Vol. 3 No. 2, July 2019

e-ISSN 2548-8430
p-ISSN 2548-8422

International Journal of Indonesian Education and Teaching

IJIET

Published by
Institute for Research and Community Services
Sanata Dharma University

International Journal of Indonesian Education and Teaching	Vol. 3	No. 2	Pages 138-265	e-ISSN 2548-8430 p-ISSN 2548-8422

International Journal of Indonesian Education and Teaching (*IJIET*) is published by the Institute for Research and Community Services of Sanata Dharma University twice a year: in January and July. This journal publishes research and conceptual articles on education and teaching.

Editorial Address
Faculty of Teacher Training and Education (FKIP)
Universitas Sanata Dharma
Jl. Affandi, Tromol Pos 29, Mrican, Yogyakarta 55002, Indonesia
Telephone (0274) 513301, 515352, Fax (0274) 562383
Email: ijiet@usd.ac.id
Website: http://e-journal.usd.ac.id/index.php/IJIET

International Journal of Indonesian Education and Teaching
IJIET

Table of Contents

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

APPRAISAL OF INTERNET SERVICES USAGE BY SECONDARY SCHOOL TEACHERS FOR PROFESSIONAL DEVELOPMENT IN LAGOS, NIGERIA

Semiu Olawale Makinde and Hameed Olalekan Bolaji
Al-Hikmah University, Ilorin, Nigeria
somakinde@alhikmah.edu.ng and hobolaji@alhikmah.edu.ng
DOI: https://doi.org/10.24071/ijiet.2019.030201
received 29 May 2019; revised 17 June 2019; accepted 28 June 2019

Abstract
The study investigated the impact of internet services availability, accessibility and usage on secondary school teachers' professional development in Lagos, Nigeria. Before internet services can be useful, it must be available and easily accessible. The study adopted a descriptive design survey type. The researchers' made instrument tagged Internet Services and Professional Development Questionnaire (ISPDQ) was used to collate data. The instrument reliability coefficient was 0.79. 200 teachers were randomly sampled out of a population of 1,009 for the study from an educational district in Lagos state, Nigeria.188 questionnaires were properly filled and returned out of 200 administered which gave a response rate of 94%. Tables, charts, and percentages were used to answer the research questions. The outcome of the study shown that the available internet services in secondary schools are inadequate. The accessibility and usage of internet is a matter of concern. Hence, it was recommended among others that the public and private schools' owners should as a matter of necessity avail teachers in the schools with internet services and sponsors them on training and retraining programmes to enhance their professional development.

Keywords: internet services, accessibility, availability, professional development, teachers

Introduction
Over the years, so much has been discussed on the Internet, its use and application. Its dynamism requires that humans continue to upgrade and improve their knowledge of it. The latest information is available on the internet and can be accessed from anywhere in the world. Despite the importance of this resource in education, availability of it is not yet much felt in Nigerian Educational sector. In developed countries like the United States of America (USA) and Britain, cyber education has been given. Intensive moves have been made in Africa to pledge Internet Connectivity and technology training. These programmes linked institutions around the world for better educational standard (UNESCO, 2013).

Secondary school teachers' professional development in Nigeria has been in Arithmetical progression while that of the teachers in advanced countries are in geometrical progression. The reason is not hidden. According to Anao (2003), affirmed that the majority of teachers in higher institutions were not having access to the latest information on the globe due to the non-availability of the Internet. Those that are connected are not having access to it due to the erratic power supply, poor service delivery, and high cost of the subscription. So, the majority of the academic staff based their researches on journals, text and proceedings, which are not easy to get. It is not news that many establishments including educational institutions in under-developed and developing countries like Nigeria still keep records in files tucked away in file cabinets where they accumulate dust. At times, rodents and insects (cockroaches) rendered vital documents useless and irretrievable after eating up the files in the cabinets.

However, Onwuka, (2008) posited that the schools can be better managed through the Internet. The Internet has made it easy for academia around the globe to exchange knowledge and skills on various area of specialization and interest, and also permit learners and educators to communicate both locally and internationally (Luambano and Nawe, 2004). The idea of Internet availability and utilization in Nigeria commenced in 1991 when a few pioneering groups began to offer limited e-mail services (Eshekels Associates, 2001). The Regional Information Network for Africa (RINAF) in July 1995 kicked up Internet services at the Department of Computer Science, Yaba College of Technology, Lagos in conjunction with the Nigerian Postal Service (NIPOST). This was also in a collaborative effort with Rose Clayton Nigeria Limited (Adomi, 2005). The Internet services available at that time are email, telnet and gopher. Internet users then had to pay for both access, usage for sending and receiving e-mail messages through the billing system being based on the length of message being sent and time spent.

However, Yusuf and Onasanya (2004) defined ICT as electronic tools that aid individuals to work with the latest information and communication gadgets requires of an institute. The use of ICTs can offer a wide range of learning experiences that are adequate for learners' needs, aspirations, space, pace and learning styles as opined by Olorundare (2011). Makinde (2010) observed that since the world is encouraging the use of ICT in various areas of human endeavours, in order to transform Nigeria educational system, there is the need for internet resources not only as tools for information and communication but also as a field of study.

The advantages of using the internet services include: (a) accessing information easily, (b) getting accurate information at a glance, (c) promoting academic communication, (d) increasing the pattern of cooperation between students and between teachers/learners (Atiyah, El Sherbiny and Guirguis, 2015), (e) promoting students' ability to analyze problems (Makinde, 2017), (f) growing learners' learning charisma and promoting learners' self-confidence in internet service applications (Makinde, 2010), (g) Applied in highly populated classes (Bernard, Borokhovski, Schmid, Tamim and Abrami, 2014), and (h) encouraging good retention of material (Makinde, 2017).

However, the study by Bernard, Borokhovski, Schmid, Tamim and Abrami, (2014) opined that despite the advantages, internet service usage also has the following disadvantages: (a) need a quality internet connectivity (Rohs and Ganz, 2015), (b) requiring additional skills to operate internet applications, (c) lessen the teacher's role in material explanation and clarification, (d) lowering social relationships between teachers, students and parents because every individual feels independent (Atiyah, El Sherbiny and Guirguis, 2015; Rohs and Ganz 2015), and (e) requiring periodic and occasional maintenance to ICT gadgets like computers/laptops(Rohs and Ganz, 2015).

Furthermore, successful use of Internet by the teachers in secondary schools in Nigeria faces several impediments such as cost, poor infrastructure, lack of relevant software, limited access to the Internet and lack of skills. Though, there are Internet services providers that provide Internet gateway services to Nigerians, which made up of Nigerians who are in a business partnership with foreign investors. Majority of them provide substandard services to customers who are often manipulated and defrauded. The few known companies, which provide sensible services, are not affordable, this reduces access to Internet usage. This has been the greatest technological challenge in Nigeria. Up till this moment, the problem on how to lunch reliable and low-cost Internet connectivity in Nigeria still not getting the required solution.

High schools in Nigeria are not properly funded as a result, majority of them lack furniture, relevant books, good laboratories and learning conducive classrooms let alone being provided with high-tech equipment such as Computer gadgets and Internet service connectivity. Furthermore, the inadequate electric power supply mostly in rural communities, schools located in those areas cannot have access to Internet services and are totally cut off from the global technological development. All Internet providers are based in the urban areas where they believe their prospect is located in Nigeria. But schools are numerous and located in both rural and urban cities where the use of the Internet for teaching and learning in secondary schools is very important.

