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The mission of the ***Indonesian Research Journal in Education (IRJE)*** is to serve as a vital and international forum for a different group of scholars and researchers who are of interest in exchanging ideas in order to enrich the theory, policy, and practice of education in Indonesia and around the world and who can grasp a noteworthy voice in discussions and decision-making around issues of education. IRJE is a FREE, twice-yearly, open access, peer-reviewed, international, and e-journal, published in Indonesia, which accepts unpublished, high quality, and original research manuscripts in English, resulting primarily from quantitative, qualitative, and mixed research methodology related to or associated with education. All research articles appearing in IRJE have undergone a thoroughly peer-review.

Editorial Team

Focus and Scope

The Indonesian Research Journal in Education *(*IRJE) accepts unpublished, high quality, and original research manuscripts in English, resulting primarily from quantitative, qualitative, or mixed research methodology related to or associated with education. These issues include, but not limited to, practices, policies, and research in education from early childhood education to higher education which cover the areas of instruction, learning, teaching, curriculum development, educational policy, language education and policy, bilingual education, multicultural education, art education, teacher education, educational technology, educational developments, educational psychology, and international education in Indonesia and other parts of the world.

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Content

Editorial

The second volume of the Indonesian Research Journal in Education (IRJE) presents together five articles that look at numerous topics on education in Indonesia and other countries. The second volume starts with the article "**Indonesia's Active, Creative, Effective and Joyful Learning: From a University Teacher Training Program to High School Classrooms**" by **MICHAEL SEAN YOUNG,** a Professor of Education at Thomas University in Thomasville, Georgia, the U.S.A. His study asked how and to what extent professors were modeling and encouraging active-learning methods in the students' English and Education courses in response to decentralization reforms at the University of Banten, in Serang, Indonesia.

For the second article, **TAUFIK MULYADIN focuses on "Identity Development among Muslim Indonesian-American College Students: A Phenomenological Study."** His study was conducted to understand Muslim Indonesian-American college students' experiences of identity development from the perspectives of the reconceptualized model of multiple dimensions of identity (RMMDI). His study revealed that the salience of four identity dimensions for Muslim Indonesian-American students including religion, culture, social class, and gender. These identity dimensions were found to be impacted by varied contextual factors such as family, the 9/11, peer support, and college support.

Another thought-provoking article offered by **LENNY MARZULINA, NOVA LINGGA PITALOKA, HERIZAL, MUHAMAD HOLANDYAH, DIAN ERLINA, AND INDAH TRI LESTARI**, is entitled "**Looking at the Link between Parents' Educational Backgrounds and Students' English Achievement."** They investigated the link between parents' educational background and students' English achievement at one senior high school in Palembang, South Sumatra, Indonesia. The results of their study revealed that parents' educational background significantly correlated with the students' English achievement. Additionally, the results of the linear regression analysis indicated that there was a correlation between parents' educational background and students' English achievement. Although the contributions was small and there were other factors that contribute to the students' academic achievement, parents' educational background is important in supporting their children's English achievement.

The other interesting article "**Student-Centred Teaching Strategies by Gender, Grade Level, and Teacher's Self-Concept in Mexico" is authored by PEDRO SÁNCHEZ-ESCOBEDO AND ANA KAREN CAMELO LAVADORES.** Their sttudy examined the student-centred teaching strategies of Mexican teachers by gender, grade level, and self-concept as an instructor. A conventional sample of 573 teachers from diverse school settings in the state of Yucatan in Mexico responded to a paper and pencil questionnaire. Results indicated, in general, that teachers prioritized classroom management and independent learning activites, in constrast with teaching strategies emphasized by policies and teacher´s training programs in the country, such as cooperative learning, differentiation, or promoting critical thinking.

The last article for this issue, "**Measurement Model of Reasoning Skills among Science Students Based on Socio Scientific Issues (SSI)"** is written by **Dr. MOHD**

AFIFI BIN BAHURUDIN SETAMBAH. *He argues that t*he lack of reasoning skills has been recognized as one of the contributing factors to the declined achievement in the Trends in Mathematics and Science Studies (TIMSS) and Programme for International Student Assessment (PISA) assessments in Malaysia. His study focused the development of a measurement model of reasoning skills among science students based on SSI using the analysis of moment structure (AMOS) approach before going to second level to full structured equation modelling (SEM). A total of 450 respondents were selected using a stratified random sampling. Results showed a modified measurement model of reasoning skills consisting of the View Knowledge (VK) was as a main construct.

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IRJE Indonesian Research Journal in Education

Indonesia's Active, Creative, Effective and Joyful Learning: From a University Teacher Training Program to High School Classrooms

MICHAEL SEAN YOUNG [1]

Abstract

This study asked how and to what extent professors were modeling and encouraging active-learning methods in the students' English and Education courses in response to decentralization reforms at the University of Banten, in Serang, Indonesia. A discussion of the background of *PAKEM (pembelajaran aktif, kreatif, efektif dan menyenangkan)* policy and its implementation builds a framework for identifying and interpreting specific challenges which impact English teacher preparation and the knowledge and implementation of PAKEM Active Learning methods. PAKEM represents a major element of ongoing decentralization policy and was explored thematically through an ethnographic analysis of in-depth accounts of professors, teachers, and students at the campus over ten months. The discussion provides extensive and diverse evidence of dynamic responses to PAKEM policy changes. Lecturers were well informed about and engaged in the implementation of active learning methods in instruction. Findings are situated amongst similar case studies on the implementation of active learning pedagogies and consistencies are identified and discussed.

Keywords

PAKEM, Indonesia, university teacher training, high schools, decentralization

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Introduction

The Indonesian school system serves over 50 million students with about 2.6 million teachers in more than 250,000 schools**.** It is the fourth largest education system in the world (behind China, India, and the United States). The Ministry of National Education (MoNE) manages 84 percent of public and private schools and the Ministry of Religious Affairs (MoRA) 16 percent (The World Bank, 2009). Since the 1980's, and assertively in the new millennium, the MoNE and MoRA have encouraged the adoption of student-centered and active teaching and learning methods nationally, and these are officially proscribed in policy. The purpose of Teacher Law No. 14/2005 as to improve education quality by upgrading teacher qualifications and improving education quality is the second of three pillars in the Ministry of Education's strategic plan for 2005-2009. In addition to upgrading all teachers' qualifications to include a minimum bachelor's degree (S1) and passing the national certification exam, the utilization of active learning methods is viewed as a means of improving teaching quality.

Pembelajaran Aktif, Kreatif, Efektif dan Menyenangkan (PAKEM) or "Active, Creative, Effective and Joyful Learning," is the Indonesian conceptualization of actively engaged, student-centered teaching and learning. *Menyenangkan* can also be translated as "fun," "pleasurable," "nice," "agreeable," etc.…). PAKEM is used primarily in elementary (*Sekolah Dasar; SD*) schools, while the term "Contextual Teaching and Learning" (CTL) is often used at the junior secondary (*Sekolah Menengah Pertama; SMP*) and senior secondary (*Sekolah Menengah Atas; SMA*) school levels. The purpose of Active, Creative, Effective and Joyful Learning, and Contextual Teaching & Learning, is to improve the quality of teaching and learning in schools, and to make schooling more meaningful and enjoyable for teachers and students. By extension, it is hoped that this will result in greater student participation, especially at the junior and senior high school level, and fewer drop-outs.

The philosophical foundations of PAKEM and CTL run deeply throughout western pedagogical thought, most notably that of John Dewey, and also in the cultural and constitutional heritage of Indonesia, as well. Dewey's (1916) "Democracy and Education" and "Experience and Education" (1938) inspired progressive education and experiential education movements in the U.S. and around the world. Dewey's (1938) pragmatic or instrumentalist philosophy emphasized curriculum and methods that are relevant and meaningful to students' lives, that promote critical thinking and social interaction for solving real-life problems, and that model the school as a microcosmic democracy within a larger social and national democracy. Therefore, this democratic, student-centered paradigm opposes authoritarianism in the classroom as well as in society. Dewey (1938) also emphasized change, and the dialectic nature of life. When we learn, we gain knowledge and understanding that provides us with agency to control our lives, and to deal with today's and tomorrow's challenges. We need to be able to think and learn in this way; learning what we want to know and need to know, and thus we become intrinsically motivated learners. Finally, Dewey's (1938) theory of *continuity* proposed that each and every experience of an individual influences his or her perception and ability to learn and understand future experiences. Consequently, every experience, positive or negative, influences the understanding and effects of all future experiences for an individual. His theory of *interaction* explains how the continuity of our total experiences serve our perception and understanding

as we perpetually confront, and deal with a reality day after day. Students must be able to connect their learning— the curriculum and classroom activities—with their everyday lives. Dewey (1938) asserted that education wasn't preparation for life—it is life, and we all must re-create ourselves with each passing day and every passing moment. These philosophical and psychological underpinnings support the need for pedagogy of Active, Creative, Effective and Joyful Learning.

Among the Five Principles of the Pancasila, the national ideology, the third affirms the unity of Indonesia (*Persatuan Indonesia*) and strong sense of the nation as a family (*keluarga)* the fourth affirms the principle of democratic representation, and the fifth affirms the principle of social justice for all Indonesians. President Yudhoyono has strongly supported the conviction to uphold the ideals of pluralism and tolerance in this socially-conscientious, collective and inclusive Indonesian philosophy. Again, the pedagogical strengths of PAKEM and CTL methods for teaching and learning are consistent with the principles guiding the development of Indonesian citizens and society: promoting critical thinking skills, problem-solving, productivity, cooperation, inclusivity, active participation, and democracy. It is helpful to understand that the curriculum national standards for each subject are mandated and utilized in the production of textbooks and the development of syllabi, lesson plans and curriculum in all public and private elementary, junior and senior secondary schools. These are the standardized objectives that teachers are trying to accomplish for each subject and grade level. The national Competency-Based Curriculum (CBC,) *Kurrikulum Berbasis Kompetensi* (KBK) standards have been adapted and structured as the KTSP, or *Kurrikulum Tengkat* (Levels) *Satuan* (Units*) Pendidikan* (Education); thus, Curriculum Levels and Units for Education (CLUE) in order promote implementation which is consistent with PAKEM instructional methods. Ultimately, the attainment of the concepts and skills delineated in the CBC and KTSP standards are assessed with the National Examination, *Ujian Nasional*, for higher education and called *EPTANAS* at the elementary, junior and senior high school levels.

The purposes of the study were to provide background on the development of the PAKEM policy, to define and establish criteria for identifying characteristics of PAKEM and CTL, and to provide a concise rationale of how and why active learning is desirable. Next, to provide and analyze ethnographic data selected from a case study of a university teacher training program and senior high schools connected with the lecturers and students of the program. The following research questions guided this study: (1) Do lecturers understand PAKEM? (2) Was Active, Creative, Effective and Joyful teaching and learning occurring? How do we know this, and why was it, or was it not, occurring? And (3) What factors seem to be involved— i.e., teacher characteristics, education, and experience— that constrained or enabled active learning approaches? The answers to these questions, at this qualitative level, inform our planning and more broadly-based future research on the progress of PAKEM active learning approaches in teacher training programs and in schools. Finally, the findings of this case study can be situated with, and related to, similar efforts to develop and implement active learning approaches internationally, and consistent factors and patterns are apparent.

Literature Review

USAID's role in promoting PAKEM and CTL: The MBE and DBE programs

From February 2003 until June 2007, the Managing Basic Education (MBE) program of the USAID and RTI International Consultants worked in 23 districts in East and Central Java, Aceh and Jakarta, building capacity at district and school levels to manage basic education. The project worked to create models of good practice in basic education, including public and private elementary (SD) and some junior secondary schools (SMP) because this is the largest sector managed by local governments.

The most important objectives the MBE Program were first, developing and using models for the management of resources and education funding at the district level and second, improving and expanding School Based Management (SBM), Community Participation, and Active, Creative, Joyful and Effective Learning (PAKEM) at the school level. The MBE expected that working to promote SBM, PAKEM and Community Participation (PSM) would serve to stimulate other neighboring schools that wish to improve their quality of education using their own resources. The MBE worked to build models of good management practice in twenty schools, ten in each sub-district within a district, including primary and junior secondary schools, conventional and religious (SD, MI, SMP and MTs), state and private, in the areas of SBM, Community Participation and PAKEM and CTL.[1] The program intentionally worked to build up local government capacity to develop and adapt models, and to perpetuate the best use of these practices, with the purpose of building local ownership and ensuring sustainability. Activities generally included each of the groups of stakeholders, in order to develop a common vision, cooperative approaches and a well-informed group of stakeholders. It worked with a cross section of education stakeholders, including the democratic institutions, local parliament (*DPRD),* education council (*Dewan Pendidikan*), School Committees, Local government institutions: the local development agency (*Bappeda*), the education office (*Dinas Pendidikan*), ministry of religious affairs and the finance department; schools and local communities: school committees, parents, principals and teachers.

The MBE built an interpretation of the "Active, Creative, Joyful and Effective Learning" (PAKEM) program upon the Active Learning through Professional Support (ALPS, or CBSA in Bahasa Indonesia) program, which started in Cianjur in 1980 and ran until 1993 (MBE, 2005). The school cluster and teachers' working group systems, (*Peningkatan Kemampuan Guru*, PKG or KKG; and MGMP at the junior high school level) adopted throughout Indonesia, were also developed at this time to function as major supports for teachers in carrying out the objectives of SBM, PAKEM, and Community

[1] Acknowledgements: This MBE program was based on the SBM program developed by the Government of Indonesia, UNESCO and UNICEF, and used materials developed by that program. The funding of schools to support the SBM program follows the pattern developed by the DSSD program which was funded by the Asian Development Bank (ADB).

Participation. Principles the MBE established according to ALPS/CBSA for Active, Creative, Joyful and Effective Learning are (MBE, 2005): the children do more practical tasks (for example in science), including using the social and natural environments, the children use more teaching aids, libraries and library corners are set up and used, the children's work is written in their own words, children's work is displayed in class, teachers show more flexibility in organizing and grouping pupils' in their learning.

Decentralized basic education 2 (DBE2)

The main purpose of the USAID DBE2 program (in coordination with DBE1 and DBE3) is to provide the Government of Indonesia (GOI) with technical services and resources to improve the quality of teaching and learning in Indonesia's public and private elementary schools, with limited assistance to junior secondary schools. Monitoring and evaluation demonstrate the efforts of DBE2 have significantly improved the quality of teaching and learning in targeted schools, as well as strengthening In-Service Professional Development (USAID, 2008). In one component of DBE2, Florida State University, one of three U.S. universities partnering with a total of 14 Indonesian universities, carried out a project with 7 of them, connecting USAID staff, lecturers from the universities, principals and master teachers with elementary schools in their communities, and training them in PAKEM methods. Two lecturers from one of the university teams will be discussed in this report. Manuals, examples of teaching aids and other materials, appropriate for various school subjects like Math, Science, and Bahasa Indonesia were used in the trainings, as well as technology such as power-point presentations, cameras and recorders. There are manuals for a total of nine modules for the trainers and participants, including a general manual, or foundation package, "Introduction to Effective Learning in (PAKEM) Subject Matter (*Pengenalan Pembelajaran Efektif dalam Mata Pelajaran Pokok,* 2007) the subject-specific manuals, entitled "*Paduan Untuk Fasilitator*: What is Active Learning?" (2007). The texts are all in Indonesian language,

> "What is Active Learning" provides detailed definitions of each of the terms that make up the acronym, as well as characteristics of Active, Creative, Effective and Joyful Learning in action. The translated definitions themselves contain examples: With Active teaching and learning students "question, discuss, express ideas, discover, and seek information to build knowledge…" (2007).

With Creative teaching and learning "teachers promote a variety of approaches and activities and are able to create low-cost materials and teaching aids that facilitate understanding" and with Effective teaching and learning the "innovations in the learning process lead to optimum student achievement of the competencies in the curriculum, and increased knowledge, skills and abilities" With "Joyful teaching and learning the "atmosphere of learning is comfortable, without pressure… enjoying the process of learning, with freedom to try new things without fear of mistakes." Finally, PAKEM teaching and learning uses principles of contextual learning, cooperative learning, and the accommodation of diverse learning styles and gender (*Pengenalan Pembelajaran Efektif dalam Mata Pelajaran Pokok,* 2007).

A mentoring section of "What is Active Learning" describes what an observer would see in a class where PAKEM teaching and learning is taking place, or evidence of the process in action (*Pengenalan Pembelajaran Efektif dalam Mata Pelajaran Pokok,* 2007). These

include many of the characteristics mentioned thus far, and compiled in the following rubric "Criteria and Characteristics for Assessing PAKEM and CTL." Aspects of the classroom environment, such as displaying students' work (what work, what should not be displayed, how it can be beneficial, keeping it updated) and the idea of flexibility in seating arrangements, like with the clustering of desks for small group work, are discussed in detail. Establishing reading corners with shelves and books, their usage, and the use of teaching aids are described, and many photos of the materials are included in the manuals. Between 2003 and 2010, several provinces in Indonesia made great progress in the adaptation, implementation and effectiveness of School-Based Management (SBM,) PAKEM and Community Participation (PSM) for improving schools, due to support from the regional and district education offices. This had been achieved by making systemic changes concurrently with organizational cultural changes, commonly lead by dedicated and dynamic school principals. A clear understanding of the roles of all stakeholders was necessary, with the overall objective being to provide the maximum support possible for the teachers in the field, and thus the teaching and learning process. It was observed at that time that: In turn, strong SBM in schools is improving not only with leadership and allocation of resources, but also with the diffusion and enhancement of PAKEM (Rekdale, 2005).

Indonesia's PAKEM approach encourages learning how to learn, learning by discovery, creativity, and analytical and critical thinking. Methods of facilitating and stimulating these types of learning include having students engaged in individual, pair, group and class-wide learning activities, participation in individual and group projects, research, discussion, independent reading and study, creating journals and portfolios, as well as traditional methods such as lecture listening, note-taking, recitation, and textbook, workbook, and paper-based exercises. As the data from this study showed, it can be difficult and at times impractical to utilize PAKEM methods for instruction, depending upon the nature of the learning objectives, skills, and tasks undertaken. However, according to Indonesian policy (UNESCO, 2008), active learning methods should accompany and supersede traditional methods, when possible, integrated with the schools' curriculum, which is developed in synchronization with the national subject-area standards of the CBC/KTSP, and realized at the school-level in the syllabi and lesson plans designed by individual teachers.

Research and evaluations from the USAID and consultants have indicated the benefits of active learning methods for improving education quality (Cannon, 2005) and a component of the DBE2 project is currently researching the effects of active learning interventions and the practice of active learning in classrooms**.** It is appropriate to acknowledge that even these proposed characteristics for a "PAKEM Criteria" are culturally-biased and are open to discussion and consensus.

The DBE2 PAKEM teams

There were a total of eight teams from four provinces representing seven universities on the DBE2 project, who developed PAKEM modules, conducted training with elementary school teachers, and carried out action research on the progress of these teachers to incorporate PAKEM methods and resources in their instruction. In addition to the study, the DBE2 team research also provided feedback on the progress of the PAKEM training

modules and implementation of PAKEM methods in elementary schools. Two male lecturers, Tubagus and John, and one female were team members in Banten. At workshops held in March 2009, members from the eight teams reported the following issues related to the progress of the PAKEM training modules and implementation of PAKEM methods in elementary schools.

Methodology

The University of Banten College of Education[2] Teacher Training Program, or *Facultas Keguruan Ilmu Pendidikan* (FKIP) is the most common form of teacher education programs within a larger university offering diverse programs such as Law, Political & Social Science, Agriculture, and Engineering, among others. The majors within the FKIP Program include programs of study in Early Childhood, Math, Science-Biology, Indonesian and English Language (*Bahasa Inggris*) Education.

