their future success. The components of the AALS in this study were guest lecturers, simulation games and running-a-business experience outside of the campus, and these components successfully stimulate student's confidence of learning. Attention on the other hand is the attribute of intrinsic interest in learning accounting (Keller, 2010; 1987). Unfortunately this value attribute could not be sufficiently developed by the AALS. Thus, appropriate portfolio of active learning methods to integrate with the programme is of great concern to develop stronger learner's intrinsic interest in accounting.

There is still lack of guideline as to how educators and program coordinators can deal with active learning approaches in the accounting programme in order to achieve student's learning goals. This issue can be extended to the further research to address. One limitation of this study is about generalization issue. This study used data collected from only one University in Japan at a particular point of time. The number of data is also very small, too. Data should be extended into a more longitudinal and diverse nature to assure the generalizability of the findings. International comparison studies with the data from other countries may be able to bring us different aspects of implications. Prior studies admits students from different countries vary in profile of learning motivation in accounting (e.g. Byrne et al., 2012), but no studies have been undertaken to examine the effectiveness of active learning among students from various nations. Nevertheless, this study discovered empirical evidence of the effectiveness of active learning to increase student's motivation that ultimately change their accounting career aspiration and choice of major in accounting. This finding would help encourage accounting educators to incorporate more active learning type pedagogies in the accounting classrooms, which effectively stimulate student's successful goal of learning accounting in the tertiary school.

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Appendix

A1: The Course Interest Survey Instrument (Keller, 2010)

There are 34 statements in this questionnaire. Please think about each Statement in relation to the class you have just taken and indicate how true it is. Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear. Think about each statement by itself and indicate how true it is. Do not be influenced by your answers to other statements. Record your responses on the answer sheet that is provided and follow any additional instructions that may be provided in regard to the answer sheet that is being used with this survey. Use the following values to indicate your response to each item.

- 1 (or A) = Not true
- 2 (or B) = Slightly true
- 3 (or C) = Moderately true
- 4 (or D) = Mostly true
- 5 (or E) = Very true

1. The instructor knows how to make us feel enthusiastic about the subject matter of this course.
2. The things I am learning in this course will be useful to me.
3. I feel confident that I will do well in this course.
4. This class has very little in it that captures my attention.
5. The instructor makes the subject matter of this course seem important.
6. You have to be lucky to get good grades in this course.
7. I have to work too hard to succeed in this course.
8. I do NOT see how the content of this course relates to anything I already know.
9. Whether or not I succeed in this course is up to me.
10. The instructor creates suspense when building up to a point.
11. The subject matter of this course is just too difficult for me.
12. I feel that this course gives me a lot of satisfaction.
13. In this class, I try to set and achieve high standards of excellence.
14. I feel that the grades or other recognition I receive are fair compared to other students.
15. The students in this class seem curious about the subject matter.
16. I enjoy working for this course.
17. It is difficult to predict what grade the instructor will give my assignments.
18. I am pleased with the instructor's evaluations of my work compared to how well I think I have done.
19. I feel satisfied with what I am getting from this course.
20. The content of this course relates to my expectations and goals.
21. The instructor does unusual or surprising things that are interesting.
22. The students actively participate in this class.

23. To accomplish my goals, it is important that I do well in this course.
24. The instructor uses an interesting variety of teaching techniques.
25. I do NOT think I will benefit much from this course.
26. I often daydream while in this class.
27. As I am taking this class, I believe that I can succeed if I try hard enough.
28. The personal benefits of this course are clear to me.
29. My curiosity is often stimulated by the questions asked or the problems given on the subject matter in this class.
30. I find the challenge level in this course to be about right: neither too easy not too hard.
31. I feel rather disappointed with this course.
32. I feel that I get enough recognition of my work in this course by means of grades, comments, or other feedback.
33. The amount of work I have to do is appropriate for this type of course.
34. I get enough feedback to know how well I am doing.

A2: Scoring Guide for the Course Interest Survey

Attention	Relevance	Confidence	Satisfaction
1	2	3	7 (reverse)
4 (reverse)	5	6 (reverse)	12
10	8 (reverse)	9	14
15	13	11 (reverse)	16
21	20	17 (reverse)	18
24	22	27	19
26 (reverse)	23	30	31 (reverse)
29	25 (reverse)	34	32
	28		33