However, there is a range of applications of the Internet which can be of great benefit to teachers and learners in Nigeria. First, educational efficiency could be improved through the use of the internet. The various teaching subjects could be more simplified with the use of the internet. For instance, many public schools' teachers are handling large classes of students which is very difficult for them to manage. But with adequate availability and accessibility of internet services, it is possible to use learning technology package that will properly guide the learners in a systematic way with little instruction from the teacher without much stress on them like in Flipped Classroom (FC). According to Makinde (2017), flipped classroom is a strategy of teaching, if chosen at secondary schools, it can increase students' involvement in class activities, enhance student's confidence, promote cordial interaction between teachers and learners during learning period, this can work effectively with availability of the internet.

Research by Nnadozie and Nnadozie (2008) noticed that the availability of internet services does not mean that the information is accessible and usable because the problem of transmission, display and storage of information problem

have been joined with the problem of getting information to end users as fast as possible. Though electronic searching and bibliographic databases are now obtainable in almost every discipline which affirms that as information expands, the ability of the user to process it constantly (Seth and Parida 2006).

Availability, accessibility and usage of internet services are indispensable to the teaching, research and community work of teachers in any educational institutions. The internet services available in institutional information systems must be reliable and supportive in research activities that enhanced the professional development of teachers (Shokeen, and Kaushik, 2002). Similarly, Wisdom, (2012) opined that the Internet gives teachers the opportunity to access colleagues through e-mail, search engines, Facebook, WhatsApp etc.; easy access to a growing number of online journals and databases of various subjects.

Researches have shown that faculty of education academic staff in Nigeria Universities were the least experienced in the use of the internet (Jagboro, 2003 & Isah, 2005). If this can be the case of universities, the teachers in secondary schools cannot be left out. All these points to the fact that internet services are very important for effective teaching, learning and research activities in an academic environment which brings about the professional development of teachers.

The following objectives were raised for the study. The first objective is assessing the available Internet services in secondary schools for teachers' professional development. The second objective is examining the influence of the accessibility of the internet on the professional development of teachers in secondary schools. The last is investigating the level of use of the Internet by the secondary school teachers

The researchers then developed three research questions as follows:

1. Is there any relationship between the availability of internet services and professional development of secondary school teachers?
2. Is the accessibility of internet services influence the professional development of teachers in secondary schools?
3. Does the usage of internet services by secondary school teachers influence their professional development?

Method

The study adopted a descriptive design survey approach. This was to examine the availability, accessibility and usage of internet services on the professional development of secondary school teachers in Lagos, Nigeria. The research was conducted in Education District 1 in Lagos comprises of Alimosho, Agege and Ifako/Ijaiye secondary school teachers. The population of the study comprised all 1,009 teachers in Education District 1 in Lagos State. 200 academics were randomly sampled from the population with an average of 20 teachers from ten secondary schools that formed the sample size. It was a big task in getting a larger number because the majority of the teachers were sceptical.

The instrument constructed and used to elicit information from the respondents was the Internet Services Availability, Accessibility and Usage towards Professional Development of Teachers Questionnaire (ISAAUPDTQ). It

had three sections A, B and C. Section A tried to extract demographic data such as name, qualification, department and years of experience. Section B items carefully structured to obtain information on the availability and accessibility of internet services in secondary schools. While Section C contained items based on usage of internet services by secondary school teachers.

The instrument was subjected to face, construct and content validity by three experts in the department of educational technology, educational evaluation and computer science. Its reliability was ensured using a test-retest reliability method on a secondary school other than the sampled schools for the main study which gives 0.79 coefficient using Cronbach's Alpha. The value was measure up with the recommended criteria as stated by Ogunkola and Archer-Bradshaw (2013), that a benchmark of 0.7 is acceptable therefore, the questionnaire was reliable. Frequency counts and simple percentages were worked out to answer the research questions and presented in Tables.

Findings and Discussion

Research Question 1: Is there any relationship between the availability of internet services and professional development of secondary school teachers? Table 1 presents the outcome of the study as shown below

Table 1. Responses of teachers on internet services availability and professional development

Item	Response category			
	Yes		No	
	F	%	F	%
The school provides a laptop/computer for teachers	80.0	43.0	108.0	57.0
I own a personal laptop/computer	88.0	47.0	100.0	53.0
Internet is connected to my Laptop/Computer in school	68.0	36.0	120.0	64.0
Internet is connected to the teacher's office	57.0	30.0	131.0	70.0
Internet services available through personal mobile devices	49.0	26.0	139.0	74.0
Internet services connection is in my school library	70.0	37.0	118.0	63.0

Source: Fieldwork data

Table 1 contains analysed data on respondents on the availability of Internet services. 80 (43%) of the respondents said that the laptop/desktop computer available supplied by the school while 108(57%) of the respondents said the laptop/desktop were not supplied to teachers in the school. 88(47%) of the respondents have personal computers while 100(53%) of the respondents do not have personal computers. Among the respondents, only 68(36%) said that available systems are connected to the internet while 120(64%) said the systems available were not connected to the internet. However, 57(30%) of the respondents claimed that the school management provided internet services in teachers offices while 131(70%) said no. Hence, 49(26%) of the respondents said internet services were available through the personal mobile device while

130(74%) of the respondents did not. Also, 70(37%) of the respondents added that the internet available in the school library while 118(63%) of the respondents said the school library do not have internet. From Table 1, it showed that majority of the respondents do not have either personal or the school sponsored computers for use talk less of having internet connectivity.

*Research Question 2***:** Is the accessibility of internet services influence the professional development of teachers in secondary schools? Table 2 presents the outcome of the study as shown:

Table 2. Accessible of internet services in secondary schools by the teachers in Lagos

Item	**Frequency**	**%**
Very accessible	20	10.6
Slightly accessible	80	42.6
Not accessible	80	42.6
Not accessible at all	8	4.2
Undecided	-	-
Total	188	100

Source: Fieldwork data

Table 2 reports the analysed data from the respondents on the accessibility of Internet services. 80 (42.6%) of the sampled teachers reported that the Internet is slightly accessible. Similarly, 80 (42.6%) of the respondents stated that no accessible internet in their schools. Nevertheless, 20 (10.6%) of the respondents reported that in their schools, the internet is very accessible, but just 8 (4.2%) of the respondents stated that the internet is not accessible at all in their schools. There is a balance between the respondents who said that the Internet services slightly accessible and those that said that they are not accessible. However, those that said do not have access to the Internet at all are the minority.

*Research Question 3***:** Does the usage of internet services by secondary school teachers influence their professional development? Tables 3 and 4 present the outcome of the study.

Table 3. Responses of teachers on the use of the internet services in secondary schools for professional development

Response	**Response category**			
	Yes		No	
	F	**%**	F	**%**
I am linked to professional colleagues on the internet through various platforms	42.0	23.0	146.0	77.0
My mobile Phone/laptop/computer is my source of internet	68.0	36.0	120.0	64.0
I use internet conferencing to deliver the international paper	19.0	10.0	169.0	90.0
I have my own blog(s)	10.0	5.0	177.0	95.0
I am a member of the international journals through internet	49.0	26.0	139.0	74.0

Response	**Response category**			
	Yes		No	
	F	**%**	F	**%**
I subscribed to Khan Academy, Ed-tech, Edmodo, etc.	32.0	16.0	156.0	84.0
I do online marketing and shopping regularly	39.0	21.0	149.0	79.0
I send and receive mail on the internet regularly	120.0	64.0	68.0	36.0
I Browse for the information to write books	68.0	36.0	120.0	64.0
I browse for the information to supplement my lesson materials	19.0	10.0	169.0	90.0
I use the internet to gather information on the latest development in my teaching subject(s)	10.0	5.0	177.0	95.0
I use the internet to publish articles	49.0	26.0	139.0	74.0
I search for current awareness/update/ knowledge on the internet	42.0	23.0	146.0	77.0

Source: Fieldwork data

Table 3 shows that 68(36.0%) of the respondents use the internet on the mobile Phone/laptop/computer to browse for information to write books, while 19(10.0%) obtain information to supplement their lesson materials, and internet conferencing to deliver international paper. 42(23.0%) of the respondents used internet to connect with professional colleagues on the internet through the Facebook and to update their knowledge or for current awareness, 120 (64.0%) of the sampled teachers used it to send and receive messages online. Likewise, 49 (26.0%) of the respondents used it to be a member of the international journals, and publish article. 19 (10.0%) of the respondents used the internet to gather information for literature review, and create blog, while 32(16.0%) said that the internet services were used to subscribe to the educational websites like Khan Academy, Ed-tech, Edmodo and so on. 39(21.0%) of the respondents used the internet to shop and market online. The internet mostly used by the majority of the respondents for sending and receiving electronic mails according to the Table 3 above.