This ethnographic study employed individual and focus group interview sessions assembled with professors, lecturers and prospective teachers in this university, as well as administrators, and regional officials involved in the teaching of language arts. Participants of varying ages and experience with the language arts curriculum were invited to act voluntarily as members of the purposive sample, nine lecturers and twenty-five student-teachers at UB, for a total of 34 lecturers and student participants. Teachers at four senior high schools, three in the city of *Serang* in one in a rural part of the province, were also interviewed. Interviews conducted in English and partially in Indonesian (with the help of translators) lasted from 40 to 60 minutes each. The questions were thematic, open-ended, and sequenced with each participant responding in turn and listening to one another's responses in the focus groups.

Observations were primarily as a participant-observer in classes and campus activities. Field notes were fundamentally descriptive, including portraits of subjects, the reconstruction of dialogue, description of the physical setting, accounts of particular events, depiction of activities, and reflexive accounts of the researcher's thoughts and behaviors. Peer reviewers, participants themselves, were involved as partners in the study through the ongoing qualitative practice of member-checks to verify perspectives and accuracy of data collected.

The case study focused on six female and five male lecturers in the FKIP English Education program, the English and Education courses they teach, and the students enrolled in those courses. The lecturers and students were self-selected as volunteers, and had varying lengths of experience at the University of Banten. Students ranged from first year to fourth year and beyond. Data were collected through Primary Interviews, follow- up conversations, Classroom Participant-Observations, and Campus Activities Participant-Observations, from November 20, 2008 to August 19, 2009. Class visits were chosen and planned based upon availability and schedule coordination, an attempt to have a balanced number of visits per

[2] I will use "College of Education" or "Education Department," not to be confused with the national "Department of Education," or MONE. In Indonesian it is simply "FKIP," in English: "Faculty of Teacher Training in Education."

lecturer, and the likelihood of the courses contributing data relevant to the research questions. In the first months, all class visits were scheduled, but later many class visits were unscheduled. All interviews and classes were in English, except for the Introduction to Education (*Pengantar Pendidikan*) and Education Management (*Pengalaloan Pendidikan*) courses, which were taught entirely in Indonesian. A longitudinal continuation of this study is planned for 2018, to examine the progress of the PAKEM initiative.

Findings

State influence on teaching methods: Active learning (PAKEM)

Pembelajaran Aktif, Kreatif, Efektif dan Menyenangkan, (PAKEM) or "Active, Creative, Effective and Joyful Learning," is the Indonesian (MoNE) conceptualization of actively engaged, student-centered teaching and learning. PAKEM is used primarily in elementary (Sekolah Dasar; SD) schools, while the term "Contextual Teaching and Learning" (CTL) is often used at the junior secondary (Sekolah Menengah Pertama; SMP) and senior secondary (Sekolah Menengah Atas; SMA) school levels. The purpose of Active, Creative, Effective and Joyful Learning, and Contextual Teaching & Learning, is to improve the quality of teaching and learning in schools, and to make schooling more meaningful and enjoyable for teachers and students. By extension, it is hoped that this will result in greater student participation, especially at the junior and senior high school level, and fewer drop-outs.

Though I have presented a rubric for "Active Learning," the "Criteria and Characteristics for Assessing PAKEM and CTL" based upon trends in Indonesian education, I asked lecturers what their views are. For example, one question I asked was "Can you describe or further elaborate on what you mean by 'Active Learning,'" and "What kinds of methods and activities would this include?" I also asked (and observed) if the teaching behaviors and method were being modeled and discussed in classrooms. The lecturers and students at the UB FKIP showed implicit attitudes and offered explicit statements and descriptions that they feel teaching for "active, relevant, and engaged learning" could be accomplished while following a highly-structured national curriculum, resulting in greater student involvement, enjoyment, and achievement.

Use of discussion, media, research and extracurricular projects to engage students

While all lecturers agreed that teaching about and modeling active learning methods was important for their students, who would be expected to incorporate these methods in elementary and secondary schools, the extent of inclusion of active learning methods in all of the classes in this UB program was not clearly agreed upon. Several lecturers suggested that differences in the subject matter of courses strongly influenced the nature of integrating active learning methods for different FKIP English Education classes, and that the goal of maximizing active learning in these classes was not always feasible, desirable or appropriate. These lecturers explained that for some activities in courses like Reading and Writing, class time was allotted for individual student reading and writing. However, all lecturers and

students indicated that they thought the extent of incorporation of active learning methods was, and should be greater in the elementary, junior and senior high schools.

Interviews revealed that all of the lecturers had themselves studied in classes, from elementary school to their own teacher-training programs, with some teachers using active-learning methods. Tubagus and John described their own schooling and teacher training experiences, and also were trainers on an Active Learning elementary school teacher training project. I observed many of their classes and we participated in numerous campus activities together as well. At the University of Banten, especially in FKIP, principles of PAKEM and CTL are taught explicitly and modeled and experienced implicitly by many lecturers in diverse courses in the program of study. John's favorite classes to teach were Language Lab Management and Translation. Besides teaching the Language Lab course, in the interview he explained "I work with the English language lab, and with media software that promotes and encourages motivation, and gives support for teachers. In the language lab the students do listening and dictation…they practice translations…work in groups, collaboration with a variety of tasks…" During the course of the fall 2008 semester, "odd" or *ganjil,* and the spring, "even" or *ganap,* I observed in this lab management class and in addition to those activities described by John, he and students used Power-point presentations, overhead projectors, recorders, and the computers and materials in the language lab itself. Typically, there was always a good deal of question and answer, and group discussion. John graduated from Lampung University FKIP for English education, in Lampung Province, Sumatra, across the *Sunda* Strait to the west of Banten. He described the incorporation of active learning in his classes there,

John: "Since junior secondary my teachers have used active learning techniques, such as games, media, using theory to practice…That institution (Lampung University) encouraged us to use active learning techniques because the students get bored learning English so that's why we have to solve that problem by having more interesting ways of teaching and learning. Take for one example, at that time (his undergraduate study at Lampung) we learned how to operate a Language Laboratory in the subject of Language Lab and Management to teach English, so how we can combine software and hardware, and using media to encourage the students' motivation and can help the teacher to be more comfortable with English and the students….When we are trained at the university in this area, yes this applies especially at the junior and senior high levels…when we learn about theories we are trying to apply it in our actual teaching…"

Me: "So, in coming here to UB, have you tried to keep the same methods and teaching style that you were trained in?"

John: "Yeah, we do our best to teach our students, because the difference between secondary and university is the students, of course they are already quite mature enough, so that's why you have to treat them different…But the principles of teaching are the same; we have to teach them actively, in a way that is interesting and to enjoy…Let's say, at that time I was teaching listening or dictation, so I tried to provide or to make my class feel active, and that the students are really getting practice, not only learn about some theories without practical exercise… Well, in 2002 I taught first Dictation, and then also Language Laboratory, and Education

> Management, and Translation and English for Specific Purposes. I have also taught, let's see, Teacher Training Experience, that's what we call PPLK1…"

From the statement above, John emphasized his views that the lecturers in the UB FKIP must integrate active learning in the English Education courses there in order to model the methods for the students, so that they will understand active learning techniques and use them in their own teaching, at all levels. All of the lecturers shared the attitude that their students need to have teachers as role-models of the best teaching practices, including active learning, so that they will emulate these practices as teachers themselves. John continued to elaborate on the integration of technology and materials with active learning methods, he expressed,

John: "I worked with the English language lab, and with media software that promotes and encourages motivation, and gives support for teachers. In the language lab the students do listening and dictation…They practice translations and work in groups, with collaboration and with a variety of tasks…What is my favorite class to teach? I like to teach Language Laboratory Management, but actually my mastery is in translations…One of the principles is to work in groups and collaborative learning, and I try to provide them with a variety of tasks, and I try to guide them to have a source of texts of many varieties, so they have many sources…"

Me: "The class I visited was ESP, and you were using a laptop and projector, and a variety of media to teach the lesson…Yes…"

John and the other lecturers also repeatedly mentioned the importance of the language laboratory to the program. I visited the laboratory and it had functioning computers that were integrated with lessons that focused primarily on speaking and listening exercises.

I observed a lesson in which Tubagus had different cards with job descriptions written on them, for the "employers," and cards with personal and professional attributes on them, for the "job candidates." These cards were distributed amongst the students, and after a brief moment to prepare, the interviews commenced. This lesson clearly met several criteria presented in the "20 characteristics for assessing PAKEM and CTL." Many of the lessons in all nine lecturers' classes combined the use of games and puzzles linked with the learning objectives and the use of teaching aids, as with object lessons. This particular lesson links the practical tasks of interviewing and role playing, including using the students' social environment, with the Speaking course objectives of describing oneself, and one's qualifications for a job position. Regarding research on an active learning training project, which was still in progress at that time, Tubagus stated these observations based upon data collected at that point, he noticed,

> "Observing and interviewing both students and teachers in the Madrasah gives me a light that active learning, so far, has been considered as an ideal way in helping students learn and actively participate in the classroom. Discussion for example, has helped students to be more active under supervision from the teacher. Implementing active learning through various games and instructional media, to my observation, attracts many students to be more active and to learn better."

These statements underscore many of the positive characteristics attributed to PAKEM methods, and it also indicates that Tubagus believed the active learning modules and training had been helpful for teachers and students. Two major problems for teachers in the elementary schools he was studying were described by Tubagus next,

> "However, the biggest barrier so far, as many teachers in the Madarash said, is supporting teaching media and facilities. Some of them are well trained in active learning to be implemented but they still find the lack of media and facilities are quite disturbing. Another problem is related to students' "basic characters." Many of them are introverted (say, "shy") in the classroom. This condition hinders them to fully participate and aspire in their learning process within the classroom." A shortcoming is that the "shy students" find it difficult to cope with active learning more than "brave students" who "naturally like being active in the classroom."

These observations of Tubagus were confirmed by teachers that I visited in the senior secondary schools. A lack of resources and class materials are a hindrance for teachers implementing active learning, as others are the cultural norms of deference to authority and the reserved nature of some students. However, I observed many students who embraced and enjoyed participating actively in lessons at the UB FKIP and in the senior high schools. Many students I observed over the long course of the study were as ebullient and outgoing as I've seen anywhere. There is a likely possibility of the "Hawthorne Effect" taking place in class observations, as students will often "be on their best behavior," or sit still and be quiet, when a stranger is visiting a classroom. Yudi explained how the use of active learning in the UB English classes is intended not only as a means for effective teaching, but also as a model to be emulated by the students when they are teaching. He said,

> "I like teaching TOEFL and Learning and Planning ELT because of learning more about concepts of teaching, and how to relate concepts and practices…this is what I want to know…It gives students ideas on recent ideas and issues which students should know, or be familiar with…We try to integrate principles of active learning… We do not want our classes to be teacher-centered here…For example, we have students go to the internet and share with your friends, then highlight major points for discussion, and we try to select our own materials…For example, learning concepts but also producing, as in speaking and listening, if it's 60% to 70% passive, then we need to draw together to speak, to talk, and to encourage the students to produce language…"

Furthermore, Ayu related similar experiences in her teaching first at an Islamic elementary school in Semarang for grades four and five, she expressed,

> "It was nice explore how to make lesson, they moved around a lot…We sang a lot, and told stories…There was a separation of classes—boys and girls, and the stories would make them more calm. And they really liked the games and songs… like

> 'Keep baby brother, baby sister, Pa and Mom safe Allah…' A lot about the family, but all in English…"

Ayu also showed an integration of local culture with active learning as this song for her elementary school students is a popular traditional song for children in Indonesia. Ayu later taught English Speaking and Writing at a private university, and described how she enjoyed helping students to understand other cultures, especially American through learning English. She said,

> "I use these kinds of stories in my CCU course, also, when we talk about cultural backgrounds…And in my Introduction to Literature course. In my class for example, we will have a topic… I ask the students to use the internet or library for sources, and they do group presentations. In our group discussions I will let them choose themes, like the mosaic or cultural melting pot…And that many ethnicities together don't have to be mixed…Like 'Bhineka tunggal Ika'… 'Berbeda beda tapi tetapa satu saja'… 'different but one'… and the Garuda Pancasila is the national bird, the condor…They are not sculptures… They are human…Give them a chance to speak— This is not meditation class—so please speak up' I say… And being a friend is important…"

Additionally, Ayu consistently modeled these best practices of active learning and encouraging the affective domain in her teaching of Cross-Cultural Understanding and Literature and Poetry. In this description, she had also included elements of the state ideology of *Pancasila*, and of the idea of "Unity in Diversity." Ayu incorporated interactive and fun activities in most of her classes. In a Literature and Poetry, I observed, after analyzing poetic elements of Robert Burns and Emily Dickinson poems, such as rhythm, tone, stress, and metaphor, students were encouraged to give poems and songs in English that they liked, and which they would analyze in small groups. The lecturers and students at UB are very well-informed and engaged with active learning methods in their studies. Strategies for active learning in Indonesia presented in the rubric from chapter two were consistently integrated and modeled in English and education courses during the school year, and seemed to be the status quo. Students assumed personal responsibility for their assignments and were often eager according to their abilities in English, to participate in classroom activities. Lecturers and students encourage one another to "not to be shy" and to be self-directed and independent in responding to the challenges of course requirements like reading, writing, and participating in class discussions and activities.

The English student association (ESA) carnival and the English debate club (EDC)

The English Student Association (ESA) and The English Debate Club (EDC) are both very popular extracurricular groups for the UB students. Virtually, all students in the FKIP English teacher training program are members of the ESA. In some cases, non-English majors are in these groups and attend meetings and activities, especially in the case of the debate club. I asked John about his views of these groups and he responded,

Mike: "Is there, what are the best things you can say about the UB and the FKIP English programs here? Are there some kind of ratings nationally or awards that students have won? Like the EDC for example?"

John: "Well, the students are very active in extracurricular and intra-curricular activities, this is proved with several data that all of the budgets for the student activities are covered by the English Student Association and English student activities, and then, if we try to have a competition we have the most dynamic and valuable activities. Also, the EDC English Debating Club participated here local in Banten and national or even international, and is preparing the team for the national competition…sometimes they have won at the national level, so this is also shows and proves to us that the English Student Association and English Student Activities really are active at the level of national, and also at the level of this university…"

The English Student Association is a major extracurricular event coordinated mainly by the ESA student committee. All of the students take great pride in the event, which is held in the main auditorium and lasts all day. The lecturers were all present and participate as planned by the students. Several students from the committee serve as emcees, and the event is almost entirely in English. There is a good deal of language code-switching, and students sometimes speak back and forth from Indonesian to English to better express themselves. There were competitions and games of various kinds, in English, and skits, dance performances, songs, and poems read. The competitions match the various cohorts within the year, one through four, against one another and a champion is crowned at the end. Awards are also given for the most outstanding students. Yudi, as head of the English Education program welcomed all in the introduction and gave a closing speech. The event combines the accomplishments of the students' English studies with fun and comradery, and there was a great deal of noise and excitement throughout the day. This event and its activities demonstrated the self-directed motivation for learning by the ESA and debate club students and are substantial evidence of the "Attitude that learning can occur anywhere is encouraged; learning inside and outside of school is stressed" and that "Students are responsible for interacting with teachers and other students, for finding information, for assessing their own work, and for participating in planning their learning from the PAKEM rubric, and the students autonomously pursue their own mastery of English and debate skills independently in their own free time.

The remaining components of the PAKEM Characteristics, such as recognizing the importance of emotion in learning (the affective domain)—therefore teachers actively promote joy and pleasure in learning, a focusing on learning cooperatively with other students (and teamwork), greater flexibility in arranging learning and teaching facilities (rooms, desks, locations) and grouping pupils in their learning, accommodating diverse learning styles and diverse qualities of past experience, emphasis on activity (problem solving, discussion, inquiry) and higher-order thinking such as application, analysis, evaluation, and intrinsic motivation to learn through interest, curiosity, and responsibility (Cannon, 2005) were all observed in practice over the course of the study.

Sani, Defi, and Reza, and students in the University of Banten FKIP

Sani was a second-year student in the UB FKIP English program, and a leader of the English Debate Club. She and fellow students in the club extended their speaking and rhetorical skills, and were able to practice discussing educational issues in English in the development of debate proposals. She was also active as a coach of the *Serang* Senior High School debate team, and I attended practices and a major competition with them in Tangerang. She was actively involved beyond her own university classrooms and campus by sharing her English and debate skills with the high school student level, and modeling the most effective forensic strategies to win competitions.

Leading the UB debate club, with minimal interference from the lecturers, Sani showed incredible enthusiasm and commitment along with the other club members. Debate also falls in the thirteenth characteristics of PAKEM, and important endeavors (like Project-based Learning) including current issues (i.e., environmentalism, technology, and politics) is the eleventh; so active learning is taking place beyond the classrooms at UB as well. The topics pursued by the UB debate club and the senior high school debate club included all of these current issues and more, especially issues directly related to students. Sani was one of the best performing students in her fourth-year class at UB, and she took the initiative to lead and coach the debate club at Senior High School 1, with Aiyda as the club's sponsor. She is only one example of the self-motivation and conviction of the UB English Education students I encountered. I asked Sani about her knowledge and understanding of the CBC-KTSP and PAKEM active learning methods based on her experiences at UB, and which courses she felt helped her most as far as incorporating PAKEM active learning methods, and she expressed,

Mike: "Sani, you said Speaking, Pronunciation, and Structure were courses that helped you most? Why is that?"

Sani: "I would say why I chose these courses first is just because the lecturers. In the Speaking class, as a new student, I needed time to adapt with the new environment, which is totally different from senior high school. This kind of transition is pretty hard. But, I thought that the lecturer was successful. He encouraged me to be brave; to speak my thoughts and my mind. The lecturer started from simple things like daily questions that he always asked before starting the material, like 'How was your day?' 'How was the holiday?' Or 'What did you do last night?' I admitted that the first time that we had this class, only a few people were brave to speak in front of the class, because maybe they're not used to it. It's only about three or four students who are brave to come in front of the class. As the time goes by on the second and third semester, there were more students who made positive progress in terms of speaking. Well, I think this is the rule of the lecturer to encourage the students through the very simple things and talking."

English teachers I interviewed and observed at five senior high schools, all were familiar with the national CBC standards for their English classes, and I observed the integration of the skills identified in these standards in their classes. In one case I observed a graduate of the UB FKIP English program, Aiyda, at senior high School integrating PAKEM active learning methods with the CBC standards with students happily and playfully using critical thinking

skills to compose comprehensible sentences out of a collection of words and phrases. Aiyda said that she thought the UB FKIP English program was an excellent teacher training experience for her, because "At that time both the English program and the university were new, and the lecturers were very great professional educators, and had very many experiences to share. I really liked studying at UB. I liked Shafira's classes, and I got very good grades. I liked songs and movies in English, and dance and theatre. I want to meet 'Hanson' and speak to them in English! Do you know 'Mmm Bop?" I said, "Of course," and we laughed. Aiyda was in her mid-twenties, had an ebullient demeanor, and was excellent in speaking English. She also had attended this SMA 1 for senior high school. I discovered after visiting her classes she also had a highly competent understanding of English grammar and the logical sequencing of sentences in narrative composition, as was demonstrated in a lesson that featured many of the PAKEM characteristics. Aiyda's lesson plans for the classes I observed were detailed, organized, and engaging. I asked Aiyda about the development of the curriculum for the English courses, and she explained,

> "There are two senior English teachers who work together with the MGMP school curriculum committee, which is like an association of teachers for each subject area, and they follow the CBC-KTSP curriculum to determine the syllabus for each grade level. We apply and develop in lessons plans that we make for each class based on the syllabus, which is based on the standards from the two senior English teachers on the curriculum team."