Table 4. Rate of use of internet services by the teaching staff

key	**Items**	**Not at all F (%) I**	**Daily F (%) II**	**Once a week F (%) III**	**Twice a week F (%) IV**	**Every Other Day F(%)V**	**Occasionally F (%) VI**
A	Yahoo, e-mailing /chatting, (www)	0(0)	101(53)	15(8)	20(11)	3(2)	49(26)
B	Goggle; knowledge search.	0(0)	119(64)	20(11)	3(2)	0(0)	46(23)
C	Cable/ instructional broad Casting	12(6)	0(0)	0(0)	0(0)	0(0)	176(94)

key	Items	Not at all F (%) I	Daily F (%) II	Once a week F (%) III	Twice a week F (%) IV	Every Other Day F(%)V	Occasionally F (%) VI
D	Hosting/ integrated hosting /home base hosting	179(96)	0(0)	0(0)	0(0)	0(0)	9(4)
E	Shopping / on-line marketing	69(37)	0(0)	8(4)	30(16)	0(0)	80(43)
F	Information link: job search Vacancy /recruitment.	0(0)	0(0)	0(0)	53(28)	0(0)	135(72)
G	Webbing	118(63)	0(0)	0(0)	0(0)	0(0)	70(37)
H	Conferencing	76(40)	0(0)	0(0)	0(0)	0(0)	112(60)
I	Downloading	0(0)	15(8)	108(58)	10(5)	15(8)	40(21)

Source: Fieldwork data

Table 4 shows that the majority of the respondents are using yahoo, e-mailing, world wide web (www) and Google with percentage respondents of 53 and 64 respectively. But Cable / Instructional broadcasting, Shopping / on-line marketing, Information links, Webbing and Conferencing are not commonly used but occasionally with percentage response of 94, 43, 72, 37and 60 respectively. The respondents of 28% use information links fortnightly. Downloading is usually used on weekly bases by 58% of respondents while 21% occasionally use it. Hence, Table 4 above indicated that yahoo, World Wide Web (www) and goggle are mostly used daily. While cable, information link and conferencing are occasionally used. Downloading is used once a week while hosting/integrated hosting/home base hosting and webbing are not usually put into use.

Availability of Internet Services in Secondary Schools in Lagos, Nigeria

The results as presented in Tables 1 and 2 shows that the internet services were not available in secondary schools in Lagos, Nigeria. Computers were not supplied to the teaching staff by the school management, few teachers that have personal computers were not connected to the internet. The internet services were not available in the offices for professional development of teachers. Most teachers banked on the personal mobile devices to connect to the internet. This finding agrees with Ezeoba, (2007); Fakeye, (2010) and Makinde, (2010); who also established that the internet services were not available in higher institutions. This situation could be explained by the fact that the educational institutions are not doing it right by not given adequate training to educators on the internet usage, hence the absence of the internet services in majority of the secondary schools because there are no trained personnel to use them.

Accessibility and Rate of Use of Internet Services in Secondary Schools in Lagos, Nigeria

The results from Tables 2, 3 and 4 showed that the rate of use of the internet services were very low in secondary schools in Lagos, Nigeria. The availability leads to accessibility of the internet services. The poor availability and accessibility of the internet services in secondary schools in Lagos, Nigeria also means usability will be thwarted for the professional development of teachers. This authenticates the observation of Ezeoba, (2007) and Fakeye, (2010) who also instituted that ICT resources (internet services) were unavailable in colleges of educations. This is also imputed to the failure of teacher training institutions whose products pass through the programme without adequate interaction with technology. Since their teachers are not internet compliant hence, they lack the technicality of the programmes in the primary and secondary schools' classes expected to teach.

This study also corroborates the observation of Jagboro, (2003) who also found that poor utilization of the Internet services by the Postgraduate students for academic researches associated with two factors: the low connectivity level, and high cost of cybercafé equipment. But, considering the huge academic resources available on the Internet and its benefits to education, it would be essential for all secondary schools' libraries in Nigeria to provide adequate access to the Internet as a way of enhancing books and journals collections for referencing.

Conclusion

It can be concluded from this study that, integrating the internet services in secondary schools will greatly improve the standard of education and encourages critical thinking of the learners towards their learning. This will also encourage the teachers to change their lackadaisical approach to daily professional exercises. As all interested parties in education demand for improved quality of education through the incorporation of internet in learning (FRN, 2013), the need to furnish secondary schools and their teachers with sufficient internet services resources, adequate training and skills is a necessity.

According to the findings of this study, it is recommended among others that the stakeholders in secondary schools should ensure that:

1. The internet services equipment like search interface, information and communication technology packages, and regular electricity supply should be provided in schools to power the facilities;
2. if the major stakeholder (Government) does not provide these, school management should look inward for alternative arrangements;
3. more internet service points should be provided at Zonal education districts, public libraries and schools. With this, more encouraging environment will be available for the use of the Internet for studies and researches; and
4. secondary schools' teachers should be encouraged to attend workshops, seminars and conferences on ICT and internet usage for professionalism in the area of teaching and learning.

References

Adomi, E. E. (2005). Internet development and connectivity in Nigeria. *Program: Electronic Library and Information Systems. 39*(3), 257-268.

Anao, A. R. (2003). Society, knowledge incubation and management. The http: informationR.net/ir104/paper237.html. Accessed on 11/10/06.

Atiyah, J. M., El Sherbiny, M. M., & Guirguis, S. K. (2015). Evaluation of E-Learning Program versus Traditional Education Instruction for Undergraduate. *International Journal of Advanced Research in Science, Engineering and Technology, 2*(7), 776-786.

Bernard, R. M., Borokhovski, E., Schmid, R. F., Tamim R. M. & Abrami, P. C. (2014). A meta-analysis of blended learning and technology use in higher education: From the general to the applied. *Journal of Computing in Higher Education, 26*(1), 87–122

Eshekels, A. (2001). *Trends in internet usage in Nigeria*. Lagos: Information and Communication Technologies (ICTs) Resource and Research Centre.

Ezeoba, K. O. (2007). Instructional media: An assessment of the availability, utilization and production by nursery school teachers. *Journal of Applied Literacy and Reading. 3* (Special Edition), 33-38.

Fakeye, D. O. (2010). Assessment of English language teachers' knowledge and use of Information and Communication Technology (ICT) in Ibadan Southwest Local Government of Oyo State. *American-Eurasian Journal of Scientific Research. 5*(4), 56-59.

Federal Republic of Nigeria. (2013). *National policy on education*. Yaba, Lagos: NERDC Press.

Isah, S. (2005). Extent of faculty members' use of internet in the University of Benin, Nigeria. *Journal of Instructional Psychology, 12*(1), 20-25

Jagboro, K. O. (2003). *A study of internet usage in Nigeria Universities: A case study of Obafemi Awolowo University, Ile-Ife, Nigeria, 8*(2), Available http://firstmonday.org/issues/issue8/2/jagboro/index/html Accessed on 02/02/06.

Luambano, I. & Nawe, J. (2004). Internet use by the students of the University of Dar es Salaam. *Library Hi Tech News. 10*, 13-17.

Makinde, S. O. (2010). Effect of availability and level of use of internet services on professional development of academic staff in tertiary educational institutions in Lagos state, Nigeria. Unpublished Master degree (M.Ed.) Thesis, Science & Technology Education Department, University of Lagos, 2.

Makinde, S. O. (2017). Effects of a Developed Flipped Classroom Package on Senior Secondary School Students' Performance in Mathematics in Lagos, Nigeria. Unpublished Ph.D. Thesis, University of Ilorin, Ilorin, Nigeria. 86-90.

Nnadozie, C. O. & Nnadozie, C. D. (2008). The information needs of faculty members in a Nigerian private university: A self-study. Library Philosophy and Practice. Available: http://www.webpages.uidaho.edu/~mbolin/nnadozie.htm. Accessed on 02/02/14.

Ogunkola, B. J. & Archer-Bradshaw, R. E. (2013). Teacher quality indicators as predictors of instructional assessment practices in science classrooms in secondary schools in Barbados. *Research in Science Education, 43*, 3-31. doi: 10.1007/s11165-011-9242-5

Olorundare, A. S. (2011). Utilization of Information and Communication Technology (ICT) in curriculum development, implementation and evaluation. In D. O. Durosaro & A. A. Adegoke (Eds.), *Higher education and globalization*. Ibadan: Sterling-Horden Publishers Ltd.

Onwuka, I. E. (2008). Information and Communication Technology (ICT) and Millennium Development goals; the Nigerian experience. In B. G. Nworgu (Ed). *Educational reforms and the attainment of the MDGs the Nigerian experience*. Nsukka: University Trust Publishers.

Rohs, M. & Ganz, M. (2015). MOOCs and the claim of education for all: A disillusion by empirical data. *International Review of Research in Open and Distributed Learning (IRRODL), 16*(6). Available at http://www.irrodl.org/index.php/irrodl/article/view/2033/3549

Seth M. K. & Parida, B. (2006). Information needs and use pattern of disadvantaged communities: A case study. *Library Philosophy and Practice 9 (1)*. Available at http://www.webpages.uidaho.edu/~mbolin/seth.htm Accessed on 02/9/14.

Shokeen, A. & Kaushik, S. K. (2002). Information seeking behaviour of social scientists of Haryana Universities. *Library Herald 40*(1), 29-30.

Siddiq, F., Gochyyev, P., & Wilson, M. (2017). Learning in digital networks ICT literacy: A novel assessment of students 21st century skills. *Computers & Education*, 109, 1137.

Siddiq, F., Scherer, R., & Tondeur, J. (2016). Teachers' emphasis on developing students' digital information and communication skills (TEDDICS): A new construct in 21st century education. *Computers & Education*, 92, 1-14.

UNESCO (2013). ICT in Education (Mobile Learning). Accessed October 10, 2013 from http://www.unesco.org/new/en/unesco/themes/icts/m4ed/

Usability.gov (2013). Usability Testing. Accessed on June 3, 2013 from http://www.usability.gov/how-to-and-tools/methods/usability-testing.html

Wisdom, I. J. (2012). ICT resource utilization, availability and accessibility by teacher educators for instructional development in college of education katsina-Ala. *Journal of New Media and Mass Communication*, 3, 2012. Available at http://www.iiste.org

Yusuf, M. O. & Onasanya, S. A. (2004). Information and Communication Technology (ICT) and teaching in tertiary institutions. Retrieved from http://www.unilorin.edu.ng

Yusuf, M. O., Makinde, S. O., & Malik, N. A. (2017). impacts of a developed flipped classroom package on gender and attitude of students of secondary school students towards Mathematics learning in Lagos, Nigeria. *ABACUS, (Mathematics Education Series) 42*(2), 225-234.

IJIET, e-ISSN 2548-8430, p-ISSN 2548-8422, Vol. 3, No. 2, July 2019

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

STUDENTS' ATTITUDE TO CONSERVE MEDICINAL PLANTS AND ENVIRONMENT IN CIPANAS: PROFILE AND COMPARATIVE ANALYSIS

Ilmi Zajuli Ichsan, Diana Vivanti Sigit, Rizhal Hendi Ristanto, Ilena Amalia Luthfi, Dewi Robiatun Muharomah, and Muhammad Efendi
Universitas Negeri Jakarta and Cibodas Botanical Garden,
Lembaga Ilmu Pengetahuan Indonesia (LIPI), Indonesia
ilmi.zajuli@outlook.co.id
DOI: https://doi.org/10.24071/ijiet.2019.030202
received 5 June 2019; revised 15 June 2019; accepted 29 June 2019

Abstract
Students' awareness in conserving medicinal plants and the environment is still the focus of discussion among educators. Especially in students at vocational school levels who do not receive comprehensive Biology learning. The purpose of this study was to measure students' attitudes in conserving medicinal plants and the environment. The research method used is descriptive method with survey techniques. The study was conducted in March-April 2019 at Cipanas State 1 Vocational High School, Cianjur, West Java, Indonesia. The sample used was selected by simple random sampling, obtained as many as 104 students divided into 44 male and 60 female students. The results showed that the average score of students' attitudes was 76.47. The indicator with the highest score is related to the program of planting medicinal plants in the home yard. While the lowest indicators relate to conservation policies for medicinal plants and the environment. This is because the information received by students in terms of conservation policy is still need to be improve. The conclusion of this study is that the scores of student attitudes regarding the conservation of medicinal plants and the environment are good, but in some indicators still need to be improved.

Keywords: attitude, medicinal plants, vocational school

Introduction
Public awareness in preserving the environment is still the focus of the problem that must be solved. Especially in terms of preserving plants and their habitat. The development of the city carried out, sometimes ignores the sustainability of these plants. This results in fewer green areas in a city. That is what makes people increasingly use the limited land to plant in their homes (Han & Yoon, 2015; Lazaridou, Michailidis, & Trigkas, 2018; Seebauer, Fleiß, & Schweighart, 2017).

One type of plant that is often planted in home gardens is medicinal plants. Usually, people plant ginger, turmeric, and other spices, but sometimes it is used

as a medicinal plant. This is usually done by people with adult age. Young people, in this case, students, are usually not very familiar with the benefits of medicinal plants. Moreover, these students usually live far from rural areas (Cooper, Larson, Dayer, Stedman, & Decker, 2015; Spinola, 2016; Takahashi & Selfa, 2015).

Schools, in this case, play a role in conveying information about the benefits of these medicinal plants to students. Topics regarding medicinal plants and their environment can be inserted through science learning. Information about medicinal plants, for students who attend high school senior level, may be more easily delivered. That is because at the Senior High School level (SMA), there is a face-to-face time to discuss plant morphology in Biology learning. Unlike students at vocational school (SMK) levels, they are very little at getting Biology material. The knowledge possessed by vocational school students is less likely than senior high school students (Gündüz, Alemdağ, Yaşar, & Erdem, 2016; Pangma, Tayraukham, & Nuangchalerm, 2009).