I replied that this process seemed very similar to our curriculum development and instruction in the U.S. Aiyda further elaborated that she understood "KTSP" stands for "*Kurikulum Tengkat Satuan Pendidikan*," or structuring of skills and competencies for instruction of national CBC standards. She further thought the purpose of the KTSP in the following,

> "So that students can enjoy the subjects more, and be more active… So they can develop themselves in skills and knowledge spontaneously, and fluently. The lesson plans and activities are different for different skills. It depends, if you want to teach Speaking, we have conversational role-play and dialogue. In general, I try to ask students to speak English as much as they can, even simple words like 'Hello.' In Grammar or studying text, or how they can read and understand the text, for example, we use description, giving instructions, and procedural text, like the process of how to follow steps… You know about the debate team—we use debate in the classroom, too. They work in teams and do 'pros' and 'cons' and deliver it to the class…Sometimes I want to make new creations and games"

Based on Aiyda's statements regarding the CBC-KTSP curriculum standards to the syllabi, lesson plans, instruction. She had similar views with the lecturers at UB, in that ultimately in the classroom the standards, objectives, concepts and skills influence the types of activities the teacher uses to engage the students with the material. I noticed that overall, more students in the high schools were not as proficient in English as those in the UB FKIP English program, meanwhile, their enthusiasm and strongly-positive attitudes toward their school work was the same. I met some students, especially three students at SMA 1, getting

involved in the high school's English debate team, and were very fluent in English. I accompanied these students, along with their coach, Sani, to a province-wide English competition held by SMA 1 Tangerang, and the students excelled in the English debate competition. They affirmed that active engagement with language learning was essential. In Aiyda's classes, as with teachers at the other senior high schools, the English teachers were very fluent in English and demonstrated active learning methods in the implementation the CBC-KTSP curriculum standards in their lessons.

Discussion

Active learning and student-centered approaches have been increasingly embraced internationally since the Progressive era, culminating in the Education for All (EFA) World Conference on Education endorsed by the UNDP, UNESCO, UNICEF, and the World Bank in Jomtien, Thailand, 1990. Indonesia is one of many countries incorporating active learning methods for instruction in an effort to improve learning outcomes, and the approaches vary according to unique contexts such as former and developing educational policy, sociocultural factors, resources and external support and existing teacher training. The data analysis and findings for this study showed remarkable parallels to similar efforts to implement active learning methods in other countries. Ginsburg (2010) identified four major areas or themes prevalent from studies in Cambodia, Egypt, Jordan, Kyrgyzstan, and Malawi: (1) reform documents and active-learning pedagogies, (2) professional development initiatives and active learning pedagogies, (3) teachers' understandings and behaviors related to active-learning pedagogies, and (4) factors that constrain/enable implementation of active-learning pedagogies.

These same four themes identified by Ginsberg (2010) became apparent inductively for this study with some variations, and these consistencies and variations are discussed in the following findings and conclusion. Though these countries and Indonesia have unique historical, cultural and political contexts regarding education, involvement from the federal level, and international influences reveal many similar trends in adapting active learning pedagogies. It is important to consider that factors within the four areas are interconnected. Analysis of data obtained and experienced from this study showed repeated and authentic evidence of the Indonesian acronym PAKEM "Active, Creative, Effective and Joyful Learning," and actively-engaged, student-centered teaching and learning. Fieldwork and interviews indicate the university lecturers, teachers and student-teachers observed and interviewed in Banten Province consistently approach the integration of active learning in teaching practice with high levels of enthusiasm, thoughtfulness and competence. The following findings are linked with the four overlapping areas discussed by Ginsburg (2010), along with strengths, challenges and implications for PAKEM in Indonesia.

Reform documents and active-learning pedagogies

Studies of policy development and implementation of active learning pedagogies invariably include extensive background research, literature and government documents pertaining to the development of education policies preceding current active learning reforms. Common purposes for this are to provide historical and cultural contexts of

teaching methods in a country or region, to define just what "active learning methods" means for those contexts, and to provide an official rationale for implementing these policy and teaching reforms. This case discussed the evolution of Indonesia's national policies PAKEM and CTL, and national and international resources such as manuals and modules provided in teacher training, including the 20 characteristics for assessing PAKEM and CTL" compiled by Cannon (2005) the MBE/DBE, and myself.

The background research for Indonesia shows active learning pedagogies gaining attention and building toward a series of policy development and implementation during the 1990's and into the new millennium. The explicit description of the meaning and reasons for active learning methods (in the "20 Characteristics for PAKEM" Chart), and their observed interpretation, reflect both the cognitive and behavioral dimensions of teaching and learning. The rationales for active learning in Indonesian education emphasize improved learning outcomes (ostensibly measured by scores on national standardized tests and other less-tangible means,) increased critical thinking skills as citizens and workers, and the practical purpose of retaining students in school and encouraging progress from grade to grade. Elements of these rationales are evident in comparison with the five countries in Ginsburg's study, including the purpose of nurturing problem-solving skills and dispositions favorable for participating in the global economy as in Cambodia and Jordan (2010).

Professional development initiatives and active learning pedagogies

As with all five cases from the Ginsburg's (2010) study, government and international initiatives supported the professional development of trainers and teachers for understanding and implementing active learning pedagogy and methods in Indonesia. Workshops, conferences and related activities, as well as the inclusion of active learning in the teacher training curriculum were approaches designed to disseminate and sustain the methods across the Province of Banten. Emphasis was placed on fundamentally understanding and planning of A.L. methods in instruction. The lecturers and students in the FKIP program and teachers in secondary schools agreed that the school year, semesters, units and lessons must be well-planned and coordinated with PAKEM methods and materials integrated with instruction. Since planning also applies for the classroom environment and materials, it was agreed that training should include emphases on the importance and careful performance of comprehensive planning and implementation. During my study, John and Tubagus were conducting USAID-supported research on the integration of Active Learning in public and private elementary schools in Banten, and Rizal and Yudi had previously done studies on active learning for English education in Banten. Shafira and Arsi had been actively involved with the MGMP Teacher's Association, meeting and working together with English teachers in Banten to discuss and improve the teaching and learning process. The lecturers used their own research as examples in the English teacher training program at UB, encouraging students to pursue their own research projects in the form of the undergraduate thesis. Lecturers and students from the UB FKIP department also actively participated in nationally and provincially sponsored workshops on active learning methods, at times working together with elementary and secondary teachers (Shafira and Arsi) and John and Tubagus with the action research project assessing and promoting the use of active learning methods in Banten.

The findings and implications are largely consistent with some major points of the analysis of teacher training in Indonesia, part B (Evans et al., 2009). For example, Point 9: Build upon the DBE successes in school and district management, student centered methods and materials, and Junior Secondary and life-skill training, Points 10-12, deals with coordination between DBE, provincial and district governments, education institutions specifically teacher training colleges, and KKG's, MGMP's, MKK's, PGPT's, and DBE CRC's), and point 13: "Work at the provincial level to establish a "Center for Effective Schools" either at a university or LPMP."

The breadth and depth of PAKEM dissemination, as well as its sustainability, can be improved with the collaboration of all possible stakeholders. Furthermore, these collaborating partners can continue to reach out within provinces to train increasing numbers of teachers and to provide resources and materials. As for training and practice effective PAKEM instruction requires that teachers have support from school leaders in a context of SBM, communities of practice, and constructive school cultures. Many teachers said they would like more and more thorough training and practice. The Cluster Resource Centers, KKG and MGMP teacher groups and "Master" or "Lead" teachers can be utilized to improve PAKEM methods and to sustain them independently. These recommendations are all consistent with the emphasis on capacity-building for diffusion and sustaining of professional development programs found in Ginsburg's (2010) case study.

Teachers' understandings and behaviors related to active-learning pedagogies

Participants described how their families influenced their pursuit of teaching, as many lecturers and some students have relatives who are also teachers. Many lecturers, teachers and student-teachers stated that they themselves had been taught with active-learning methods at the elementary, junior, and senior high school levels. They also reported that these teachers were the "best" and "favorite." Thus, PAKEM methods are not entirely new for many teachers. We found that trainers need to get to "know" PAKEM teachers' own experiences, build upon them, and identify and involve accomplished teachers in the training. This strategy also embodies and serves as a rationale for utilization of PAKEM methods: students and teachers enjoy learning more. The essential enjoyment of learning was not noted as a rationale for active learning methods in the Ginsburg's (2010) cases, whereas likely is a prevalent rationale in these countries as well.

Lecturers, teachers, and students shared university and secondary experiences involving both traditional and active learning teaching methods, and described their own teacher training experiences (many at the University of Lampung, nearby Sumatra) involving the use of active learning methods. They also explained how and why they believed active learning methods can be more effective for engaging students and increasing the relevance of course material, as demonstrated by the data presented here, and how PAKEM strategies are easier to integrate with instruction in some courses as opposed to others, depending on the subject matter and objectives. This relates to constraining factors as well. I also observed the implicit and explicit modeling of active learning instruction in classrooms and in activities around the UB campus, including the use of discussion, media and technology, research, and extracurricular activities to engage students. Lecturers incorporated many active learning approaches in their instruction, such as utilizing group work in and out of the class, role

playing, interviewing, debating, cooperative learning, flexibility in arranging learning and teaching facilities, and showing care and concerning for the students' success, as my data here has shown.

Lecturers and students also participated in workshops on active learning methods, at times working together with elementary and secondary teachers (Shafira and Arsi) and as mentioned by several lecturers including John and Tubagus, working on an action research project assessing and promoting the use of active learning methods in the province of Banten supported by USAID. This involvement deepened their understandings and teaching of active learning. The lecturers, students and teachers all shared the opinion that active learning strategies, together with clearly-structured learning objectives and planning, can help to promote retention and progress of students, and encourage interest in learning and better achievement. All five countries in Ginsburg's (2010) case study analysis reported progress in understandings and implementation behaviors of varying aspects of active learning, as with this case study, was not surprising considering the substantial guidance and resources supporting the instructional reforms from the national and international levels.

Factors that constrain and enable implementation of active-learning pedagogies

Lecturers, teachers and students expressed that understanding and using Active Learning methods is complex, and teachers must actively guide and facilitate PAKEM instruction. They emphasized, for example, that simply clustering desks and using group presentations do not constitute effective PAKEM teaching, and that unguided, poorly planned active learning can create distractions from learning. This should be clarified for teachers and school leaders in training. Some veteran, civil-service teacher level are resistant to changing their traditional ways of teaching and adopting PAKEM methods, and we agreed that school leaders and teacher colleagues can demonstrate the benefits of PAKEM for their colleagues. Elements of PAKEM methods could be included in performance standards, if desired, employed from a national or provincial level, while this might include incentives as well. Consideration of the CBC-KTSP standards on national tests, along with a lack of classroom resources and incentives was frequently voiced as challenges to integrating active learning methods. I found that integration of PAKEM methods will vary for different subjects, such as Math, Science, Civics and Language Arts, and within skill areas of subjects, for example with Speaking-Listening, Grammar, Reading and Writing in Language Arts. Thus it is unrealistic to expect every lesson of every course to be taught strictly as "active-learning." PAKEM methods should be integrated in a holistic manner with the planning of an entire semester. Teachers need to collaborate and mutually support each other. Teachers need to be creative in the development of methods and materials; to create, access and utilize various resources, including technology and their teaching colleagues. Thus, PAKEM training should also include guidance to overcome obstacles to resources, materials and teaching aids, and teachers should work together to assess what is provided and what more could be provided in terms of books, materials, activities and websites.

"Civil service culture" or "institutional culture" (Bjork, 2005, 2006) comes from being a civil-service teacher level, which is achieved with experience, a portfolio, and by passing a civil service exam. It may be considered a form of tenure, and once attained,

according to Bjork's (2005, 2006) study, complying with formal daily routines is the highest priority, and teaching and learning a much lower priority. There are multiple perspectives from which to examine this phenomenon. One prominent perspective that the over-reaching structure of the education system, historically, strongly reinforces authority roles and loyalty and compliance from all actors, students, teachers, and administrators alike, within the hierarchy. These relationships seem authoritarian and even possibly un-democratic and anti-autonomous. An alternative explanation of this is that, if actors are customarily loyal and compliant, they will do what is expected and increase their own knowledge, qualifications and credentials, and will integrate the educational standards with effective active learning teaching methods. Bjork (2005) contends this culture affects public junior high school teachers in East Java who were generally indifferent to the quality of instruction and actual learning. Public senior high school teachers that I interviewed and observed, in the subjects of English and Local Content Curriculum (LCC), did not seem so adversely affected by civil service culture. These teachers I worked with as participant-observer prepared and implemented quality lessons, and showed a commitment to student learning while also adhering to the formal protocols of school relationships. My observations in FKIP teacher training courses at UB showed that contemporary school management structures promote parental and community involvement; during visits and observations at high schools I witnessed parents in the administration offices meeting with teachers. While in this case study, the interests of students, parents and the community are more strongly considered in relation to national influences than Bjork's model suggests, there is ubiquitous variation in schools across Indonesia and surely an ongoing need for improvement.

Conclusion: State and international influence and active learning teaching

Active Learning pedagogies, combined with more traditional teaching approaches, are widely recognized for improving learning outcomes internationally. PAKEM active learning methods have been integrated for instruction in Indonesian schools to increase student attendance, involvement, interest, and achievement. I witnessed many elementary and secondary teachers, beyond the scope of the case of lecturers and students in the FKIP at UB, who were developing and using active learning methods for instruction, as identified in in the appendix table I have provided and developed. In addition to making learning more relevant to students' lives and school more enjoyable, these diverse approaches, in addition to traditional lecturing, recitation, and bookwork, are intended to more effectively help teachers and students meet the national standards of the CBC-KTSP.

I observed the implicit and explicit modeling of active learning instruction in classrooms and in activities around the UB campus and in secondary schools in Banten province, including the use of discussion, media and technology, research and extracurricular activities to engage students. Lecturers incorporated many other elements of the "20 characteristics for assessing PAKEM and CTL" in their instruction, such as utilizing group work in and out of the class, role playing, interviewing, debate, cooperative learning, flexibility in arranging learning and teaching facilities, providing students with helpful feedback, and accommodating diverse learning styles and diverse qualities of past experience and generally caring about the students in regard to the affective domain. John and Tubagus were involved with research on active learning methods in Banten as part of a USAID

Decentralized Basic Education (DBE2) project, which may explain their thorough understanding of the PAKEM initiative. All of the lecturers shared the attitude that their students need to have teachers as role-models of the best teaching practices, including active learning, so that they will emulate these practices as teachers themselves.

A primary finding of this study was that PAKEM methods were well-understood and utilized by lecturers in this university FKIP case, and teachers in SMA public high schools in the city. An implication of this is that university, particularly, FKIP, and all higher learning institution professors and lecturers, as well as "Master" or "Lead" teachers in provinces and cities of Indonesia should be involved with, and leaders of, the in-service professional training of existing teachers. It became apparent in the study that positive teacher characteristics, and personality traits such as enthusiasm, empathy, caring, and being ethical, as described in the Indonesian Teacher Law (2005), and essential conduct such as consistent attendance and involvement with students are necessary for successful PAKEM instruction and quality teaching in general. Teachers' earlier experiences as students, through college teacher training showed a strong influence on their understanding and implementation of new teaching approaches.

Teaching traditionally has been widely viewed as a high status profession in Indonesia (Geertz, 1960). Lecturers, teachers and students were generally very sociable, genial and cooperative. Code switching between languages was very common in English-taught classes and around the campuses. Lecturers and students consistently showed respectful and supportive attitudes toward one another, and this group-centered social dynamic has been described as "Asian communitarianism" in the work of Tan and Ng (2007). Asian communitarianism can be learned from Huat (2004) and Rawls (1971, 1993).

PAKEM teaching reinforces characteristics of best-teaching practices, from planning to assessment and feedback. Elements of the affective domain, such as socialization and cooperation are enhanced with PAKEM methods, as are the promotion of creativity, critical thinking, and problem solving. PAKEM also stresses the accommodation of diverse learning styles and experiences. PAKEM, "Contextual Teaching and Learning" (CTL) and active learning in general, by various names like "discovery" or "experiential" learning, are synonymous with good teaching. While traditional methods such as lecture, worksheets and workbooks, memorization, drills, and solitary work at reading and writing can be useful approaches for learning. Teachers' education and experience with PAKEM, and use of planning, lesson plans, and materials, together with students', lecturers', teachers' and leaders' expectations, commitments, and collaboration will contribute to improved utilization of active learning in Indonesian classrooms.

The lecturers, students and teachers all shared the conviction, in concert with the national education policy development; active learning strategies, combined with clearly-structured learning objectives, can help to keep students in school and progressing from grade to grade, and promote engaged interest in learning and better achievement. It is ironic that the mandating of PAKEM active learning methods by the national government reflects the state's ongoing influence on educational practice, and simultaneously devolves greater autonomy to schools and teachers in the implementation of these methods. Active learning methods are meant to be fundamentally democratic in nature, encouraging participation, and representing the core rationale and purposes of decentralization reforms. For these lecturers, teachers and students, PAKEM was viewed as an advantageous means

for improving schooling and learning outcomes. International and national level resources have helped to support the diffusion of the PAKEM educational reforms, together with enthusiasm and cooperation among many lecturers, teachers and students. However, as identified by Ginsburg (2010) in multiple countries, the challenges of national standards and high-stakes tests, limited resources and teaching conditions, and a dearth of incentives all pose challenges to the effective implementation of Active Learning teaching methods in schools.

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Biographical note

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Acronyms and abbreviations

IKIP- Institute Keguruan Ilmu Pendidikan. Teacher Training University. The title IKIP is no longer used; i.e., University of Pendidikan Indonesia, Bandung (UPI).

FKIP- Fakultas Keguruan Ilmu Pendidikan. Faculty, or College, of Teacher Education.
PGSMTP- Teacher training college for junior secondary school teachers (*Pendidikan Guru Sekolah Menengah Tingkat Pertama*) currently being phased out.

PGSLTA- Teacher training college for senior secondary school teachers (*Pendidikan Guru Sekolah Menengah Tingkat Pertama*) currently being phased out.

STKIP- School of Higher Learning of Teacher Education (*Sekolah Tinggi Keguruan dan Ilmu*). Often extensions or satellites of IKIP programs in teacher training universities.

	20 Characteristics for Assessing PAKEM and CTL
1	Students are responsible for interacting with teachers and other students, for finding information, for assessing their own work and for participating in planning their learning.
2	Emphasis on activity (problem solving, discussion, inquiry) and higher-order thinking such as application, analysis, evaluation.
3	Intrinsic motivation to learn through interest, curiosity, and responsibility
4	Recognizes the importance of emotion in learning (the affective domain)—therefore teachers actively promote joy and pleasure in learning.
5	Focus on learning cooperatively with other students (and teamwork)
6	Attitude that learning can occur anywhere is encouraged; learning inside and outside of school is stressed.
7	Greater flexibility in arranging learning and teaching facilities (rooms, desks, locations) and grouping pupils' in their learning
8	Greater emphasis on a long-term perspective: emphasis on lifelong learning and learning how to learn to face future challenges and changes.
9	Assessment of learning (tests and examinations) used to provide students with feedback to help them learn (Cannon, 2005).
10	Accommodating diverse learning styles and diverse qualities of past experience.
11	Important endeavors (Like "Project-based Learning") including Current Issues (i.e., environmentalism, technology, politics)
12	Service Learning (social causes like helping less-fortunate people)
13	Debate, Creative Writing, Poetry, Music, Journals, Portfolios, Art.
14	Games and puzzles linked with learning objectives
15	Students use more teaching aids; Object lessons
16	Practical tasks, including using the social and natural environments
17	Libraries and library corners are set up and used
18	Student's work is written in their own words
19	Student's work is displayed in class
20	Interview and Role playing

Nos. 1-9 from "Student-centered, active learning" (Cannon, 2005). 10-20 from MBE, DBE, and myself.

IRJE Indonesian Research Journal in Education

Identity Development among Muslim Indonesian-American College Students: A Phenomenological Study

TAUFIK MULYADIN [1]

Abstract

This study was conducted to understand Muslim Indonesian-American college students' experiences of identity development from the perspectives of the reconceptualized model of multiple dimensions of identity (RMMDI) proposed by Abes, Jones, and McEwen (2007). Through purposeful sampling, six participants were selected for participation in this study. This study was qualitative in nature by using the phenomenological approach to capture the essence of how Muslim Indonesian-American college students experienced, processed, and interpreted their identity development in college. Questionnaire and interviews were utilized for data collection. The collected data were analyzed using the analysis procedures proposed by Moustakas (1994) including *epoche*, phenomenological reduction, imaginative variation, and the synthesis of structural/textural descriptions. The study revealed that the salience of four identity dimensions for Muslim Indonesian-American students including religion, culture, social class, and gender. These identity dimensions were found to be impacted by varied contextual factors such as family, the 9/11, peer support, and college support.

Keywords

Identity development, Indonesian, Muslim-Americans, phenomenology

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Introduction

In the late 1930s, the American Council on Education instructed the entire higher education institutions in the United States to enlist individual and professional development as an essential goal to be achieved for their educational practices (Evans, Forney, & Guido, 1998). Due to its significance, an understanding on student development in post-secondary education has been widely used as a basis for policy-making in college. Student development greatly varies in terms of its focuses and one among them is identity development. For decades, research on identity development with different groups of students has grown rapidly and addressed a variety of identity dimensions including, race, gender, socioeconomic status, ethnicity, and religion (Evans, Forney, Guido, Patton, & Renn, 2010).

There are different models of identity development which have been revealed to explain a wide range of college student groups from diverse backgrounds including not only majority, such as white students (Helms, 1990), but also minority groups, such as women (Josselson, 1973, 1996), black or color (Cross, 1991, 1995; Helms, 1990, 1995; Horse, 2001; Kim, 1981, 2011), multiracial (Kerwin & Ponterotto, 1994; Poston, 1990; Root, 1990), and LGBT (Cass, 1984; D'Augelli, 1994; McCam & Fassinger, 1996) students. The presence of these models provides a conceptual and empirical framework for better understanding underrepresented students in college. Moreover, the models of identity development can serve as a guide to institutions, administrators, staff, faculty, and other agents in college to provide necessary supports and assistances with the aim of enhancing student success of marginalized groups in terms of academic, personal, and professional attainment (Jones & McEwen, 2000).

The population of Muslim-American people is estimated to be more than 2.7 million with the annual growth rate of about 6% and they constitute around 1% of the total population in the United States (Pew Research Center, 2011). Based on the shared aspects of interest, beliefs, national origin, as well as culture and tradition, immigrants from Middle East and non-Arabic speaking Asian countries, including Indonesia, mostly represent the largest Muslim-American communities (Pipes & Duran, 2002). An increase of the Muslim population in the United States results a growing number of Muslim-American young adults entering post-secondary education. However, they are frequently misunderstood and have become increasingly scrutinized as well as prejudices since the horrible event of 9/11 and other following terrorist attacks acted by Muslim persons (Britto & Amer, 2007; Cole & Ahmadi, 2003; Peek, 2005; Sirin, Bikmen, Mir, Fine, Zaal, & Katsiaficas, 2008; Williams & Vashi, 2007). An insufficient understanding of this group of students has hindered institutions and their agents from identifying their needs and providing necessary supports for enhancing their experiences and development during in college (Britto & Amer, 2007; Cole & Ahmadi, 2003; Peek, 2005; Sirin, Bikmen, Mir, Fine, Zaal, & Katsiaficas, 2008; Williams & Vashi, 2007).

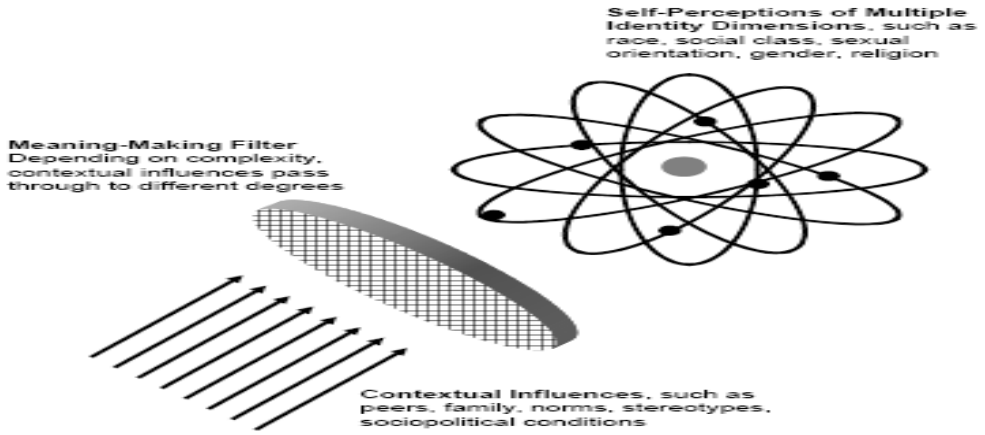
Since the number of Muslim-American college students keeps growing, there has been an increasing interest of practitioners and scholars to seek a better understanding of identity development of Muslim-American college students (Britto & Amer, 2007). However, most of existing research studies on Muslim-American students in college focused more on Middle Eastern descent students (e.g., Britto & Amer, 2007; Cole & Ahmadi, 2003) and a limited number of identity dimensions (e.g., Barazangi, 1989; Bartkowski & Read 2003;

Haddad, 2004; Hermansen, 2000; Khan, 2000; Marshall & Read, 2003; Peek, 2005; Read, 2003). It is hardly to find research which examines more comprehensive dimensions of identity and involves Muslim student groups with non-Middle Eastern descents, particularly Indonesia. This subgroup of Muslim-American students is frequently marginalized and even has been subject to exclusion from the largest group to which they belong (Sirin et al., 2008; Smith, 1999). Due to the gap in literature and the necessity to enhance their development during in college, this study utilizing the phenomenological approach aimed to explore Muslin Indonesian-American college students' experiences and their identity formation. According to Jones and McEwen (2000), the varied salience of distinct identity dimensions is mostly determined by contextual factors which intensely shape the identity formation of an individual. Therefore, this study deployed the Reconceptualized Model of Multiple Dimensions of Identity (RMMDI) proposed by Abes, Jones, and McEwen (2007) as a lens in understanding experiences and identity formation shared by Muslim Indonesian-American college students. The following research questions guided this study: (1) What are the lived experiences of Muslim Indonesian-American college students regarding their identity development in college? and (2) What are salient identities to Muslim Indonesian-American college students?

Theoretical Framework

Building upon the previously developed model (Jones & McEwen, 2002), Abes, Jones, and McEwen (2007) proposed the Reconceptualized Model of Multiple Dimensions of Identity (RMMDI). They asserted that the previous model limitedly focuses on identity component without the inclusion of cognitive and interpersonal components which are needed to gain comprehensive understanding of identity development and the relationship of multiple identities. To address this drawback, they improved the model by incorporating the process of meaning making as an individual capability of filtering contextual influences that shape the formation of his or her personal and social identity. The newer model is later known as RMMDI in Figure 1.

Figure 1. *Reconceptualized model of multiple dimensions of identity (RMMDI)*



Abes et al. (2007) asserted that the salience of identity dimensions heavily relies on contextual factors including family, historical background, cultural traditions, norms, and sociopolitical conditions. Hence, to have a better understanding of the identity formation of any individual or group students in college, it should include personal attributes and traits, socio-cultural conditions, family backgrounds, life planning, current experiences, and career decisions (Jones & McEwen, 2000). The existing literature revealed that identity development of Muslim -American college students is influenced by their social and political conditions, hostility, experiences of discrimination, friends, family, and community (Britto & Amer, 2007; Cole & Ahmadi, 2003; Peek, 2005; Sirin et al., 2008; Williams & Vashi, 2007). Given the intersecting identity dimensions and their environment, understanding how Muslim Indonesian-American college students experience their identity formation is best achieved by inclusion of contextual factors.

Literature Review

Muslim-Americans and identity development

Muslim Americans in general fall into three different categories. The first category is Americans who convert into Islam. This group is largely constituted by African-Americans and remnants of the Nation of Islam, a political and religious movement founded in the United States in 1930 by Wallace D. Fard Muhammad with its key figures such as Elijah Muhammad and Malcolm X (Smith, 1990). The second category is immigrants who came to the United States seeking better lives and opportunity as well as taking benefit from the more open immigration regulation enacted in 1965 (Smith, 1990). The last category is immigrants' children and many of them are young adults going to high schools and college (Pipes & Duran, 2002; Smith, 1999). They are generally considered as first generation of Muslim-Americans who grew up or were born in the United States. This study focused more on the last group, Muslim Indonesian-American young adults who ever went or are currently in college.

It estimates that there are around seven million Muslim-Americans or constitute about 1% of the total population in the United States (Pew Research Center, 2011). This number is as large as the Hispanic population few decades ago. With the annual growth of about 6%, Muslim-Americans are considered a fast growing population compared to less than 1% for the annual growth of the entire population in the United States (Pew Research Center, 2011). Only one third of Muslim-Americans were born in the United States. From those who were born in other countries, more than 20% are of Arab decent, less than 10% from Iran, 5% from European countries, less than 9% from Pakistan, and about 10% from other Asian countries including Indonesia (Pew Research Center, 2011). In terms of ethnicity, Muslim-Americans in the United States are very diverse coming from South Asian (such as Bangladesh, India, Pakistan, and Iran), South East Asian (such as Indonesia and Malaysia), and Arabic-speaking countries (such as Saudi Arabia, Egypt, Jordan, and Morocco) (Pipes & Duran, 2002). Using religion as a basis for unity, Muslim-Americans are often referred themselves as Umma that literally means a community and this term owns sociopolitical implications reflecting an expectation and ultimate goal to be united under the religion of Islam for the greater good (Smith, 1999).

Although Muslim-American have not attracted yet major intention from researchers of college student development, there have been a small number of studies with the aim of exploring the factors that influence the identity development of Muslim-Americans young adults. Some examined the role of religion (Barazangi, 1989; Haddad, 2000, 2004; Mukminin, Fridiyanto, & Hadiyanto, 2013). Peek, 2005), others focused on the impact of politics (Khan, 2000; Marshall & Read 2003), and several studied the role of gender (Bartkowski & Read 2003; Haddad, 2006, 2007; Hermansen, 2000; Read 2003; Read & Bartkowski, 2000). However, none of the existing studies attempting to address the multiple dimensions of identity development with the focus on Muslim Indonesian-American young adults. Under the framework of RMMDI (Abes et al., 2007), the salience of each identity dimension is significantly determined by certain contextual factors which have greater influence on an individual's identity development. Hence, it is crucial to explore the dynamics between multiple dimensions of identity and contextual influences in understanding Muslim Indonesian-American college students' experiences of identity development.

Religion and culture

Religion has been an important identity for Muslim-American youth and a point of interest due to the increased declaration of religious sense of self mostly impacted by family, peers, organizational membership, and the sense of alienation particularly after the event of 9/11 (Hermansen, 2003; Peek, 2005). Muslim-Americans are more likely to turn to religion as their effort to address hostility issues and create a more familiar and comfortable environment within a least known society (Kurien, 2001; Kwon, 2000; Rayaprol, 1997; Smith, 1999). As a result of its significance to their lives in the United States, religion, in terms of identity dimension, has been considered more salient for Muslim Americans than it was in their origins (Peek, 2005). It encouraged the younger generation of Muslim Americans to be more committed to following and practicing Islam than their parents. This was often reflected from their dress, religious rituals, and participation in organizations established to strengthen a sense of self and group unity (Abdo, 2005; Hermansen, 2000; Peek, 2005; Pipes & Duran, 2002; Sirin et al., 2008; Smith, 1999).

The identity of culture actually reflects the intersection and interconnection of other identity dimensions including ethnicity, class, nationality, and religion (Berry, Phinney, Sam, & Vedder, 2006). According to Fine (1995), culture is constituted by four core elements: beliefs, values, symbols, and norms. The massification of culture within a community could be accomplished through the involvement of community members such as parents, peers, and neighbors; institutions such as schools and worship houses; and media such as movies, games, and social media (Sirin et al., 2008). In terms of rules and standards, Islam and its associated cultures are different from or even contradict the western cultures. Muslim-Americans have to face the western values and customs which are often perceived as a threat to their way of life and faith (Pipes & Duran, 2002). It concerns many Muslim-Americans in preserving their family honor and traditional culture and more importantly keeping their faith. Within the complexity of the assimilation between seemingly contrasting cultures, Islam and western cultures, Muslim-American youth have to continuously experience negotiation and integration of these two different value systems in their day to day lives during in college (Sirin et al., 2008).

Social class and gender

The identity of social class for Muslim-Americans intersects with culture, particularly as it is seen from the perspective of contextual influences including social and cultural setting, current experiences, family backgrounds, and career and life plans (Abes et al., 2007). More than half of Muslim-Americans in the United States have attended college with about one-fourths are degree holders and this number is much higher than 18% of the total population in the United States (Gates & Cooke, 2011). Even, about 10% of Muslim-Americans hold post graduate degrees compared to less than 8% of the total population in the United States (Gates & Cooke, 2011). More than 40% of Muslim-Americans are employed in full-time job and earn $50,000 or higher (Pew Research Center, 2011). Muslim-Americans have been perceived as a vibrant community falling into the middle and upper class, receiving higher incomes, and holding exceptionally postsecondary education degrees compared to the general United States population.

The identity of gender is interconnected to religion and its associated culture. More than 45% of Muslim-Americans are female and this percentage is slightly lower than the general population in the United States, about 50% (Gates & Cooke, 2011). The role of gender in Islam and its most cultures is well defined but might become a subject to misunderstanding and misinterpretation by either within or outside the community of Muslim-Americans. For instance, many Muslims believe that a certain separation between male and female individuals who have no family relations. This is necessary since if they are allowed to be together, they would fall into an evil temptation to be committed what are considered sinful actions which would take away or exclude them from the circle of Islam and negatively influence society in general (Pipes & Duran, 2002). In Islam, females are allowed to work but they are not obliged to provide for their family since this is considered to be the primary duty of males (Smith, 1999). Also, to express their sincere obedience to the God, many Muslim-American females prefer to dress in a conservative way and often wear a long veil namely hijab.

Methodology

The phenomenological approach was employed in the study in order to capture the essence of how Muslim Indonesian-American college students experienced, processed, and interpreted their identity development in college. Phenomenological research aims to "explore and search for the essential, invariant structure (essence) or the central underlining meaning of the experiences that contain both the outward appearance and inward consciousness based on the memories, images and meaning" (Moustakas, 1994, p. 52) of the participants. Because the lived experience of the individual with a certain phenomenon is a key element in this study, a phenomenological approach is relevant for the current study on how Muslim Indonesian-American students experienced and perceived identity development in college within the lens of the multiple dimensions of identity model.

Participants

Since the purpose of this study was to gain in-depth understanding of identity development of Muslim Indonesian-American college students, it was sufficient to recruit a small number of participants (Creswell, 2013). Through purposeful sampling, six participants were selected to take part in this study. All of the selected participants met the criteria assigned in this study for participant selection including: were born or mostly grew up in the United States, had both parents who were Indonesian immigrants, were traditional students (age between 18 and 24), completed a Bachelor's degree in no more than five years, and graduated from higher education institutions in the United States. In the process of participant recruitment, I utilized mostly social media, Facebook, and Whatsapp. This yielded six participants, two males and four females, ranging from 24 to 28 years old. One participant identified herself as coming from upper-middle income family while the rest from middle income family. All six participants attended public four-year institutions in the Midwest of the United States. To keep their confidentiality, this study used pseudonym names suggested by the participants: Asma, Zahra, Zaid, Ali, Hasma, and Ayu.

Data collection and analysis

Data of this study was gathered utilizing two primary methods including questionnaire and interview. Questionnaire listed questions about demographic information as well as their parents' status and salient identity dimensions. It was used as supplementary data to interviews. Each participant took part in an individual and semi-structured interview which lasted about 60-75 minutes. These are some examples of the main questions in the interview: (a) tell me your experiences when you were in college, (b) how were you perceived by others in college?, (c) what challenges did you experience in college?, (d) what did being a Muslim mean to you?, and (e) what did being an American to you when you were in college? The participants were asked additional questions to explore issues raised by them during theinterviews. Due to the distance issues, the participants and I as a researcher could not make in-person interviews. Therefore, interviews were carried out through Skype and were audiotaped and then transcribed. The collected data were analyzed by using the data analysis process proposed by Moustakas (1994). This process included *epoche*, phenomenological reduction, imaginative variation, and the synthesis of structural-textural descriptions needed to describe thoroughly the participants' experiences with formative assessment practices. In the first step, *epoche*, I temporarily suspended my existing biases, preconceptions, assumptions, and beliefs about the issue under study to better understand the lived experiences of Muslim Indonesian-American college students. This step is critical in a phenomenological inquiry to gain the pure essence of the phenomenon (Moustakas, 1994). The next step was phenomenological reduction as the process to rid the phenomenon under study of its surface appearances and then reveal the essence or deep understanding about it (Moustakas, 1994). In this step, I began with careful and repetitive readings of all interview transcripts. Then, I highlighted the participants' responses, eliminated the redundant parts, and developed a cluster or category of meanings from the responses. Next, it was imaginative variation where a researcher utilized imagination and approached the phenomenon from divergent angles to unveil possible meanings of narratives (Moustakas,

1994). I followed up the previous step with development of core themes by understanding the transcribed interviews from different perspectives. Then, these themes were validated by checking the transcripts. If the identified themes were compatible with the participants' responses and experiences, they would remain. However, as they did not fit the participants' words, they would be excluded. Then, the last step was the synthesis of structural-textural descriptions to capture the essence of the phenomenon under study (Moustakas, 1994). In this step, I took the developed and validated themes and then provided relevant excerpts from the transcripts as well as the description of what was experience of the research participants. For the description, I wrote a paragraph or some of descriptive passages with the emphasis on shared experiences revealed among the research participants.

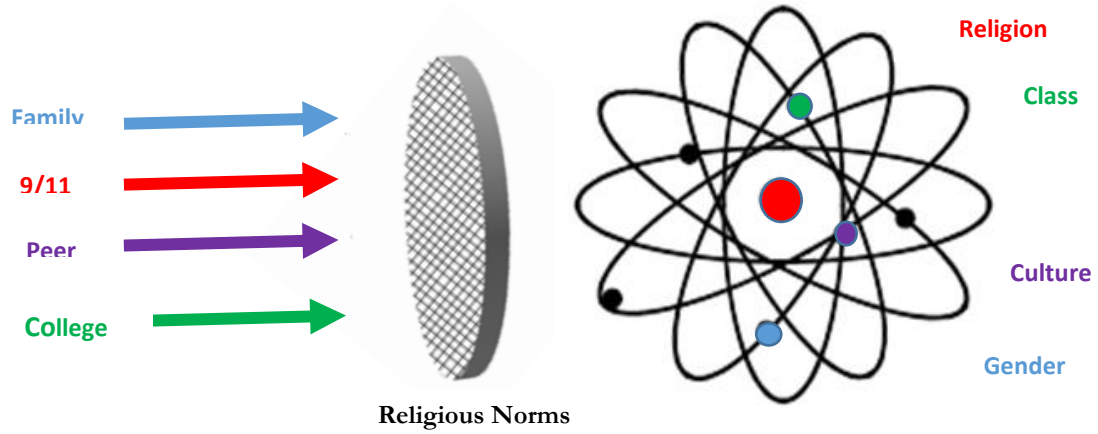
Trustworthiness

In qualitative inquiry, trustworthiness is commonly determined by the degree of credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). Credibility refers to a degree of correspondence between the findings and the reality. I employed different methods to enhance credibility of the findings. First, triangulation of multiple data sources, interview, and data across multiple participants were employed to cross-check and confirm emerging themes. Second, member-checks were conducted with all six participants by sending them summaries of the themes that emerged from the analysis and invited to provide feedback. Another aspect needed to establish trustworthiness is transferability. It refers to a degree of applicability of findings in settings outside of the phenomenon being investigated. Transferability of the findings in this study was accomplished through thick description allowing the participant to speak in detail about particular experience (Lincoln & Guba, 1985). Being provided a complete description of the participants' experiences, readers can determine if the findings are transferrable to other situations.