This is what underlies the measurement of student attitudes. This is because attitudes are related to knowledge. The attitude of students is also influenced by various factors, one of which is location or geographical location. Students who live in areas that are still relatively rural will have a better attitude than students who live in cities in conserve nature. As for schools that can be said to be still in rural areas if it is still easy to find paddy fields or plantations around the school (Avan, Aydinli, Bakar, & Alboga, 2011; Choudri, Baawain, Al-Sidairi, Al-Nadabi, & Al-Zeidi, 2016).

Previous studies conducted in the world on attitudes usually focused only on students in senior high school (Timur, Timur, & Yilmaz, 2013; Ugulu, Sahin, & Baslar, 2013). Besides that, it is usually also measured people's attitudes towards the environment (Braun, Cottrell, & Dierkes, 2018; Yeow, Dean, & Tucker, 2014). This makes this research give a novelty because in this study, a profile of students' attitudes in vocational school will be presented in terms of conserving medicinal plants and the environment. Based on the description above, the purpose of this study is to measure the attitudes of students at vocational school level in conserving medicinal plants and the environment.

Method

This study used descriptive method with survey technique, carried out in March-April 2019. The research location was at Cipanas State 1 Vocational High School (SMKN 1 Cipanas), Cianjur, West Java, Indonesia. This school was chosen because it is a school located in rural areas and one of the favourite schools in the Cipanas area. Students were selected by simple random sampling, obtained as many as 104 students divided into 44 male and 60 female students. The indicator instrument attitude used is based on Sugandini, Rahatmawati, & Arundati (2018) with a few modifications and adjustments. The instrument points used are as many as ten items that have been declared valid and reliable. The instrument grid can be seen in table 1.

Table 1. Grid of attitude instruments

No	Indicator	Item
1	Plant medicinal plants in the yard	1,2*,3
2	Conservation of medicinal plants	4,5*, 6*
3	Using medicinal plants as an alternative to treatment	7,8,9*,10*

Note: *item with a negative statement

The answer options for each instrument consist of strongly agreeing, agreeing, not arguing, disagreeing, and strongly disagreeing. There are four items that contain negative statements. This is useful to see the consistency of answers from students.

Findings and Discussion

Based on the results of the research data has been obtained, such as the table below. In table 2, the average attitude score of students is reviewed from each item. Based on table 2, it can be seen that the item has the smallest score is on item 10. While the largest item is in item 7. The total score of students' attitudes is 76.47 (after being changed to a scale of 0-100). The details of the average score of each indicator can be seen in table 3.

Table 2. Average student attitude scores have seen from each item

No	Item	All Students (n=104)	Male (n=44)	Female (n=60)
1	I prefer if the home garden is planted with medicinal plants	4.15	4.05	4.23
2	Planting medicinal plants will make the yard narrow and dirty *	3.86	3.66	4.00
3	If there is an empty neighbor yard, I advise him to plant medicinal plants/herb	4.05	3.91	4.15
4	I feel happy when the officers have the authority to punish people who damage the protected medicinal plants	4.30	4.20	4.37
5	All medicinal plants do not need to be protected because they will grow by themselves *	3.84	3.73	3.92
6	Planting herbs/medicinal plants require special treatment, that is not easy *	2.71	2.70	2.72
7	Use medicinal plants are more environmentally friendly than chemical drugs	4.41	4.41	4.42
8	Consuming native Indonesian medicinal plants means indirectly participating in preserving the culture	4.27	4.11	4.38
9	It's better to use chemical drugs because the effect is faster *	3.64	3.30	3.90
10	Consuming medicinal plants is not easier than consuming chemical drugs *	2.75	2.66	2.82

Note: each item has a score range of 0-5; *item with a negative statement

Table 3. Average student attitude scores seen from each indicator

No	Indicator	All Students (n=104)	Male (n=44)	Female (n=60)
1	Supporting the program of planting medicinal plants in the yard of the house	4.02	3.87	4.13
2	Supporting conservation policies for medicinal plants	3.62	3.55	3.67
3	Encourage the use of medicinal plants as an alternative for treatment/therapy	3.77	3.62	3.88

Note: each indicator has a score range of 0-5

Based on table 3, it can be seen that the indicator with the lowest score is in the second indicator regarding supporting the conservation of medicinal plants. This is because many vocational school students do not understand the importance of conserving medicinal plants. This is due to the lack of information that they can relate to the conservation policy of medicinal plants. Biology teachers in vocational school in this case can actually convey various information about these medicinal plants to students through various teaching materials and learning media (Ali & Arif, 2019; Blaschke, 2014; Bower, 2016; Fitriani, Adisyahputra, & Komala, 2018; Hidayati, Pangestuti, & Prayitno, 2019; Yusop & Sumari, 2013; Zhou, Lee, & Sin, 2017).

For example, it is using learning media in the form of documentary films containing summaries of the impacts caused by forest destruction, including the impact on medicinal plants. This can be done because students in rural areas find it difficult to find examples of natural damage around them. In contrast to students in urban areas who are very easy to damage the environment. This is the cause of the indicator regarding supporting this conservation policy to be the lowest (Jose, Gamarra, & Toombs, 2017; Strange, Jellesmark, Bladt, Wilson, & Rahbek, 2011).

While the highest indicator is obtained in the first indicator, namely supporting the planting program of medicinal plants in the yard of the house and around their environment. This indicator is the highest because students who were sampled in this study were students who lived in rural areas. This resulted in farming activities still easy to do because there was still a lot of land available (McCarthy & Liu, 2017; Nwankwoala, 2015; Sangroya & Nayak, 2017). Students can plant their medicinal plants that are needed in the yard. But the interesting thing is that when viewed from gender, the female attitude score on this indicator is greater than the score on students with the male gender.

This is because female students are more likely to care for plants than male students. Besides that, it is also caused by the habits of female students who often use various medicinal plants for cooking. This makes them plant their medicinal plants more often. While male students cook less frequently using ingredients from medicinal plants. Gender differences do affect attitudes towards the environment (Chouhan, Bhatnagar, Suman, & Kaur, 2017; Keles, 2017; Price, Kares, Segovia, & Loyd, 2018; Raman, 2017).

Then when viewed from table 2, the score on item 10 has the lowest score. This is because many students do not understand how to treat or use medicinal plants properly and correctly. That makes them tend to be lazy to use medicinal plants compared to chemical drugs. Though to process various medicinal plants to be used to cure diseases is not difficult. This becomes an evaluation in Biology learning. The teacher can introduce in a class by demonstration in a procedure on how to process and use medicinal plants. The teacher can practice this in front of the class so students can find out (Fisher-Maltese & Zimmerman, 2015; Sever, Yurumezoglu, & Oguz-Unver, 2010; Srisumra, Nontamolee, & Srijamon, 2014).

The highest point is in item 7. This can happen because students feel that even though they cannot process and use it, they think that medicinal plants, in general, are better to use than chemical drugs. Of course, this is caused by many factors, such as the incessant advertising of herbal medicinal products on television. These advertisements are an indirect form of socialization regarding the advantages of medicinal plants compared to chemical drugs. In general, student attitudes are in a good category because they get an average score of 76.47. But of course, there must be improvements in the future, especially in terms of material delivery using instructional media by teachers. Students who are in the vocational school level must also master various developments in science. Precisely by understanding a lot of things about medicinal plants and the environment, these students will be able to make medicinal plants as a business field, for example, to become a producer of herbal medicines (Aguilar-Salinas, Ojeda-Benitez, Cruz-Sotelo, & Castro-Rodríguez, 2017; Miller, 2018).