Findings and Discussion

This study used Abes et al.'s (2007) framework of the RMMDI that provided a useful lens for exploring how Muslim Indonesian-American college students experienced and perceived identity development. This study identified several dimensions of identity which were salient to the participants including religiosity, social class, culture, and gender. Additionally, it revealed that family, the impact of 9/11, peer support, and institutional support were contextual factors which contributed to the participants' identity development. Figure 2 shows how, under the framework of RMMDI, the identified identity dimensions intertwined with contextual influences in the process of Muslim Indonesian-American students' identity development.

Figure 2. *Identity development of Muslim Indonesian-American college students*



Dimensions of identity

Religiosity, for all involved participants, religion was more than about ritual practices. Islam is a way of life that ultimately affected whole aspects of their lives, including values, relationship with others, daily activities, life and career plans, and also college success. Asma said, "Believing in Allah and everything from Him also following His Messenger provides a way of life for me. Islam gives me a guide how I should live my life in its every aspect. For me, being a Muslim is my way to make my life much better. It is not just a religion, in everyday dealings. I always feel connected to the religion when doing anything including what I did during in college when I was an undergraduate." Zaid shared similar thought, "Islam is the center point and anything else must rotate around it. Everything I do in my life, such as education, my family, my personal life should keep rotating around Islam." Even Zahra tried to always use relevant verse(s) from the Qur'an, a Muslim holy book, to verify what she did was in line with the God's commands. Zahra said,

> "Since the second year of my undergraduate, I learned the Qur'an more seriously. Not only how to read it but also how to understand it accordingly. I just want to make sure that everything I do is actually what Allah wants me to do. That's why I need to better understand the Qur'an and so I can verify all of what I do."

Religion has become the most salient dimension of identity for most Muslim-American young adults who either grew up or were born in the United States with immigrant parents from Muslim-majority countries (Hermansen, 2000; Peek, 2005; Pipes & Duran, 2002). They are often found practicing Islam in a more conservative way than their parents of other individuals of older generation (Abdo, 2005). There have been an increasing number of Muslim-Americans who restrict themselves to Halal food and beverages (Pipes & Duran, 2002). More Muslim-American youth wear veils and identify themselves with Islam's conservative principles, and even they need to argue with their parents as they desire to fully practice and embrace Islam (Abdo, 2005). According to Pipes and Duran (2002), more than one-third of

Muslim immigrants became more likely to be religious after they moved into the United States. One third of female Muslim-Americans does not wear make-up in public and avoid shaking hands with males who are not relatives for religious reasons. Peek (2005) asserted that as individuals, typically children or teenagers, perceive their religion as a part of their personal attributes by the fact that they were born into or raised in it, they are not likely to be engaged in the process of self-reflection and internalization of being a Muslim. When they turn to be older and more mature, they become more thoughtful and aware of what they believe and value. As a result, they begin to be more open to idea of questioning their inherited belief and eventually they view it as an essential part or even core dimension of their identity. Moreover, as they experience or see hostility against the community of Muslims, they identify themselves more closely with being Muslims than before. This also what had led the participants in particular to learn the Qur'an and Islamic literature more deeply as well as align themselves with Islam and express it through their physical appearance, talk, and behavior.

Culture, most participants seemingly identified more with the culture of origin and the country, Indonesia, that their parents came from rather than the American culture. Ali shared, "the American culture would be the least important aspect of my identities. Muslim and Indonesian are at the top. Although I was not born and never lived in Indonesia, I really like the culture and people." In addition to cultural elements, some participants commented about social and political situations or events in Indonesia and how these facilitated the stronger connection between them and their culture of origin. For instance, Ayu said, "In 2014 after the presidential election, I was like horey! I am really proud of it." This sense of pride in their culture and heritage of Indonesia was commonly shared among all participants, particularly those who were heavily exposed at home to cultural elements of Indonesia including food, language, music, and even frequent visits to Indonesia. However, they clearly declared that they were a part of the United States. "I definitely love my country (the United States) where I currently live in. We go out and enjoy the fireworks on July 4th to celebrate the independence day of this country. It is beautiful thing to see and I am proud to be an Indonesian, a Muslim and an American at once," Ali said. The definition of the label of Muslim-American is complicated since there are many ways for someone to express it. This socially constructed identity was a result of the tragic terror of 9/11. This event caused Islam to be a more salient dimension of identity for Muslims in the United States and their standing in the general society was increasingly doubted and questioned (Sirin et al., 2008). Consequently, Americans practicing the Islamic faith have utilized the label of Muslim American in addition to their nationality of origin, such as from an Indonesian American to be a Muslim Indonesian-American, (Sirin et al., 2008) as a coping mechanism often used by marginalized groups in the United States such as Asian-Americans, Jewish-Americans, and African-Americans (Grewal, 2009). Over time, the label of Muslim-American has turned to be a collective identity referring to a group of Americans, typically immigrants, who obeyed the religion of Islam and had similar experiences as the United States citizens.

Muslim-American young adults are often found anxious about integrating or balancing their original and American cultures within the United States where they live in (Sirin et al., 2008) and therefore the participants continuously negotiates their dual cultural identities, Indonesian and American. However, the participants reflected Muslim-American young adults in general who had capacity to create integrated and parallel identities as well as to be engaged and involved not only with their ethnic and religious communities but also with the mainstream

society of the United States (Peek, 2005; Sirin et al., 2008). Muslim Indonesian-American young adults are responding to the liberal and open culture, particularly compared to the more conservative environment of origin but Islam always comes first. It is in line with the fact that although almost half of Muslim-Americans identify themselves as Muslim first, they do not have any conflict between becoming a Muslim and at the same time living in the modern way in the United States (Pew Research Center, 2011). Therefore, Muslim-Americans have integrated to the mainstream society more easily compared to other minority groups in the United States (Pipes & Duran, 2002).

Social class, participants shared similar experiences and thoughts that having a good job was their primary reason and goal to attend college. Zaid said, "If you are Muslim, a minority group like us, you have to attend college and then get degree. So, you can get a job with high salary. And actually, that's why I went to college." Ali shared that he was not interested in social sciences since it would not generate sufficient earnings,

> "If you are studying social sciences, oh man, other people would comment 'you are a person of color and you are studying social sciences?' What are you doing? That's why instead of studying social sciences, I took a program of computer science like Ayah (Dad)."

While Hasma noted,

> "I went to college and took Medicine. When in high school, I wanted to study something like science or finance because they are big things. While my parents always want me to be a doctor or an engineer, prestigious jobs, I guess. And this is it, I am a doctor now. I think my parents realize what kind of opportunity they wanted to give their children by moving here. So, they should take advantage of it."

Different from typical Muslim immigrants in European countries mostly living in lower income communities, Muslim-Americans represent a vibrant community with their higher socioeconomic status (Pew Research Center, 2011). Although Europe is close to many Muslim majority countries, it is not really appealing to wealthy and skillful immigrants. Meanwhile, the United States could attract wealthier and more educated Muslim immigrants and their success to achieve American dream was primarily driven by high societal and family expectations as well as largely influenced by Americans' openness and tolerance towards Muslims until the 9/11 horrible attacks (Pipes & Duran, 2002). As a result of the high pressure and expectations from the community and families, Muslim-American young adults tend to prefer high paying careers such as a doctor and an engineer and hence, once combined, these two fields account for more than 30% of the community of Muslim-Americans (Pipes & Duran, 2002). However, recent social and political situations, especially under President Donald Trump's administration, have made changes in the environment for Muslims in the United States including Muslim Indonesian-American young adults who have to build a more pronounced identity because of mostly the current Islam related issues such the Islamic State of Iraq and Syria (ISIS), terror attacks, and travel ban that drew more media and public attention on Islam and the community of Muslims in the United States (Saleem & Ramasubramanian, 2017). Therefore, Muslim-Americans in general and Muslim Indonesian-Americans in particular have to

understand who they are in the environment with different culture form theirs and becoming increasingly unreceptive towards their presence.

Gender, the salience of identity dimensions, such as gender, relies on the extent to which an individual interacts and becomes exposed to these (Jones & McEwen, 2000). In this study, gender was a more salient identity dimension for females than males. It is in line with what females in general experience that they have very high salience of gender identity compared to their male counterparts since they live in a conceptually male dominated world (Jones & McEwen, 2000). The high salience of gender for the female participants could be reflected from their preference of dress. Hasma shared,

> "Being a female in our community, Muslims, gives me a much stronger voice. I think people really want to hear voice from the female. Being a female and a Muslim also wearing Hijab (a veil), I would be more likely to be heard and people would respect my opinion and pay attention to what I think and say."

Whether they covered their heads or not, all female participants talked about the issues of dress as an essential aspect that would define their identity. Muslim-American students in college, particularly those wearing the Hijab, are often found experiencing prejudice and alienation by their class or college mates, faculty, and staff whose negative views are driven by their misconception perceiving a female student with the Hijab as submissive, oppressed, marginalized, and limited to express their thoughts and feelings (Cole & Ahmadi, 2003). Although some Muslim male students probably have similar experiences, there is a greater likelihood that Muslim female students are to be subject to hostility since they can be easily identified as Muslims from their appearance. It became the reason for some female participants to be reluctant of covering their heads when firstly entering college. Zahra shared her experience that she preferred not the Hijab to cover her head in the first weeks of entering college. However, she later decided to wear it once she received more courage and realized that wearing the Hijab could strengthen her identity as a female and a Muslim as well as provide a platform to impact her community and the society in general. She said,

> "I was very happy for finally making decision on wearing the Hijab since I can show to others that I am a Muslim and female who has freedom to wear it and still have a life like others such as going to college and actively involving with my community. I can still do all these while wearing the Hijab. Also, I can still achieve anything I want without having to show my head and hair. I found many women spend more times to enhance their beauty. They focus more on their beauty than their knowledge or behavior. So, I believe Hijab makes me and my voice much stronger."

The contact between Muslim male and female students was another issue discussed by the participants. Ayu said,

> "A lot of Muslim females, of course me too, when I was in college often complained that as Muslim males walked passing the sisters (Muslim females), they did not say anything. We know the male and he knows we were all Muslims but he did not say Salam to us. However, when we left, he was talking to a non-Muslim female student. "

The double standards practiced by Muslim male students to their female counterparts were due to the misunderstanding that the rule to avoid intense eye and physical contacts between males and females merely applied to Muslims. It was reflected from what Zaid shared,

> "We (Muslim males and females) are not as free as with each other like non-Muslims who would be with their opposite gender friends. It is certainly because of Islamic principles. We do not want to get close just to prevent ourselves from committing any sinful act."

The separation rule comes from the cultural and historical traditions across Muslim communities that males and females, especially teenagers and adults, are not allowed to closely mingle with one another to avoid them from falling into evil temptation and then being involved in sinful relations outside of marriage (Smith, 1999). However, Muslims, especially females challenge the hypocrisy performed mostly by males who can comfortably interact with non-Muslim females but tend to be shy and keep Muslim females at a distance (Smith, 1999).

Contextual factors

Family, for most participants in this study, family was found as a major contextual factor in the identity development of Muslim Indonesian-American students. Zahra recalled her experience with her parents,

> "I was raised in a very strict family. At that time, I was not allowed to listen to music but Islamic songs or Quran recitation and have pictures of actors or actresses on my room's walls. However, I still listened to RHCP (Red Hot Chili Peppers) without my parents finding out. But overall, I realize that they were strict for my own good."

Muslim parents in the United States share similar concerns of raising their children within the western culture and values which either partly or mostly contradict and even challenge their way of life and faith, Islam (Pipes & Duran, 2002). They worry about preserving their family honor and traditions and are afraid of leaving their culture and faith. Therefore, many Muslim families put more emphasis on religiosity and Islamic lesson as well as values when raising their children and sometimes they seem to be overly strict when doing so (Pipes & Duran, 2002). The participants also reported that their families impacted their identity development in terms of their degree of conservatism in expressing their faith. Ali shared that his conservative family caused him to be conservative as well. He said, "My family is very religious and have high conservatism in practicing Islam. So, having grown up within a conservative family, I became conservative too." On the contrary, Ayu was raised within a more secular Muslim family and it impacted her identity development. She shared,

> "I found my parents were not really strict and conservative. Although my mother was wearing the Hijab, she never pushed me to wear it. However, she gave me courage when I decided to cover my head by the Hijab. My parents must have had impact on who I am now."

According to Abdo (2005), Muslim-American young adults who grew up in somewhat conservative and strict environments are more likely to be conservative individuals and those with less conservative or more secular families seem to reflect their families' impact on them as well. In addition to values and morals, families, mostly parents, provide a source of motivation for their children's success and even they are not physically present (Haddad, 2004).

The 9/11, the participants were children as 9/11 happened. After that horrible terror, all participants experienced kinds of bullying and stereotyping in their very young and vulnerable age. It might have made them to question and even challenge their identity as well as discourage them from identifying themselves as Muslims. Asma shared her experience of being a victim of bullying after the 9/11,

> "It was a great time as I was little. I was very very happy. I used to celebrate Ramdhan with family and relatives. Then, in 2001, that thing (the 9/11) happened and it caused everyone or many people in this country to hate us, Muslims. So, I began to keep distant from it a bit. Moreover, some I met in college said to me 'you and your people cannot even read. Oh no, I guess you can read very well because terrorists have to read instructions to assemble and blow a bomb. It was really bad."

Some students reported that they had similar experiences but these, in turn, made them stronger and they expressed their gratitude for the non-Muslims' support and protection to the Muslim community in the United States. Zahra said,

> "We are currently in a time when Islam is the new black. I feel like I am being crushed right now. It hurts me a lot as a Muslim that they are dehumanizing and insulting my faith. However, in the same time, it made me much stronger and prouder of being a Muslim. Absolutely, the support from our non-Muslim communities is really valuable and made me feel that I am not only a Muslim but also an American and so I can confidently declare I am a Muslim-American."

These participants' experiences indicated that the event of 9/11 and its aftermath have had a major influence on their identity development. Since the 9/11 and its aftermath, Muslim-Americans, including Muslim Indonesian-American students, have become subject to increased prejudice, stereotyping, and hostility (Britto & Amer, 2007; Cole & Ahmadi, 2003; Peek, 2005; Sirin et al., 2008). Clearly, bullying and discrimination have a great impact on, in addition to identity development, Muslim Indonesian-American students' anxiety when attending a new environment in college. According to Connell and Farrington (2000), students who have experienced bullying and discrimination tend to have low self-esteem and lack self-confidence and assertiveness. Bullied and discriminated students are also often found suffering from any personality problem and facing difficulty in trusting others. They become more cautious and careful with what they state and what they act (Connell & Farrington, 2000).

Peer support, most of the participants reported the tremendous influence of their friends' supports through the organization of MSA (Muslim Student Association) on their lives and experiences in college as Muslim Indonesian-American students. Zaid shared his friends' impact on his process of integrating into college, "The organization, MSA, and its members

provided me a sense of belonging. Without the organization and friends there, my experience in college would have been worse. It turned to be my social outlet." Moreover, the MSA was found to help the participants enhance their social skills. Hasma shared her experience, "In the first time I came to college, I was very shy and quite. After getting involved in the MSA and making friends with its members, I became increasingly friendly and open. I realized that I was not very social at that time. However, my involvement in the MSA had helped me a lot become more social." The MSA, also, provided the participants with an environment which enabled them to remain on the Islamic path as well as refrain from any restricted behaviors. Ali described how having lack of the support from peers and an organization such as the MSA has put him off the right path. He said,

> "Once I was involved in the MSA and kept contact with friends there, I became more religious. But it was only for a while. Then, I slowly left that environment and started doing what typical American students do. Later, I regretted my leave and turned back to my Muslim friends and tried to get involved again in the MSA. It was difficult to keep up with staying on the Islamic path without support group like the MSA."

Peers and the MSA are clearly an agent of change in the college experiences of Muslim Indonesian-American students and their identity development. Student organizations and their members in college play a critical role in the development of underrepresented and marginalized students as a source of group support, network, friendship, and mentoring relationships which can facilitate and enhance their success in terms of social adjustment, academic attainment, and persistence in college (Swail, Perna, & Redd, 2003). Hence, an organization like the MSA in college should be supported by institutions as a critically institutional intervention and resource which help facilitate identity development of Muslim Indonesian-American students and resolve varied difficulties and problems they experience during in college.

Institutional support, some participants found their institutions from which they were graduated incredibly supportive by providing them resources and supports to meet their needs as Muslims. They specifically mentioned tangible examples including the budget for the MSA, the prayer room and the proper washroom to perform *Wudhu* (ablution) that have been provided in several campus buildings, the ability to reserve rooms for prayer meetings, and the availability of Halal food in campus. Ali said, "There was so much accommodation and flexibility on campus. Muslim students were given rooms for our prayers and flexibility around classes. Also, we could request an off-day to observe our holidays like Ied Fitr." Similarly, Asma shared,

> "My university already had the organization for Muslim students, the MSA. I think the university really supported it. For example, they offered prayer rooms and other necessary things to practice our religious rituals. And I did not realize that the MSA in my university was so big with hundreds of student members."

Overall, Muslim Indonesian-American students seem very pleased with the support they receive from the college. Clearly, college support and understanding on Muslim Indonesian-American students are very important to promote their identity development.

Implications and Limitations of the Study

Employing Abes et al.'s (2007) framework of the Reconceptualized Model of Multiple Dimensions of Identity (RMDDI), this inquiry unveiled that environmental, cultural, and sociopolitical conditions have created contextual factors (family, 9/11 impact, peer, and college support) that influence the salience of various dimensions (religiosity, culture, class and gender) for Muslim Indonesian-American young adults during their study in college. The emerging findings from this investigation (the interviews) that have been rarely discussed in existing literature are that MSA, the student organization that Muslim students on campus are involved in, and college support were found to play a critical role in positively promoting Muslim-American students' identity formation. Having supportive environment at college is important for minority college students, including Muslim Indonesian-American students, because it impacts their entire postsecondary trajectory. However, prejudice based on religious practice and cultural differences remain to negatively influence Muslim-American college students' educational experience. If the institutions do not recognize the oppression they face and its impact on their development, and also unwillingly make efforts to resolve it, Muslim Indonesian-American college students will be more difficult to successfully persist at college. Further research is necessary to identify the identity development of Muslim Indonesian-American college students across types of socioeconomic status and postsecondary institutions as well as with the focus on on-going students in order to understand their complexities and accommodations they need at college.

The current study has several limitations that should be taken into the interpretation process of the findings. First, all participants had attended public four-year institutions in the Midwest of the United States which had quite selective admission. It was likely they had satisfactory academic attainment during college years and preparedness prior to attending college. Hence, the findings resulted from this study might not describe Muslim Indonesian-American students enrolled or graduated from less selective institutions. Second, another limitation of this study was its focus on Muslim Indonesian-American students who completed their degree. In addition, the participants in this study were from middle to upper-middle income family. Therefore, it is important for readers to be cautious in considering the transferability of this study's findings to on-going and lower socioeconomic status students.

Disclosure statement

No potential conflict of interest was reported by the author.

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Looking at the Link between Parents' Educational Backgrounds and Students' English Achievement

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Abstract

This study investigated the link between parents' educational background and students' English achievement at one senior high school in Palembang, South Sumatra, Indonesia. One hundred and eight senior high school students were involved in this study. Data were collected through a parents' educational background questionnaire and an English test. Descriptive statistics, Pearson product moment correlation, and regression analysis were employed to analyze the data. The results of the Pearson product moment correlation coefficient revealed that parents' educational background significantly correlated with the students' English achievement. Additionally, the results of the linear regression analysis indicated that there was a correlation between parents' educational background and students' English achievement. Although the contribution was small and there were other factors that contribute to the students' academic achievement, parents' educational background is important in supporting their children's English achievement.

Keywords

Parents' educational background, students' English achievement

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Introduction

Education is essential for the development of society. The more educated the people of a society are, the more civilized and well-disciplined the society might be. Education is also a primary need in this era of globalization (Haryanto, Mukminin, Murboyono, Muazza, & Ekatina, 2016; Mukminin, Rohayati, Putra, Habibi, & Aina, 2017). Education gives insight, grooms the personality, inculcates moral values, adds knowledge, and provides skills for people who will live in a very competitive society. In every field, highly qualified people are needed (Mukminin, Haryanto, Makmur, Failasofah, Fajaryani, Thabran, & Suyadi, 2013; Mukminin, 2012). However, there are several studies focusing on the problems of education in Indonesia including Mukminin, Lestari, Afifah, Rahmadani, and Hendra (2017) and Musyaddad (2013) who argue that there are some problems of education in Indonesia including curriculum, budget, quality, purpose of the education, national examination, and learning facility. These kinds of problems have influenced the quality of education both in national and in international levels. For example, although since 1995, Indonesia has taken part consistently in every round of Trends in International Mathematics and Science Study (TIMSS), the results have not been satisfactory (Luschei, 2017),

> Of the 38 countries participating in 1999, Indonesia ranked the 34th and the 32nd in math and science respectively. In 2003, performance in math increased to 411, while the science score slipped to 420. The reverse occurred in 2007, with math performance decreased to 397 and science improved to 427. Scores in both math and science fell in 2011 to 386 and 406 respectively. In 2015, math performance increased to 397, while science performance decreased to 397. (p. 12)

The results of Indonesian's participation in TIMSS have implied that the quality of education should become the responsibility of all parties including government, school, and family. Family is one of the important factors in supporting the education of their children. As a unit of society, the family is obviously a major socializing agent, so that it is important in determining the child's motivation to achieve success (Muola, 2010). Mainly, family has responsibility for socializing children for making them productive members of society. The more the parents are involved in the process of imparting education to their children, the more the children might excel in their academic career and to become productive and responsible members of society (Arib, 2017; Rafiq, Fatima, Sohail, Saleem, & Khan, 2013). Additionally, parents' personal educational backgrounds and economic backgrounds have a significant effect on their children's education. It means that parents' educational background plays an important part in their children's education. The education received by the children depends very much on the education that their parents have (Arib, 2017; Gratz, Nation, Schools, & Kurth-Schai, 2006).

In relation to education, English is one of the compulsory subjects in Indonesia's educational system. The internal and external factors, for example, tend to influence the learners' English achievement (Yaghoubi & Rasouli, 2015). Furthermore, data from Education First English Proficiency Index also showed that the average score of Indonesian's English proficiency was 52.74 and labeled as a moderate proficiency level. This score has placed Indonesia in the 28th rank out of 63 countries in terms of index that

compares the average English language ability in different countries (OECD, 2012). The data indicate that English proficiency in Indonesia is still lower than the other countries.

However, learning English is not an easy process, there are some problems or difficulties in learning English. In their study, Abrar, Mukminin, Habibi, Asyrafi, Makmur, and Marzulina, (2018) and Mukminin, Muazza, Hustarna, and Sari (2015) found that the problems in learning English such as teacher's competence, students lack of English foundation background, students' lack of confidence, inappropriate curriculum, unmotivated, encouraged and gained learning strategy, not practice speaking English with English native speakers, and class environment. Some researchers have previously explored parents' educational background and students' English achievement. For example, Apriana (2015) found that parents' educational background was significantly correlated to students' English achievement though the correlation was weak. Also, Karnegi (2010) found that there was a strong correlation between parents' educational background and students' English achievement. Schnabel, Alfeld, Eccles, Koller, and Baumert (2002) found that a significant positive correlation existed between parents' education and students' achievement. It can be concluded that the results of those studies are still inconsistent. Additionally, Arib (2017) found that there was no significant relationship between parents' occupation and educational background and students' achievement in learning English.

The findings of the previous studies on the link between parents' educational background and students' English achievement are still mixed. The current study investigated the correlation between parents' educational background and students' English achievement at one senior high school in Palembang, South Sumatra, Indonesia. Two research questions guided this study: (1) Is there any link between parents' educational background and students' English achievement of the twelfth grade students at one senior high school in Palembang, South Sumatra, Indonesia? and (2) Does parents' educational background influence students' English achievement of the twelfth grade students at one senior high school in Palembang?

Literature Review

Parents' educational background refers to "parents' highest education" that means the highest level of education attained by parents. International Standard Classification of Education (ISCED) from UNESCO (2011) has grouped nine levels of education. They are early childhood education, primary education, lower secondary education, upper secondary education, post-secondary non-tertiary education, short-cycle tertiary education, bachelors or equivalent level, master's or equivalent level, doctoral or equivalent level. Parents with higher levels of education are also more likely to believe strongly in their abilities to help their children learn (Selvam, 2013). Highly educated parents have greater success in providing their children with the cognitive and language skills that contribute to early success in school. Selvam (2013) also adds the relationship of parents' education to their children's achievement motivation in academic area is meditated by parents' beliefs and behaviors are likely to be influenced by their educational experiences and how these parental beliefs and behaviors actually influence children's achievement motivation in academic area. Additionally, family characteristics such as parental income, education, and family size seem to be connected to students' achievement (Levin, 1994; Hanushek, 2007).

In terms of student achievement, Algarabel and Dasi (2001) state that achievement is the competence of a person in relation to a domain of knowledge. Additionally, Sukmadinata (2007) stated that achievement of students could be seen from mastering the subject that they have taken up. Achievement refers to the good result from learning. In addition, English achievement has a strong relation with the academic achievement. English achievement means the competency that is achieved by the students in English subject. Being well-educated parents give benefits for their children. Intosh (2008) stated that parents could serve as good role models by being conscientious, ambitious, and methodical, all of which will contribute to make their children more successful at school. Moreover, educated parents can provide their children with guidance to get good information at home. Ghuntla, Mehta, Gokhale, and Berhanun (2012) found that educated parents had more attention to the facility used by their children related to their study, especially in learning English. Students from good socio-economical and high parental educational background have good chances for getting admission in good professional courses. Parental education level also determines the facilities and the cultural level of the home. Udoh and Sanni (2012) claim that educated parents often get a better job. Thus, with their income, they are better prepared to give educational materials for their children. In other words, this suggests that students manage to support their learning with good educational materials because they have parents who can provide them with educational supporting materials that they need including in learning English.

Methodology

Research design and participants

In this study, we used a correlational approach to find out the link between parents' educational background and students' English achievement. The first procedure was we identified the parents' educational background by using educational background questionnaire and the second procedure was we gave the students test of TOEFL. The next step was we analyzed the link between the two variables through SPSS based on the results of the educational background questionnaire and TOEFL test. One hundred and eight senior high school students were involved in this study. Data were collected through a parents' educational background questionnaire and an English test.

Data collection and analysis

In this study, we used questionnaire and a test as the instruments to gather the data concerning the link between parents' educational background and students' English achievement of the twelfth grade students at one senior high school in Palembang, South Sumatra, Indonesia. To obtain the information about parents' educational background, we used the questionnaire from UNESCO (2011) which was adapted by Apriana (2015). The questionnaire consisted of parents' educational background which was related to parents' highest education. The questionnaire asks about the level education of father and mother of the students. In scoring parents' education background, the students ticked one of their parents' educational background levels including early childhood education, primary

education, lower secondary education, upper secondary education, post-secondary non-tertiary education, short-cycle tertiary education, bachelor's or equivalent level, master's or equivalent level, and doctoral or equivalent level. The score was from 0 until 8. The highest level education is, the highest score is. A higher score indicates a higher degree of educational background level. To obtain the students' English achievement, we used TOEFL Junior test. The purpose of the TOEFL junior test is to provide an objective measure of the degree to which students in the target population have attained proficiency in the academic and social English language skills. The designers of the TOEFL junior standard test assert that the TOEFL junior standard test is an English-proficiency test that is not based on or limited to any specific curriculum. There are three sections: listening, structure, and reading. Each section contains 42 four-choice questions with a total testing time of 1 hour 55 minutes. TOEFL junior test scores are determined by the number of questions that a student has answered correctly. There is no penalty for wrong answers. The category of the result of the test is grouped into very good, good, average poor, and very poor.

In terms of correlation and regression, it was necessary to know whether the data were normal for each variable and linear between two variables. In this study, normality test was used to find out whether the data of educational background questionnaire and TOEFL junior test were normal or not. We used I-Sample Kolmogorov-Smirnov in SPSS. If p-value is higher than .05, then it was normal and vice versa. In this study, linearity test was conducted to know whether the data of educational background questionnaire and TOEFL junior test were linear or not. If the score was higher than 0.05, the two variables were linear. Linearity test in SPSS was used to see if the data were linear or not. After getting the result of educational background questionnaire and TOEFL Junior test of students, we used Pearson – Product Moment Correlation Coefficient to find out whether or not there was a correlation between the variables. The interpretation of coefficient correlation was to find whenever Pearson *r* is higher than 0.34(>0.34). Regression Analysis was used to find out whether or not parents' educational background influenced students' English achievement. We identified the influenced of variables by using the result of R-Square. Simple regression analysis was used to measure two variables. The score of parents' educational background as independent variable and students' English achievement as dependent variable were calculated by SPSS.

Findings and Discussion

Parents' educational background and students' English achievement

One hundred and eight students participated in this study. The descriptive statistical analysis of parents' educational background for the participants indicated that the maximum score was 8, and the lowest score was 1. The mean score of parents' educational background for the participants was 5.05 and the standard deviation was 1.588. This mean score indicates that the level of parents' educational background of participants is Short-cycle Tertiary Education (D2/D3). It was revealed that from the questionnaire, the 9 levels of parents' educational background were all perceived by the students with different numbers. Primary education (SD) was as the least perceived level and bachelor's or equivalent level was as the most perceived for both father and mother educational background categories. The

descriptive statistical analysis of English achievement for the participants indicated that the maximum score was 79, and the minimum score was 10. The mean score of English achievement for the participants was 47.02 and the standard deviation was 17.739. This mean score indicates that the level of students' English achievement of participants is very poor. For each category, 13 students had a good English achievement. 19 students obtained an average English achievement. 5 students had a poor English achievement. 71 students had a very poor English achievement.

The results of normality test and linearity test

The data were interpreted as a normal one if p> 0.05. If p< 0.05, it means the data were not normal. Kolmogorov-smirnov was used to see the normality. The results of normality test indicated that the data from each variable were all normal and appropriate for data analysis with coefficients .290 for parents' educational background and .605 for English achievement. For linearity test, deviation of linearity was obtained. If probability is more than .05, the two variables are linear. The results showed that, the deviation from linearity betweenparents' educational background and students' English achievement was .769.

Correlation between parents' educational background and students' English achievement

Based on the Pearson product moment correlation coefficient, the result indicated that the pattern of correlation between parents' educational background and students' English achievement was positive. The correlation coefficient or the r-obtained (.420) was higher than r-table (.176). Then, the level of probability (p) significance (sig.2-tailed) was .000. It means that p (.000) was lower than .05. Thus, there was a significant correlation between parents' educational background and students' English achievement. The details are following:

Table 1. *Correlation between parents' educational background and students' English achievement*

		Parents' Educational Background	English Achievement
Parents' Educational Background	Pearson Correlation	1	.420**
	Sig. (2-tailed)		.000
	N	108	108
English Achievement	Pearson Correlation	.420**	1
	Sig. (2-tailed)	.000	
	N	108	108

Influence of parents' educational background on students' English achievement

The results indicated that parents' educational background influenced students' English achievement significantly with t_{value} (4.763) was higher than t_{table}(1.982) with sig. value (.000) was lower than probability (.05). Therefore, there was a significant influence between parents' educational background toward students' English achievement. The details are following:

Table 2. *The regression analysis of parents' educational background and students' English achievement*

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	23.348	5.208		4.483	.000
	parents' educational background	4.691	.985	.420	4.763	.000

a. Dependent Variable: English Achievement

In addition, to know the percentage of parents' educational background influence on the students' English achievement, R-Square was obtained. The result of the analysis revealed that the R Square (R^2) was .176. It means that parents' educational background led a significant effect in the level of 17.6% toward students' English achievement, and 82.4% was an unexplained factor value. The details are following:

Table 3. *Model summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.420[a]	.176	.169	16.175

a. Predictors: (Constant), parents' educational background

Based on the result of Pearson product moment correlations, it was found that there was a positive and a significant correlation between parents' educational background and students' English achievement of the twelfth grade students (*r*- .420).This means that parents' educational background had a relation to students' English achievement. The level of correlation between parents' educational background and students' English achievement was fair. Parents with a higher level of education can stimulate their children in a good learning environment. They can transfer what they have in their children's cognitive development. For example, by having more discussion about the lesson, using rich vocabulary in the interaction of parents and children, and reading more books with the

children. This result is in agreement with Gratz's (2006) arguments that parents' educational background has a relationship with students' English achievement.

Furthermore, the more educated the parents are, the more they are able to pass along the education and help their children excel in school. Parents with little or no education may find it very difficult to understand or help their children in the area of education. For example, Selvam (2013) states that parents with a higher level of education are also more likely to believe strongly in their abilities to help their children learn. Highly educated parents have greater success in providing their children with the cognitive and language skills that contribute to early success in school. Also, Ghuntla, Mehta, Gokhale, and Berhanun (2012) argue that educated parents have more attention to the facility used by their children related to their study. Moreover, Karnegi (2010) argues that parents who have a high educational background and a good English competence generally prepare their children to face globalization with good English preparation. They will help learning English by doing many ways such as providing their children with facilities, or paying private tutors. Furthermore, the result of this present study is also in agreement with the findings of Apriana's (2015) study who found that parents' educational background was correlated to students' English achievement even though the correlation was not strong. In addition, Ardila, Rosselli, Matute, and Guajardo (2005) indicated that there was a significant correlation between the parents' educational level and the students' test performance.

Conclusion

The current study investigated the correlation between parents' educational background and students' English achievement at one senior high school in Palembang, South Sumatra, Indonesia. Based on the results of the present study, we found that parents' educational backgrounds were significantly correlated with students' English achievement with *r*- .420. The category of correlation was fair. Additionally, the linear regression analysis showed that parents' educational background (17.6%) significantly influenced the dependent variable, students' English achievement. In short, the total contribution of parents' educational background and students' English achievement showed a significant link although the contribution was small, suggesting that there were other factors that could contribute to their student's English achievement such as schools, teachers, friends, and environment.

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Student-Centred Teaching Strategies by Gender, Grade Level, and Teacher's Self-Concept in Mexico

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Abstract

This study examined the student-centred teaching strategies of Mexican teachers by gender, grade level, and self-concept as an instructor. A conventional sample of 573 teachers from diverse school settings in the state of Yucatan in Mexico responded to a paper and pencil questionnaire. Results indicated, in general, that teachers prioritized classroom management and independent learning activites, in contrast with teaching strategies emphasized by policies and teacher´s training programs in the country, such as cooperative learning, differentiation, or promoting critical thinking. There were some gender and grade level differences. In general, female teachers promoted more independent activities than males. As expected, primary school teachers were more concerned with using differentiation teaching strategies than secondary education teachers, considering the greatest variance in younger students. Teachers self-concept had differential effects. Whilst self-efficacy feelings had no influence in the use of specific student-centred teaching strategies, high self-steem teachers used more student-centred teaching strategies. The importance of asking teachers what they did, and how they felt as teachers was argued in light of results. Future research avenues regarding self-concept and teaching strategies are posited.

Keywords

Mexican teachers, teaching strategies, self-concept, classroom management

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Introduction

A robust international body of literature leads investigators to analyze the outcomes of student-centred teaching strategies that promote high-level thinking and the achievement of meaningful relationships and positive psychological well-being (Gillies, Ashman, & Terwel, 2008; Johnson & Johnson, 1989; Tomlinson, 2003). Yet, there are relatively few empirical studies on the use of these kinds of teaching strategies in Mexico. Educational researchers in Mexico rarely ask teachers directly what they do in their classrooms and how they feel as teachers. Thus, this study seeks to understand the relationship between student-centred teaching strategies and the teachers´ s self-concept, across different levels within the educational system in Mexico. We aim to explore the differential effects of teacher's self-esteem and self-efficacy in relation to their teaching activities. There are relatively few studies in Mexico exploring the use of student-centred teaching strategies by grade level. Studying the use of specific teaching strategies across educational levels is important since some teaching techniques may be effective in some levels, but inappropriate in others, that is perhaps because the literature on teaching strategies is full of "effective teaching techniques" but they rarely prescribe uses and limitations. Even the opposite may be true; sometimes using lower grade level techniques out of Classroom may be an important remediation strategy, without taking away Classroom-time focus on grade-level standard (Dataworks Educational Reseach, 2014).

In general, research on teaching has confirmed the lack of a clear relationship between student outcomes and teacher inputs. Apparently, either performance depends upon student's characteristics and potentials or investigators have failed to identify new variables within the classroom that may help to explain learning and motivation to achieve. Few studies focus on the dynamics of the teachers' self-concept and how this is culturally shaped and instrumental to create a learning environment. Wenglinsky (2002) published an outstanding review of teacher classroom practices and their impact on student performance. He asserts that three main classroom practices: individualization, collaboration, and authentic assessment. Individualization means that teachers instruct each student by drawing upon the knowledge and experience that each student already possesses and authentic assessment occurs in an on-going basis rather than at a single point in time (Golub, 1988; Graves & Sunstein, 1992; McLaughlin & Talbert, 1993). Teacher strategies in this study are student-centred, that is, they are based in instructional activities in the classroom that aim to foster learning and positive outcomes for students. We have chosen five most frequently used actions in Mexican classrooms including critical thinking promotion, fostering independent study, differentiation of instruction, cooperative learning and classroom management. Critical thinking aims to make students think and reflect upon specific problems or curriculum contexts. Independent study aims to foster learning by self-initiated activities beyond the classroom. Differentiation in teaching refers to the adaptation of instructions considering individual differences. Cooperative learning means that teachers allow students to work together in groups and classroom management is closed linked to an atmosphere of discipline and the creation of a positive learning environment.

On the other hand, we explored the relationship in the uses of these five specific strategies and the teacher's self-concept. Teacher´s self-concept for this work refers to a broad construct that include teachers' feelings of self-efficacy and their general perception of

how good of a teacher they feel they are. The purposes of this study were to identify the use of five student-centred teaching strategies frequently used in Mexico and to explore differences by gender, grade level, and their association to self-concept as a teacher. More specifically, this study was to describe the most often student-centred teaching strategies used by Mexican teachers, to explore differences by grade level, to explore differences by gender, to explore the relationship between teaching strategies and two main dimensions of teacher´s self-concept: self-efficacy feelings and their self-esteem as teachers. To achieve the purposes of the study, two central research questions guided this study: (1) How are these teaching strategies used in Mexico? and (2) How Mexican teachers feel about their use?