Conclusions

Based on the results of the study obtained an average score of students' attitudes in the conservation of medicinal plants and the environment is 76.47, this can be interpreted the attitude of students is good. While the indicator with the highest score is obtained on the first indicator, namely supporting the program of planting medicinal plants in the home yard with an average score of 4.02. The lowest indicator is in the second indicator, which is about supporting the conservation of medicinal plants with an average score 3.62. This is because the provision of information in the class is still relatively small. Even though understanding the topic of medicinal plants and environment well will make students after graduating from the vocational school create business opportunities. Also, the recommendation of this study is that a book on medicinal plants and the environment needs to be developed for secondary school (Junior High School, Senior High School, and Vocational School).

References

Aguilar-Salinas, W., Ojeda-Benitez, S., Cruz-Sotelo, S., & Castro-Rodríguez, J. (2017). Model to evaluate pro-environmental consumer practices. *Environments, 4*(1), 1–15. https://doi.org/10.3390/environments4010011

Ali, A. & Arif, W. P. (2019). Developing of guidance for laboratory practice of Islamic science-integrated plant anatomy-physiology. B*iosfer: Jurnal Pendidikan Biologi, 12*(1). Retrieved from http://journal.unj.ac.id/unj/index.php/biosfer/article/view/10655

Avan, C., Aydinli, B., Bakar, F., & Alboga, Y. (2011). Preparing attitude scale to define students' attitudes about environment, recycling, plastic and plastic waste. *International Electronic Journal of Environmental Education, 1*(3), 179–191. Retrieved from https://search.proquest.com/docview/1697487841?accountid=130632

Blaschke, L. M. (2014). Using social media to engage and develop the online learner in self-determined learning. *Research in Learning Technology, 22*(1), 1–23.

Bower, M. (2016). A framework for adaptive learning design in a framework for adaptive learning design in a web-conferencing environment. *Journal of Interactive Media in Education, 1*(11), 1–21. https://doi.org/10.5334/jime.406

Braun, T., Cottrell, R., & Dierkes, P. (2018). Fostering changes in attitude, knowledge and behavior: Demographic variation in environmental education effects. *Environmental Education Research, 24*(6), 899–920. https://doi.org/10.1080/13504622.2017.1343279

Choudri, B. S., Baawain, M., Al-Sidairi, A., Al-Nadabi, H., & Al-Zeidi, K. (2016). Perception, knowledge and attitude towards environmental issues and management among residents of Al-Suwaiq Wilayat, Sultanate of Oman. *International Journal of Sustainable Development and World Ecology, 23*(5), 433–440. https://doi.org/10.1080/13504509.2015.1136857

Chouhan, S., Bhatnagar, B., Suman, & Kaur, M. (2017). Assessment of environmental attitude of adolescent of Bikaner City. *Studies on Home and Community Science, 11*(1), 25–28. https://doi.org/10.1080/09737189.2017.1336308

Cooper, C., Larson, L., Dayer, A., Stedman, R., & Decker, D. (2015). Are wildlife recreationists conservationists? Linking hunting, birdwatching, and pro-environmental behavior. *Journal of Wildlife Management, 79*(3), 446–457. https://doi.org/10.1002/jwmg.855

Fisher-Maltese, C. & Zimmerman, T. D. (2015). A garden-based approach to teaching life science produces shifts in students' attitudes toward the environment. I*nternational Journal of Environmental and Science Education, 10*(1), 51–66. https://doi.org/10.12973/ijese.2015.230a

Fitriani, U., Adisyahputra, A., & Komala, R. (2018). Eco-friendly website development in biology learning based on project activities on environmental pollution. *Biosfer: Jurnal Pendidikan Biologi, 11*(1), 32–46. https://doi.org/https://doi.org/10.21009/biosferjpb.11-1.4

Gündüz, A. Y., Alemdağ, E., Yaşar, S., & Erdem, M. (2016). Design of a problem-based online learning environment and evaluation of its effectiveness. *The Turkish Online Journal of Educational Technology, 15*(3), 49–57. https://doi.org/10.1017/CBO9781107415324.004

Han, H. & Yoon, H. J. (2015). Hotel customers' environmentally responsible behavioral intention: Impact of key constructs on decision in green

consumerism. *International Journal of Hospitality Management, 45*, 22–33. https://doi.org/10.1016/j.ijhm.2014.11.004

Hidayati, N., Pangestuti, A. A., & Prayitno, T. A. (2019). Edmodo mobile: Developing e-module biology cell for online learning community. Biosfer: *Jurnal Pendidikan Biologi, 12*(1). Retrieved from http://journal.unj.ac.id/unj/index.php/biosfer/article/view/10813

Jose, M., Gamarra, C., & Toombs, T. P. (2017). Thirty years of species conservation banking in the U.S.: Comparing policy to practice. *Biological Conservation, 214*, 6–12. https://doi.org/10.1016/j.biocon.2017.07.021

Keles, O. (2017). Investigation of pre-service science teachers' attitudes towards sustainable environmental education. *Higher Education Studies, 7*(3), 171. https://doi.org/10.5539/hes.v7n3p171

Lazaridou, D., Michailidis, A., & Trigkas, M. (2018). Socio-economic factors influencing farmers' willingness to undertake environmental responsibility. *Environmental Science and Pollution Research*, 1–10. https://doi.org/10.1007/s11356-018-2463-7

McCarthy, B. & Liu, H. B. (2017). Food waste and the "green" consumer. *Australasian Marketing Journal, 25*(2), 126–132. https://doi.org/10.1016/j.ausmj.2017.04.007

Miller, A. L. (2018). The role of creative coursework in skill development for university seniors. *Global Education Review, 5*(1), 88–107.

Nwankwoala, H. N. L. (2015). Causes of climate and environmental changes: The need for environmental-friendly education policy in Nigeria. *Journal of Education and Practice, 6*(30), 224–234.

Pangma, R., Tayraukham, S., & Nuangchalerm, P. (2009). Causal factors influencing adversity quotient of twelfth grade and third-year vocational students Lalomwittaya School, Phusingh District, Sisaket Province, 33140 Thailand Department of Educational Research and Development, Faculty of Education, Mahas. *Journal of Social Sciences, 5*(4), 466–470.

Price, C. A., Kares, F., Segovia, G., & Loyd, A. B. (2018). Staff matter: Gender differences in science, technology, engineering or math (STEM) career interest development in adolescent youth. *Applied Developmental Science*, 1–16. https://doi.org/10.1080/10888691.2017.1398090

Raman, R. A. (2017). Attitudes and behavior of Ajman University of Science and Technology students towards the environment. *IAFOR Journal of Education, 4*(1), 69–88. https://doi.org/10.22492/ije.4.1.04

Sangroya, D. & Nayak, J. K. (2017). Factors influencing buying behavior of green energy consumer. *Journal of Cleaner Production, 151*, 393–405. https://doi.org/10.1016/j.jclepro.2017.03.010

Seebauer, S., Fleiß, J., & Schweighart, M. (2017). A household is not a person: Consistency of pro-environmental behavior in adult couples and the accuracy of proxy-reports. *Environment and Behavior, 49*(6), 603–637. https://doi.org/10.1177/0013916516663796

Sever, S., Yurumezoglu, K., & Oguz-Unver, A. (2010). Comparison teaching strategies of videotaped and demonstration experiments in inquiry-based science education. P*rocedia - Social and Behavioral Sciences, 2*(2), 5619–5624. https://doi.org/10.1016/j.sbspro.2010.03.916

Spinola, H. (2016). Environmental literacy in Madeira Island (Portugal): The influence of Demographic Variables. *International Electronic Journal of Environmental Education, 6*(2), 92–107. https://doi.org/10.18497/iejee-green.52941

Srisumra, J., Nontamolee, W., & Srijamon, S. (2014). Cooperative learning activities in arts of Prathom Suksa 4 Students Khon Kaen University Demonstration School Primary Section (Modindaeng). P*rocedia - Social and Behavioral Sciences, 112*, 677–682. https://doi.org/10.1016/j.sbspro.2014.01.1217

Strange, N., Jellesmark, B., Bladt, J., Wilson, K. A., & Rahbek, C. (2011). Conservation policies and planning under climate change. *Biological Conservation, 144*(12), 2968–2977. https://doi.org/10.1016/j.biocon.2011.08.022

Sugandini, D., Rahatmawati, I., & Arundati, R. (2018). Environmental attitude on the adoption decision mangrove conservation: An empirical study on communities in Special Region of Yogyakarta, Indonesia. *Review of Integrative Business and Economics Research, 7*(1), 266–275.