Literature Review

Student-centered teaching strategies

A robust international body of literature leads investigators to analyze the outcomes of student-centered teaching such as high-level thinking and achievement, meaningful relationships, and positive psychological well-being (Gillies, Ashman, & Terwel, 2008; Johnson & Johnson, 1989; Tomlinson, 2003). Additional literature demonstrates the widespread adoption of student-centered teaching practices, from Cyprus (Hursen & Soykara, 2012) to Vietnam (Nguyen Thanh, Dekker, & Goedhart, 2008). Yet, there are relatively few empirical studies of teaching strategies in Mexico. Student-centered teaching fosters a host of positive outcomes for students. For example, in a meta-analysis of research about cooperative learning compared with competitive or individualistic learning, Johnson and Johnson (1989) found that cooperative learning fosters considerably greater efforts to achieve among students. These scholars also found cooperative learning promotes supportive social and peer relationships, as well as maturity in cognitive and moral decision making (Johnson & Johnson, 1989). In another example, studies of differentiation strategies demonstrate the effectiveness of differentiation as responsive to individual student needs, especially in schools where programs for special education or gifted education do not exist (Emanuelsson, 2003; Tomlinson, 2003). Similarly, research shows that effective class management strategies are the "art" of establishing environments that foster student cooperation (Cangelosi, 2014).

Additionally, students experience positive outcomes from teaching practices that promote independent or autonomous work (Stefanou, Perencevich, DiCintio, & Turner, 2004) and critical thinking (Abrami et al., 2008; Hooks, 2010). How are these student-centered teaching strategies, which are known to promote positive outcomes for students, used in Mexico? There are literally hundreds of teaching strategies depicted in the literature, some of them traditional and frequently used such as various types of lectures, some others are more sophisticated and innovative with the use of technologies, problem-solving activities or learning projects with different learning conditions. However, in this study we focused in 5 of the most popular teaching strategies referred by our teachers in training at our teacher training program, at the college of education in the University of Yucatan in Mexico. We explored specifically strategies to promote critical thinking, activities that instill on independent study, differentiation techniques, and strategies of classroom

management. Focusing on five specific teaching strategies has allowed us to compare its differential use across grades and to explore for gender differences.

Critical thinking

Logically, because of developmental reasons, teaching strategies that promote critical thinking tend to be more popular in higher grades than in young children. In fact, some authors believe that critical thinking is not a teaching strategy -per se-; rather they see it as a procedure based on strategies that increase cognitive abilities and the probability of a desirable outcome. Hence, promoting critical thinking is "teleological in nature: it concerns the attainment of goals, desirable outcomes…to obtain the desired outcome, we have at our disposal (to some degree, with proficiency) a set of cognitive skills" (Sohroy, 2005, p. 163). Perhaps, as a teaching technique, it was born with Socrates along with the famous *maieutic* method that through incisive questioning the teacher asked to instill the discipline of analysis and seeing the connections between ideas and critical thinking (Abrami et al., 2008; Hooks, 2010). Critical thinking is more than thinking clearly or rationally; it is about thinking independently and be able to formulate one's own opinions and conclusions.

Teaching higher-order thinking skills involves not so much conveying information as conveying understanding. Students learn concepts and then attempt to apply them to various problems, or they solve problems and then learn the concepts that underlie the solutions. These skills tend to be conveyed in one of two ways: through applying concepts to problems (applications) or by providing examples or concrete versions of the concept (simulations). In either case, students learn to understand the concept by putting it in another context. In the case of an application, this might mean solving a unique problem with which the student is unfamiliar. In the case of a simulation this might mean examining a physical representation of a theorem from geometry or engaging in a laboratory exercise that exemplifies a law from chemistry. While both lower-order and higher-order thinking skills undoubtedly have a role to play in any classroom, much of the qualitative research asserts that the students of teachers who can convey higher-order thinking skills as well as lower-order thinking skills outperform students whose teachers are only capable of conveying lower-order thinking skills (Langer & Applebee, 1987; Phelan 1989).

Classroom management

Classroom management refers to the wide variety of skills and techniques that teachers use to keep students organized, orderly, focused, attentive, on task, and academically productive during a classroom. When classroom-management strategies are executed effectively, teachers minimize the behaviors that impede learning whilst facilitating learning. Effective teachers tend to display strong classroom-management skills. Watkins and Wagner (1991) assert that role of the teacher is undervalued in terms of the role she plays in promoting (or discouraging) certain types of behaviors. While a limited or more traditional interpretation of effective classroom management may focus largely on obedience and discipline such as following directions, listening attentively, etc.—a more encompassing or updated view of classroom management extends to everything that teachers may do to facilitate or improve student learning, which would include such factors as attitudes

(respectful and fair treatment of students), physical environment (learning materials) and expectations. Classroom management techniques aim to instill a positive learning environment that facilitates learning and turn the classroom into a fertile thinking and learning ground.

Cooperative learning and independent work

Cooperative learning is a systematic pedagogical strategy that encourages small groups of students to work together for the achievement of a common goal. The term 'Collaborative Learning' is often used as a synonym for cooperative learning when, in fact, it is a separate strategy that encompasses a broader range of group interactions such as developing learning communities, stimulating student/faculty discussions, and encouraging electronic exchanges (Bruffee, 1993). Cooperative learning as a teaching strategy requires careful planning and preparation. Understanding how to form groups, ensure positive interdependence, maintain individual accountability, resolve group conflict, develop appropriate assignments and grading criteria, and manage active learning environments is critical to the achievement of a successful cooperative learning experience. For example, in a meta-analysis of research about cooperative learning, compared with competitive or individualistic learning, Johnson and Johnson (1989) found that cooperative learning fosters considerably greater efforts to achieve among students. These scholars also found that cooperative learning promotes supportive social and peer relationships, as well as maturity in cognitive and moral decision making (Johnson & Johnson, 1989). Similarly, research shows effective classroom management strategies are the "art" of establishing environments that foster student cooperation (Cangelosi, 2014).

Cooperative learning gives students the opportunity to work with others and see different points of view. Research shows that students learn more effectively when working together rather than apart, and it is also known to improve self-confidence in students. The jigsaw technique is especially effective because each student is responsible for one another's learning, and students find out really quick that each group member has something equally important to contribute to the group in order to make the task a successful one. Students are exposed to and use many skills throughout this strategy: communication, problem-solving skills, cognition, and critical thinking -- all of which are essential for a successful academic career. Teaching strategies based upon collaborative learning had mixed results in Mexico. In our culture, team work does not necessarily involve every student in the actual academic work; some of them provide emotional support, drinks and snacks or compensate their absence or lack of work in other ways.

Self -learning or independent learning is a process of self-regulation. As such, student approach curricular contents on their own, and teaching activities can direct and foster this kind of effort. For this, teachers must plan, monitor, and establish the pace and direction of the homework. Self-motivation is a key element for successful independent learning. 'External' elements which support independent learning include the development of a strong relationship between teachers and students, and the establishment of an 'enabling environment'. Independent work refers to the work of the student outside the classroom with the help or supervision of a teacher. This is also known as independent learning. Additionally, students experience positive outcomes from teaching practices that promote

independent or autonomous work (Stefanou, Perencevich, DiCintio, & Turner, 2004). Independent learning is often linked to other approaches to learning such as 'personalization', 'student-centred learning' and 'ownership' of learning. Discussion of independent learning frequently arises in the context of important issues such as student-teacher roles and relationships, and the role of information and communications technology (ICT) in learning (Meyer, Haywood, & Faraday, 2008). Not every student benefits from teaching strategies that promote independent work, younger students, dependent pupils and students with few or non-existent resources at home may not develop their academic work competently. In addition, some basic cognitive skills such as focusing of memory and attention and problem-solving, metacognitive skills associated with an understanding of how learning occurs are necessary. There might be also some cultural factors to consider in approaching cooperative learning in gregarious societies such as Mexico.

Gender and teachers' self-concept

There are various research reports regarding differences by gender and instructional strategies. For example, Zhukov (2012) reported that in music education, male teachers gave general directions, whereas female teachers offered more time to practice. Also, male and female teachers offered different kinds of reinforcement and feedback (Klassen & Chiu 2010). In fact, gender differences in teaching styles and student perception have been thoroughly investigated. For example, Mullola et al. (2012) reported that student's temperament played a significant role in teacher's perception of the student's learning style, educational competence and teachability.

Self-concept is a general term used to refer to how someone thinks about, evaluates or perceives themselves. To be aware of oneself is to have a concept of oneself. Self-concept includes two broad dimensions of one`s self-perception. The first has to do with accomplishment of task and it is called self-efficacy, and the second has to do with the value ascribed to one's self, it is also known as self-esteem. However, self-concept could simply have defined as what a person thinks of oneself. In the literature of educational psychology, Self-concept is an integral construct that incorporates all the experience of individual self and it is especially important to consider when explaining somebody´s performance. Teacher self- concept has been a topic rarely investigated in Mexico with relation to the use of specific instructional strategies, when in fact these are import indicator of how teachers see themselves in their job and situation. Self-efficacy of teachers refers to feelings about their work in the school's belief other couple because to carry out a course of function successfully (Bandura, 1977). In this study, with the purpose of further understand how teaching strategies impact the teacher; teacher's self-concept was explored with two questions related to the two major dimensions of self-concept: self-perception (How good of a teacher you are?) and self-efficacy (How efficient is your teaching?). Teacher self-concept was thus defined as the evaluation teachers make about themselves regarding how good and effective they are as teachers.

Methodology

Participants

A paper and pencil anonymous questionnaire was voluntarily responded by 573 teachers from the different educational levels in the state of Yucatan, Mexico. From these, 185 (32%) were males and 388 (68%) females. Teachers were on the average 32 (SD = 3.2) years old, with a modal seniority of 13 years in the school system. Almost half of them worked full time, a quarter of them worked half time, and the remaining quarter were teachers hired on an hourly basis. Teachers showed, in general, similar characteristics to teachers in other states in Mexico. Special fields of teaching were: Spanish language (23%), social sciences (32%), STEM subjects (20 %), Arts and Physical Education (5%), and others (20%). Table 1 depicts participants by gender and grade level taught.

Table 1. *Participant characteristics*

Primary		Junior High		High school		College		Total	
m	f	m	f	m	f	m	f	m	f
39	141	34	141	47	74	23	34	185 (32)	388 (68)
180 (31)		215 (38)		121 (21)		57 (10)		73 (100)	

Legend: m = males; f = females; (%)

Data collection and analysis

A questionnaire was designed asking for general demographic and labor information. In addition, teachers were presented a list of 15 teaching activities (Table 2). They were asked to rate the frequency of use in a six-point Likert scale. Cronbach Reliability coefficient was .766. Table 2 presents the table of specifications depicting the dimensions and items in each.

Table 2. *Dimensions of instructional strategies and corresponding survey items*

Dimension	Items
Critical Thinking Instructional activities that foster intellectually disciplined processes as the basis of learn	Students reflect upon their own work I posit questions to check if they had understood I make them express their thoughts
Classroom management Activities to create and maintain a structured and intentional learning environment	I present the Classroom objectives I promote order and discipline I administer tests to assess their learning
Differentiation Instructional activities that mean to account for variation in students' abilities, styles, and preferences.	I assign tasks according to the student capacity I check on individual differences I make groups according to abilities
Cooperative learning Classroom activities that attend to increasing social interaction and fostering academic and social learning experiences	I promote group-work They develop products to be used by others I promote group tasks
Independent work Instructional strategies that promote individual learning activities under control of the student	I check the homework I ask the students to work/use their textbook I assign long term projects

A confirmatory factor analysis allowed the establishment post-hoc of five factors/dimensions. These activities were clustered into 5 groups according to their factorial loads. Each dimension represented a categorical teaching strategy as described in Table 2, including the items clustered by this method. Finally, teachers were asked to self-assess in a six-point Likert scale: (1) how good they were as teachers and (2) how efficient their instruction was. Data were fed into SPSS version 20 for statistical analysis. Parametric testes were sued to explore for statistical significant differences.

Findings

Gender differences

Gender differences were explored using simple t–tests. Scores in each category of teaching strategy were pondered in a scale from 1 to 6 by dividing the mean score by the

number of items in each dimension, so everyone had the same directly comparable scale. Table 3 depicts the results of this analysis by gender.

Table 3. *Differences in teaching strategies by gender*

	Men (n = 165)	Women (n = 388)	t	p
Classroom management	4.23 (.56)	4.26 (.56)	.64	.69
Independent study	4.17 (1.2)	4.22 (.89)	3.19	.001*
Cognitive skills	3.91 (.61)	3.94 (.58)	.249	.265
Cooperation	3.74(.99)	3.75(1.03)	.126	.11
Differentiation	3.29 (.97)	3.27 (.88)	1.3	.62

Legend: M, (SD).

In general, classroom management seemed to be the major concern of these teachers. The only statistically significant difference in teaching strategies by gender was found in the analysis of independent study. Female teachers promoted more independent activities than males. No other statistically significant differences were found. In general, women showed higher scores than men across most teaching strategies. And when asked how good of a teacher they were, women tended to consider themselves better teachers than men ($t = 2.33$; $p = .027$).

Grade level differences

One-way ANOVAS were carried out to explore differences in the use of teaching strategies by grade level. Table 4 summarizes the results.

T**able 4**. *ANOVA: Teaching strategies by level of teaching*

Level Grade/years	Primary 1 -6	Secondary 7-9	High School 10-12	College ≥ 13		
n	181	214	121	54	F	p
Classroom management	4.32 (.56)	4.21 (.58)	4.22 (.52)	4.15 (.57)	1.68	.151
Independent study	4.35 (1.14)	4.13 (1.21)	4.17 (.53)	4.0 (.90)	1.76	.134
Cognitive skills	3.99 (.55)	3.85 (.61)	3.93 (.61)	4.04 (.58)	2.33	.055
Cooperation	3.89 (.99)	3.62 (1.04)	3.69 (.95)	3.76 (3.7)	1.79	.129
Differentiation	3.46 (.88)	3.23 (.86)	3.04 (.92)	3.4 (.93)	3.67	.001

Frequency of teaching strategies ranked similarly in every level. The only significant difference was in differentiated instruction that logically was more frequently used by primary school teachers. No statistically significant differences were found in college teachers that primarily work with graduate students with those who worked with undergraduates.

Teachers´ self-concept was the sum of two dimensions of perception: self-esteem and self-efficacy. The distribution of both measures, as expected, was skewed to the right, having 78% of teachers with a high self-perception and 22% with low self-perception. No differences in self-efficacy were found by either level taught (primary, secondary, high school, and college) or in the use of a teaching strategy. Regarding general self-concept as a teacher (how good of a teacher are you), there were significant differences in 3 of the 5 categories of teaching strategies, as depicted in Table 5.

Table 5. *Teaching strategies by level of self-concept*

	Low (n = 165)	High (n = 388)	t	p
Classroom management	3.96 (.60)	4.33 (.52)	6.75	.001
Independent study	3.95 (.69)	4.28 (1.06)	3.29	.001
Critical Thinking	3.73 (.59)	3.98 (.57)	4.32	.001
Cooperation	3.75 (.92)	3.72 (1.02)	.281	.779
Differentiation	3.20 (.97)	3.30 (.88)	1.08	.278

Legend: M; (SD); t = Student's t; p = alpha probability level.

This analysis showed that teachers with high self-esteem as teachers (that consider themselves good teachers) tended to carry out more student-centred teaching activities than teachers with high self-concept in three of the five dimensions under analysis: classroom management, independent study, and critical thinking. No other significant differences were found in these teachers when contrasted by training, experience, field of study, or type of school.

Discussion

The analysis of demographic information indicated that results data from this study could be extended to the average Mexican teacher/student. In general, few gender differences were found. The only teaching strategy that seemed to be different by gender was promoting independent study, with women teachers promoting independent study more frequently than men. This may be associated to women reporting interest in paying attention to students' homework, checking their homework, and the management of textbook and learning materials. Traditional gender roles in Mexico align with this finding reporting that women, in this case teachers, sometimes also mothers, tend to pay more attention to autonomous activities, such as homework, while men pay more attention to summative assessment, or grades (Sánchez & Martínez, 2016). However, this difference needs to be better studied by observational and other research strategies. The preference for Mexican female teachers to promote independent deserves further investigation.

Asking teachers to assess their own performance as teachers is not common practice in educational research in Mexico. Yet, we asked teachers about their feelings under the frame of self-concept, a traditional construct in school psychology, divided in two dimensions: their self-esteem and their self-efficacy. In both dimensions, we observed bi-modal presentation of results; nearly 80% of participants had a high self-perception and 20% a low self-perception. Overall, there seemed to be no differences in feelings of self-efficacy of teachers and the strategies they use. However, when analyzing the self-steam (how good of a teacher are you?) there were significant differences in the relationships with three of the five strategies. High self-esteem teachers reported more frequent classroom management, independent study, and the promotion of critical thinking skills than low self-esteem teachers. This is an interesting finding, because regardless of perception of effectiveness, those Mexican teachers considering themselves good were more like to use student-centred teaching strategies that desire to promote a positive learning environment. This suggests that low self-esteem teachers may have an external locus of control that imputes effectiveness to things other than teaching. This hypothesis, of course, deserves further empirical research.

Asking teachers what they do and how they feel in educational research is useful to collect empirical data about teachers themselves. Although this study approach is simple with direct variables, it generates important information to understand the teaching situation and teacher training in Mexico. Results, for example, indicated that teachers were most concerned with classroom management and promoting independent study, which goes against common teacher training programs in the country that that emphasizes cooperative learning and differentiation. Most importantly, the promotion of critical thinking skills – an aspect salient to many educational reforms and pedagogies – does not seem to be as a frequentist used strategy by teachers in Mexico. These results encourage a further study of critical thinking pedagogies in Mexico. Although we might anticipate more critical thinking pedagogies in high school and higher education, the data showed no differences in grade level. This needs to be further analyzed because of the developmental nature of high school and college-age students who are preparing for adult life.

Generally, teachers in Mexico were concerned with classroom management. This finding makes sense because teachers are concerned with facilitating their classrooms, viewing creating a positive learning environment as their primary responsibility. This permeated across gender and all levels of instruction. Interestingly, cooperation and differentiation seemed to be the least of teachers' concerns even though these topics are highly recommended in the literature and teacher preparation and training programs. Also, promoting critical thinking seemed to be in the middle, despite making students think or reflect is a challenge in current education.

When we examined teaching practices by grade level, the only difference was that primary school teachers focused more on differentiation than other teachers. This is logical given the developmental nature of young children. Educational challenges must be addressed among primary age students such that the students persist in school. In the absence of differentiation, students may drop out of school altogether. Differentiation in lower grades seems to be a logical finding considering development issues and the prevalence of learning problems in lower grades.

The fact that teacher´s self-esteem seems to be a better predictor of the use of student-centred teaching activities is ant interested one for two reasons. The first, relays on the fact that no significant differences were found by their feelings of self-efficacy, related to their perception of how efficient or effective these strategies are. However, teachers reporting higher sense of being a good teacher tend to use these strategies more often that those with lower feelings of teachers´ self-esteem.

Conclusion

In general, three major findings can be derived from the study. First, it can be concluded that female teacher tended to promote more independent study than their male colleagues. Second, differentiation of instruction seemed to be preferred by teachers of lower grade levels. The third finding was that teacher's self-esteem seemed to be a better predictor of student-centred teaching strategies which were used more often by teachers in lower grades. Research focusing in teachers' practices in developing countries continues to be a need, information yielded in this study may be important for improving teachers 'training programs and must be considered to implement educational policies that respond to both students and teachers concerns. Teaching is a profession in continues change, technological advancements, globalization, social equity movements and many other factors should promote educational researchers to focus their efforts in documenting how these external influences impact teacher perceptions and actions in the classroom.