Takahashi, B. & Selfa, T. (2015). Predictors of pro-environmental behavior in rural American communities. *Environment and Behavior, 47*(8), 856–876. https://doi.org/10.1177/0013916514521208

Timur, S., Timur, B., & Yilmaz, S. (2013). Determining primary school candidate teachers' levels of environmental literacy. *Anthropologist, 16*(1–2), 57–67. https://doi.org/10.1080/09720073.2013.11891335

Ugulu, I., Sahin, M., & Baslar, S. (2013). High school students' environmental attitude: Scale development and validation. *International Journal of Educational Sciences, 5*(4), 415–424. https://doi.org/10.1080/09751122.2013.11890103

Yeow, P., Dean, A., & Tucker, D. (2014). Bags for life: The embedding of ethical consumerism. J*ournal of Business Ethics, 125*(1), 87–99. https://doi.org/10.1007/s10551-013-1900-2

Yusop, F. D. & Sumari, M. (2013). The use of social media technologies among Malaysian youth. P*rocedia - Social and Behavioral Sciences, 103*, 1204–1209. https://doi.org/10.1016/j.sbspro.2013.10.448

Zhou, Q., Lee, C. S., & Sin, S. C. J. (2017). Using social media in formal learning: Investigating learning strategies and satisfaction. P*roceedings of the Association for Information Science and Technology, 54*(1), 472–482. https://doi.org/10.1002/pra2.2017.14505401051

IJIET, e-ISSN 2548-8430, p-ISSN 2548-8422, Vol. 3, No. 2, July 2019

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

PRE-SERVICE TEACHERS' REFLECTIVE PRACTICES IN IMPLEMENTING THE SCIENTIFIC APPROACH OF 2013 CURRICULUM

Rina Astuti Purnamaningwulan
Sanata Dharma University
rina.ap@usd.ac.id
DOI: https://doi.org/10.24071/ijiet.2019.030203
received 29 April 2019; revised 29 May 2019; accepted 26 June 2019

Abstract
The pre-service teachers undertaking a teaching practice program (PPL – *Program Pengalaman Lapangan*) are demanded to implement the Scientific Approach, the underlying teaching practices in the 2013 curriculum (K13), in the schools where they conduct their teaching practice. The recent study aims to examine pre-service teachers' problems in implementing Scientific Approach during a teaching practice program as reflected in their reflective journal entries. Also, this study seeks to find out how the reflective journal can help them improve their capability in implementing Scientific Approach when teaching English. The participants of this research were four pre-service teachers doing a teaching practice program in SMAN 8 Yogyakarta. This research employed a descriptive qualitative approach. The data were collected from participants' reflective journal entries. From the study, it was found that participants encountered problems in implementing Scientific Approach in terms of maintaining student-centeredness in the teaching and learning process, engaging students' participation, maintaining students' focus, and applying the five learning stages based on Scientific Approach. Further, it was discovered that the reflective practice can help improve the pre-service teachers' skills in implementing Scientific Approach in their English teaching practices.

Keywords: pre-service teachers, reflective practice, Scientific Approach, 2013 curriculum

Introduction
To fulfill the global demands on more competent human resources, the government of Indonesia through the Ministry of Education continuously makes efforts to improve the quality of education in Indonesia. One of the efforts is through revising the national curriculum. The recent curriculum, the 2013 curriculum (thereafter K13) that was first established in 2013 is the development of the competence-based curriculum (*KBK-Kurikulum Berbasis Kompetensi*) in 2004 and the school-based curriculum in 2006 (Azizah, Ariwidodo, & Adriana, 2015). The curriculum was designed not only to develop students' competency,

but also to build students' characters and moral (Mulyasa, 2013). K13 is also expected to equip students with the future competency, i.e. communication skills, critical thinking and problem solving skills, as well as the ability to consider moral aspects of a problem (Kemdikbud, 2013, as cited in Zaim, 2017).

The development of K13 is aimed to respond the tougher competition in the global world through the development of learners' holistic potentials, namely cognitive, affective, which includes spiritual and emotional factors, and psychomotoric behaviors (Fadlillah, 2014). Therefore, it is hoped that with their holistic development, learners are able to compete and face the challenges of the rapidly growing global civilization.

In the implementation, K13 uses Scientific Approach as the main principle of the teaching-learning conduct (Abidin, 2014; Hosnan, 2014; Yani, 2014). According to Hosnan (2014), Scientific Approach is a learning process designed to make learners construct concepts actively through some steps namely observing, formulating problems and proposing hypotheses, gathering data, drawing conclusion, and finally communicating the new concepts that learners have found. In other words, in Scientific Approach, learners are engaged to construct knowledge actively through exploring various learning sources and teachers are not regarded as the only source of knowledge. Therefore, student-centered learning becomes one principle of Scientific Approach (Wangid, 2014; Darsih, 2018).

In the efforts to achieve the goals of K13, teachers are required to conduct the teaching-learning activities based on the five steps of Scientific Approach, namely observing, questioning, experimenting, associating, and communicating (Hosnan, 2014; Azizah, et al., 2015). The demand of applying the new approach has created a new challenge for teachers, as they are required to move from the traditional teaching paradigm to the more innovative one. Also, teachers need to have a good understanding on how to implement the approach appropriately in classroom practices.

Despite the fact that K13 has been implemented for over four years, English teachers at school levels still encounter problems, particularly in the application of the Scientific Approach. As teacher candidates who have only received minimum number of trainings as well as experiences, pre-service teachers are believed to also have problems in teaching using the Scientific Approach.

In relation with this, reflective practices have been constantly promoted particularly in teachers' training programs as it has been proven to benefit pre-service teachers in improving their teaching practices (e.g. Kuswandono, 2012; Ragawanti, 2015; Lee, 2018). Therefore, in this study, reflective journals with guided questions are adopted to accommodate the pre-service teachers' needs to reflect on their teaching and make plans for future improvements. Further, the pre-service teachers' reflective journal entries are beneficial to help answer the two research questions addressed in this study: 1) What are the problems encountered by some pre-service teachers during implementing the Scientific Approach in senior high school? 2) How can the reflective journal help the pre-service teachers improve their capability in implementing Scientific Approach when teaching English?

Literature Review

Scientific Approach is the main principle of conducting teaching and learning process within the K13. Unlike the more traditional point of view in teaching that highlights the transferring of knowledge, the Scientific Approach puts more emphasis on the discovery of knowledge (Ratnaningsih, 2017). Therefore, there are five stages that teachers need to implement based on the Scientific Approach principles, namely observing, questioning, experimenting, associating, and communicating (Hosnan, 2014; Azizah, et al., 2015). These five stages are performed in the teaching learning process in order to facilitate students in stimulating their intellectual development through student-centered learning activities (Ministry of Education and Culture, 2013).