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Measurement Model of Reasoning Skills among Science Students Based on Socio Scientific Issues (SSI)

MOHD AFIFI BIN BAHURUDIN SETAMBAH [1]

Abstract

The lack of reasoning skills has been recognized as one of the contributing factors to the declined achievement in the Trends in Mathematics and Science Studies (TIMSS) and Programme for International Student Assessment (PISA) assessments in Malaysia. The use of socio-scientific issues (SSI) as a learning strategy offers the potential of improving the level of students' reasoning skills and consequently improves students' achievement in science subjects. This study examined the development of a measurement model of reasoning skills among science students based on SSI using the analysis of moment structure (AMOS) approach before going to second level to full structured equation modelling (SEM). A total of 450 respondents were selected using a stratified random sampling. Results showed a modified measurement model of reasoning skills consisting of the View Knowledge (VK) was as a main construct. The items that measure the level of pre-reflection of students fulfilled the elements of unidimensionality, validity, and reliability. Although the level of student reasoning skills was still low but this development of measurement model could be identified and proposed teaching methods that could be adopted to improve students' reasoning skills.

Keywords

Reasoning skills, socio-scientific issues, independent knowledge, instrument development, measurement model

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Introduction

A country with good results and achievements in TIMSS and PISA can be considered a country with the best educational system in the world (Liou & Hung, 2015; Luschei, 2017). Conversely, if TIMMS and PISA results indicate a decrease, then a negative reflection is reflected on its education system. This is because the world Knowledge-Economy (K-Economy) competition requires the mastery of science, mathematics, and technology (Breiner, Johnson, Harkness, & Koehler, 2012). The decline in the number of students taking science and mathematics is not only happening in Asian countries, but also in other developed countries such as in United Stated, Canada, South Korea, and China. PISA 2009 and TIMMS 2012 results show that the number of American students taking science and mathematics subjects experienced a significant drop in K-economy competition, where this competition gave a great blow as there were four countries that led such as Finland, Canada, Korea, and China. Despite this problem, the same thing has happened in Malaysia (Tienken, 2013). Ironically, the education system in Malaysia is the same as the education system in another country - a system that emphasizes the development of strong knowledge content through subjects like science, mathematics and language. However, there is a growing global awareness that 3M's control (reading, writing, and counting) alone is not enough for students who leave the world of schooling. On the other hand, the focus given to the students is not only for the sake of acquiring knowledge, but also towards the higher level of thinking skills (KBAT) to produce the first-class students (Primary Education Report of Malaysia 2013-2025).

Based on TIMSS and PISA results for science subjects tested in 2006, 2012, and 2015, Malaysia is experiencing a decline compared to other developing countries. Even in 2015, the results of TIMSS and PISA experienced a slight increase, yet still did not reach the 500 points level in international achievement. Therefore, the emphasis on the need for reasoning skills should be given attention to students in Malaysia (Ministry of Education, 2013). Referring to the TIMSS and PISA questions tested, most questions require the mastery of the science concept associated with the student's daily life. Social scientific issues are used to focus on understanding the concept of science through observation, reading, and discussion that require high level thinking skills through analysis and synthesis skills. In teaching and learning, these thinking skills and analyses are known as reasoning skills (Bao et al., 2009). This skill enables students to make observations, inferences, and conclusions and can relate to the concepts taught through the existing curriculum (Dunbar & Klahr, 2012).

In this regard, the Ministry of Education has transformed education from pre-school level by introducing reasoning skills. According to the National Education Policy 2012, since 2011, the reasoning skills have been applied to pre-school students in order to provide the first-year students with creative and critical thinking skills. Therefore, the objective of this study was to develop a measurement model of reasoning skills that could explain the characteristics of students in Malaysia based on scientific socio-issues. The implications of this study can provide guidance on educational practices to improve the science curriculum, especially biological subjects. Hence, this study would answer the research question: Which is the model of reasoning skills that can explain the true characteristics of students in Malaysia based on socio-science issues?

Literature Review

Reasoning skills

Reasoning skill is a process that allows students to engage in problem solving skills and build a logical conclusion (Daempfle, 2012). During this process, pattern and level of reasoning can be measured by referring to the answers given. The answers can determine the level of the student's reasoning either at low, medium, or high levels. Accordingly, the choice of reasoning skills as an endogenous variable is able to identify the processes, stages, and patterns of our students making decisions. During the process of reasoning, cognitive constructivist theory was cited as the theory that was able to form students' cognitive constructivism (Piaget, 1976).

Other models involving the reasoning process are also given a priority during the discussion as it helps the researcher to identify and differentiate the student's reasoning. Among the models to be considered are reflective judgment (King, 1981; King, Patricia, & Kitchener, 1994) and relativist model (Perry, 1979). Siegler (2016) stated the stages of reasoning were divided into three levels, which are low (concrete), moderate (transitional), and high (formal). At a low level, the phase of concrete involves students to feel or observe the real situation for them to better understand the learning and concepts taught. While for the moderate level is the transitional process in which the student needs a command to do something after a student wants to feel or try first. At this stage, the students do not have intuition to conclude or implement hypotheses (Hogan, Dwyer, Harney, Noone, & Conway, 2015). At the highest point of action, the phase involved is formal. At this point, students are able to build and generate knowledge and want to test for clarification when they are faced with an ambiguity on given problems. Table 1 shows each available reasoning model and its comparison.

Table 1. *Comparison table of RS level*(Daempfle, 2012)

RS Level	Piaget	Perry	King & Kitchner
Low	Concrete	Dualism	Pre-reflective
Medium	Transitional	Multiplicity	Quasi-reflective
High	Formal	Relativisms	Reflective

Socio-scientific issues (SSI)

Science literacy can be linked to the skills of understanding, embedding, and applying. This is because science literacy involves the skills of scientific knowledge (Nuangchale, 2009). When focused on the subject of science, literacy becomes a necessary knowledge of understanding and clarification of the idea that is derived from the relevance of natural phenomena. Thus, in explaining the relevance of environmental phenomena and science, socio scientific issues play an important role in generating ideas for solving problems. Furthermore, the development of science and current issues are complementary (Oecd, 2011).

At present, the development of science is in line with technological developments. For that reason, the general understanding of the principles of science is very important in their daily lives. Communities need to be aware of issues affecting such as health issues and pollution issues as a result of human activities (Sadler, 2009). Hence, the problems associated with the phenomenon of science and with students' life can have an impact if the students are able to argue and give their opinions. In line with the questions from TIMSS and PISA, each student needs to know the scientific issues related to the subject matter, and can explain the scientific phenomenon that occurs and is capable of submitting scientific evidence. The study of Siegel and Ranney (2003) indicates that students agree that the concept of science taught can be linked to the phenomenon of the often-occurring scientific phenomena in their daily lives.

Indirectly, students can add the concept of science by doing activities that do not conflict with the issues discussed or observed the phenomenon occurring in their environment for certainty. According to Guzzetti, Synder, Glass, and Gama (1993), student's conception of scientific phenomena is based on observation and daily experience. After experiencing such a situation, this method can give students new ideas or concepts to think. This can prevent students from misunderstanding the concepts learned. This is because when a concept of science has been mixed in the students, it is difficult for them to change it even if a proper concept has been taught by the teacher (Hmelo-silver et al., 2007). The concept is usually developed on what has been seen and experienced.

A measurement model

The first step, in order to produce and obtain a matching model of measurement is through the construction of research hypotheses. Then, the value of uni-dimensionality, validity, and reliability is measured and analysed to determine the models fixed. According to Gallagher and Brown (2013), the measurement of model fixed to the data collection procedures that can develop the reliability of the full structured equation model (SEM). If the development of measurement model does not have matching data, then the steps to produce a fully structured equation model (SEM) are not worth for the study data (Byrne, 2013; Kline, 2011; Piaw, 2014; Zainudin, 2015).

The construction stage of the measurement model is also known as a validation factor analysis or confirmatory factor analysis (CFA). CFA is used to measure the consistency of items or significant indicator variables in the selected latent variable (Gallagher & Brown, 2013). Researcher also analysed the fitness indexes to ensure that the data constructed for the development of a structured equation model were matched. Zainudin (2015) states that what needs to be identified and measured in the validation factor analysis at this stage is uni-dimensional, convergent, construct, and discriminant validity and consistency of internal, construct, and average variance extracted (AVE). To measure uni-dimensionality, the correlation value on the factor loading of a low item will be removed. The load factor acceptance value is greater than 0.5 and above (> 0.5). Item removal can only be done on an item only and then the researcher needs re-specification to achieve the uni-dimensionality of the item. In addition, to measure the validity of the instrument that is what should be measured in each construct; there are three types of legality that must be fulfilled.

The first validity is the convergent validity to ensuring that all items are statistically significant with reference to the average variance extracted or AVE with a value greater than or equal to 0.5. The second validity is the construct validity which is looking at the value of validity when fitness indexes meet the Goodness of Fit Index (GFI) value of equal or greater than 0.90 (≥ 0.90), Then, the Comparative Fit Index (CFI) with the value equal to or greater than 0.90 (≥ 0.90). Next, the Root Mean Square Error Approximation (RMSEA) with the value equal to or smaller than 0.08 (≤ 0.08) and finally Chi square test (Chisq / df) with a value greater than 5.0. The third validity is the discriminant validity which refers to the state of legality independent of the items overlapping in the same contract or other contract.

Methodology

The data collection technique in this study was a survey. 450 respondents were selected in this study by using a two-stage stratified random sampling (Cragin & Shankar, 2006). The first stage was to use a simple random sampling of a state based on five zones (north, central, east, and south), the researcher determined the state of each zone using a simple random one state, and the states finally selected were Kedah, Perak, Terengganu, and Johor. As for the second stage was a simple random in order to determine the number of students in each state (Saunders, Lewis, & Thornhill, 2012). Table 2 shows the method to determine the number of respondents in this study.

Table 2. *Method to determine the number of respondents in this study*

Number of respondents	Number of students selected
North Zone (Kedah) 5,057	97
Central Zone (Perak) 7,168	138
East Zone(Terengganu) 2,462	47
South Zone (Johor) 8,761	168
Total: (Four Zones) 23,448	450

The instrument set used in this study was in the form of a written test to measure the level and pattern of scientific reasoning of science students based on socio scientific issues (Bell & Lederman, 2002). According to Bell and Laderman (2002), this instrument has a high degree of validity since it has passed the validity process of six experts -four science teachers and two scientists. The scenario questioned in this instrument is based on socio-scientific issues that can be used for biology subjects. The reasoning skill instrument has three different scenarios that discuss the issues of SSI adapted from Bell and Laderman (2002). The scenario is common queried and can be answered by the students stating the reason for their decision, in addition to saving time. This instrument refers to the dimension of reasoning which consists of three scenarios, the scenario I (climate change) and II (nutrition), there are five sub-questions and for scenario III (smoking and cancer), there are 3 sub-questions. Each question requires students set decided whether to agree or not and why? Because the answer that gets a high score rubric is the answer that needs justification, mechanisms, and

examples. Table 3 shows an example of scenario III through the issue of smoking and cancer were administered to students.

To analyse the questions to the students scientific reasoning skill, argumentation reasoning rubric complex analysis has been carried out (Tal & Hochberg, 2003; Zohar & Nemet, 2002). The section devoted to supporting each student's response to their arguments by stating the justification and by explaining the mechanisms that was showed in Table 4. Rubric given score will refer to the score level of RS. The same reasoning score level with a study conducted by Perry (1999) and King and Kitchner (1994) involving the RS scheme scoring in determining the level of reasoning is as shown in Table 5 (Lawson, 2004).

Table 3. *An example of scientific reasoning questions for Scenario III*

Scenario III	Many researchers believe that smoking accounts for a large proportion of all cancers and as much as 30% of all cancer deaths. Cigarette smoking has specifically been implicated as the cause of cancer of the lung, oral cavity, larynx, oesophagus, bladder, kidney, and pancreas. Additionally, the risk of developing cancer is greater for people who smoke more and who start smoking at a younger age. Furthermore, researchers believe that smoking may be the cause of 25–30% of all heart disease. Exposure to passive tobacco smoke is very likely a significant cause of cancer in non-smokers. Some scientists believe that the increased risk could be as high as 50%. It has been estimated that thousands of people die each year due to exposure to passive cigarette smoke. Recently, nicotine in cigarette tobacco has been identified as a drug whose addictiveness exceeds that of opium and heroin. In addition to this, documents have come to light that indicate that some tobacco companies have used a variety of methods to increase the amount and potency of nicotine in cigarette tobacco. Finally, it has been shown that many people begin smoking as teenagers, and once started, have a very difficult time quitting. In contrast to these claims, tobacco companies have consistently asserted that while tobacco may be associated with increased risk for various cancers and heart disease, it has never been proven to cause these diseases. Furthermore, to smoke or not is a free choice that should be up to the consumer, not government agencies.
Sub-questions	3a. Given the reported dangers of cigarette smoke and its addictiveness, should legislation be passed that would make cigarette smoking illegal? Why or why not? 3b. Would you support legislation that makes it more difficult for minors to obtain cigarettes and/or penalizes tobacco companies who target minors in their advertising? Why or why not? 3c. Do the alleged dangers of passive cigarette smoke justify banning smoking in public places such as restaurants and bars? Why or why not?

Table 4. *The schematic showing the score and answers to students' reasoning*

Scenario	Score	Reasoning score
I, II, & III	0	No answer or No justification in context of question
	1	One justification of decision: mechanism unelaborated
	2	Two or more justifications of decision: mechanisms unelaborated
	3	One justification of decision: mechanism explained with examples
	4	Two or more justifications of decision: one mechanism explained
	5	Two or more justifications of decision: multiple mechanisms explained

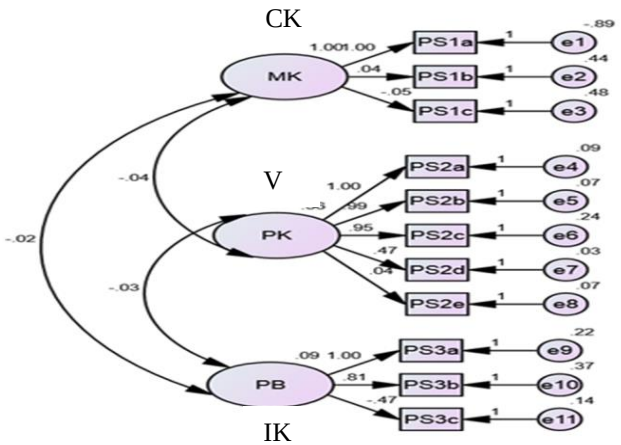
Table 5. *The score scheme and the level of reasoning skill*

Score	Level of RS
0-1	Level 1 (low – pre reflective)
2-3	Level 2 (medium – quasi reflective)
4-5	Level 3 (High – reflective)

Results

The research hypothesis tested for the measurement model of reasoning skills is: H1-the measurement model of reasoning skills has validity and has fixed with the study data. In this model there are three sub-constructs that measure RS as a result of the built EFA: view knowledge (VK), context knowing (CK), and independent knowing (IK). Figure 1 shows the measurement model of RS which is being constructed. This model was developed based on data from written test instruments. This measurement model of RS did not match with the study data. This model was not significant and the research hypothesis was rejected. There are six items that do not meet the criteria for subtracting, namely CK (PS1a, PS1b, and PS1c) and IK (PS3a, PS3b, & PS3c).

Figure 1. *The first measurement model of reasoning skills*



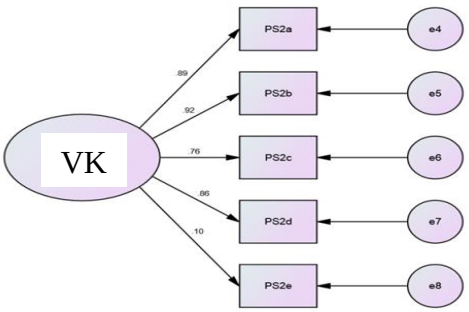
In table 6, sub-constructs that do not meet the requirements of uni-dimensionality, validity, and reliability through load factor assessment (PS1a, PS1b, PS1c, PS3a, PS3b, and PS3c). Whereas, the value of C.R in the sub-construct of CK is 3.165 and AVE = 3.221. While for IK, the value of C.R is 0.190 and AVE = 0.119.

Table 6. *The value of each substructure and item*

Variables	Sub constructs	Items	*Outer Loading* (>0.5)	Removed Items	C.R (≥0.6)	AVE (≥0.5)	AVE SQUARED
Reasoning Skills (RS)	Context Knowing (CK)	PS1a	3.08	removed	3.165	3.221	1.779
		PS1b	0.059	removed			
		PS1c	-0.07	removed			
	View Knowledge (VK)	PS2a	0.898		0.593	0.858	0.770
		PS2b	0.917				
		PS2c	0.758				
		PS2d	0.856				
		PS2e	0.096				
	Independent Knowing (IK)	PS3a	0.549	removed	0.190	0.119	0.435
		PS3b	0.377	removed			
		PS3c	-0.354	removed			

To ensure the measurement model of RS, six non-fixed items were removed. After six items from the CK and IK sub-constructs were removed, the modified measurement model of RS developed on the second was significant and fixed to the study data. Hence the hypothesis was accepted. Table 7 and Figure 2 show the acceptance measurement model of RS and the only remaining VK sub-contract with five items (PS2a, PS2b, PS2c, PS2d, & PS2e).

Figure 2. *The measurement model fixed to the study data*



The measurement model of RS fixed the study data is shown in the analysis through Table 7. The value of the five remaining items in the VK sub-constructs has been uni-dimensional

requirements of more than 0.5. While for the value of C.R is 0.593 mean that ≥ 0.6 and AVE is 0.858 which is ≥ 0.5.

Table 7. *Findings of the modified measurement model of RS was fixed to the study data*

Variable	Sub-construct	Items	*Outer Loading* (>0.5)	C.R (≥0.6)	AVE (≥0.5)	AVE SQUARED
RS	View Knowledge (VK)	PS2a	0.898	0.593	0.858	0.770
		PS2b	0.917			
		PS2c	0.758			
		PS2d	0.856			
		PS2e	0.096			

Discussion

In this study, reasoning skill is a process of generating grounds through generating ideas to solve problems (Voss, Perkins, & Segal, 2009). This RS represents the ability of students to engage in various empirical-inductive patterns of thinking to hypothetical-deductive thinking (Gerber, Cavallo, & Marek, 2001). This instrument was taken from the socio scientific issue of Bell and Lederman (2002), which had three major scenarios related to and 11 questioned items. It is the environmental issues such as nutrition, effects of cigarettes and cancer, and genetic engineering. The measurement model of RS which was developed on the second was valid and fixed the study data. The findings of the measurement model of RS illustrate to the researcher that students in Malaysia were not able to explain the process of claiming to more concrete by getting a simple reason and giving a less complete explanation. This model is parallel to the reflection model between Piaget (1976), Perry (1999), and King and Kitchner (1994) involving the level and pattern of reasoning. For Piaget (1976), the low level is known as concrete while Perry (1999) is known as dualism and King and Kitchner (1994) known as pre-reflection. This finding is different from Bhat (2016), the knowledge and context of teaching in science should have a significant relationship with what the student learns.

When measuring students' level of reasoning in this study, descriptive results shows 78% of students answer at a low level by giving a short answer without a detailed explanation (Ikhwan, Sadiah, & Eshah, 2017). The findings of Darus' (2012) study, based on the results of TIMSS and PISA indicate that students in Malaysia still have an inadequate attitude when answering questions, especially questions requiring longer reading or essay questions. In addition, students have become accustomed to short, structured, and multi-choice question formats on previous tests.

Conclusion

In conclusion, the development of measurement model of reasoning based on socio scientific issues is able to conform and identify the levels and constructs that need to exist

during the process of clarifying for science students especially in biological subjects. The study of Tal, Kali, Magid, and Madhok (2011), a solution to solving socio-scientific issues can expose students to the ability to understand and make students more active in class than passive through traditional methods. Compared to students in Malaysia, they are still unable to formalize and reflect on any questions raised. This implication actually allows students learn to be centralized. Students are free to give reasons for each question as long as they are able to argue in the classroom. There is no wrong answer from the student, can indirectly foster the process of reasoning. Students' learning strategies need to be diversified to make students more independent and share in getting information to build their own reasoning.

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