There are several characteristics of Scientific Approach as elaborated by Hosnan (2014, p.36) including: 1) the application of scientific process in constructing new concepts, 2) the involvement of cognitive process, particularly the higher order thinking skills, 3) the development of students' character. In the cognitive aspect particularly, the Scientific Approach implementation is aimed to enhance students' higher order thinking skills (HOTS), namely analyzing, evaluating and creating skills as listed in the revised version of Bloom's taxonomy (Krathwohl, 2002).

As Scientific Approach is relatively new in Indonesia, the process of its implementation still meets some problems (Azizah, et al., 2015; Afrianto, 2017; Suyanto, 2018). Similarly, in the English Language Teaching context, Scientific Approach is considered as a new approach since its term is more likely to be associated with natural science, social science, and management (Suharyadi, 2013). In line with this, some research reports that there are problems in implementing the Scientific Approach in English, particularly the problems experienced by teachers. Azizah, et al. (2015) reported that some English teachers found it difficult to make students participate actively during the learning process. Consequently, the less active students cannot develop optimally, and they tend to be lagged behind the active students. Further, they also reported that the majority of the teachers had difficulties in motivating students to ask questions in the questioning stage. In other words, they had problems in growing students' curiosity on the learning materials. Another study conducted by Afrianto (2017) found that teachers feel dictated by the curriculum, which limits their freedom in teaching. Other than that, teachers also found problems in following the complicated assessment procedures mandated in K13.

The capability of implementing Scientific Approach also matters for pre-service teachers as they are candidates of future teachers. The practice teaching program (PPL) which is a compulsory subject for the English language education students aims to give the pre-service teachers the opportunity of doing professional preparations. One form of teachers' quality enhancement is through doing continuous reflection over their teaching practice performance. In fact, reflective practice has long been an important element in teachers' professional learning and development (Mathew, Mathew, & Peechattu, 2017). It becomes an effective way for student teachers to learn from their own professional experiences, rather than from any forms of formal learning. Thus, reflective

practice becomes an essential element of teaching as it can help students "see, evaluate, formulate, and reformulate" (Iswandari, 2017, p.60) their teaching experience.

The habitual reflective practice helps teacher candidates during the practice teaching program in a way that it encourages them "to think over and to examine their teaching, to connect the knowledge obtained to the on-going teaching practice" (Ragawanti, 2015, p.120). As they do this process, pre-service teachers are able to be more open-minded, thoughtful, and sensitive to their own learning process on becoming teachers. Through this, they will be more capable of identifying any teaching problems and therefore formulating the solutions to solve the problems.

Further, Kuswandono (2014) mentions some methods in which reflective practice can be performed by pre-service teachers, including "individual reflection through writing reflective journals, creating an artefact such as collage, reflecting through the facilitation of a mentor, or social reflection which is done by peers in a group" (p.187). In this study, the method employed to conduct reflective practices is individual reflective journal writing. Reflective journals are a kind of "annotated chronological record or a 'log' of experiences and events" (Wellington, 2000, p. 118). Through writing individual reflective journals, therefore, the pre-service teachers are expected to use their own interpretation to write their teaching experiences and eventually be able to have a deep reflection on them.

Method

This study adopted descriptive qualitative approach. Descriptive research is aimed to describe certain phenomena in particular settings fully and thoroughly (Fraenkel, Wallen, & Hyun, 2011), which also fits the nature of this study. Using a purposive sampling technique, this study's participants were four pre-service teachers who were the final-year students conducting teaching practice program (*PPL – Program Pengalaman Lapangan*) at SMA N 8 Yogyakarta in the odd semester of 2018/2019 academic year.

The data in this study were obtained from pre-service teachers' reflective journals. Throughout their practice teaching period, the pre-service teachers were required to write a post-teaching reflective journal in the form of narrative and they had to submit it every end of their teaching weeks. The journals were equipped with some questions in order to guide the participants in writing their reflections. Each participant submitted different numbers of journal entries since during the teaching practice program, they handle different numbers of classes. The numbers vary from two to five reflection journal entries per person. At the end of the teaching practice program, there were fifteen journal entries submitted in total.

The data were then analyzed by identifying the problems and obstacles related to participants' effort in implementing Scientific Approach in their teaching activities. After that, the problems were classified. The next step was analyzing participant's personal reflection to understand how they coped with the

problems and how the reflective journals could help them improve the way they implement the Scientific Approach in their teaching practices.

Findings and Discussion

This section elaborates the findings to answer the research problems. The first sub-section discusses problems encountered by pre-service teachers in the implementation of Scientific Approach. The second section is a discussion on how the reflective journals practice helps the pre-service teachers improve their capability in implementing Scientific Approach when teaching English.

Pre-service Teachers' Problems in Implementing the Scientific Approach Revealed in Their Reflective Journal Entries

After reading the participants' reflections, the researcher did thematic analyses to find the common themes regarding the problems encountered by the pre-service teachers. From the participants' journal entries, there are five identified problems related to the implementation of K13 Scientific Approach.

The first problem is regarding student-centeredness. The implementation of 2013 curriculum, in this case Scientific Approach should focus on student-centered learning, in order that students experience the opportunities to assimilate and accommodate new concepts and practice communication skills (Lazim, 2013, as cited in Zaim, 2017). The pre-service teachers, however, still found it problematic to create student-centered atmosphere when teaching. This is reflected in the following participants' journal entry.

> *To be honest, I didn't have much experience in this step (associating) because I 'feed' them with the material. ... I also realized that my teaching style is still teacher-centered and I need to change it into student-centered. I need to set some activities that make me less 'talky' and let the students explore themselves.* [participant 1, journal entry 1]

From this journal entry, it is seen that participant 1 realizes that she talked and explained too much instead of letting the students explore new concepts by themselves. One probable reason why it is difficult for the pre-service teachers to create a student-centered environment is that they are accustomed to experiencing the traditional way of teaching, which is still teacher-centered, where teachers usually become the only source of knowledge.

The second problem found in participants' reflective journal entries is related to the difficulty to engage or involve students in executing the 5 steps in Scientific Approach, especially in the stages of questioning, experimenting, and associating. The following journal entry represents this problem.

> *... I personally intended them to have such questions (for* menanya */ questioning section) like "what ocean is that?" or "where did that happen?" and so on, but no one did. After that, I asked them to give their opinion and share their feelings after watching the video. It worked, but I had to trigger them with questions first and they*

> *answered. After that, I gave them another video about asking and giving opinion and slides with the same topics that I have made. I asked them to analyze which one is asking and giving for* mencoba *(experimenting). I planned to have the students make a dialogue (in written form with certain topics that I have made. However, the students were not really involved. ...* [participant 4, journal entry 1]

Based on the journal entry above, the biggest challenge that the pre-service teacher encountered was motivating students to ask questions in the questioning stage. Even though she had showed a visual material in the hope to arouse students' curiosity, it seemed to be not really effective in making students ask questions. Further in other learning stages, the pre-service teacher also found it difficult to make students participate actively during the whole learning process. This finding is in line with Azizah et al.'s report (2015) related to students' low participation.

Similar to the problem stated above, getting students' attention and maintaining students' motivation is another issue. Sometimes they get distracted by other things, such as physical condition. The following journal entry portrays this problem.

> *In the beginning of the lesson, the students were not really involved in the lesson. They were somehow bored and tired because English is the last subject they had on that day. ... I think I should make more interesting games or anything in the set induction part to grab their attention.* [participant 4, journal entry 1]

Other than low stamina, students sometimes did not focus in the learning process because of the distraction from gadgets. Thus, the third problem reported by the participants is related to the improper use of smartphones by students in the classroom. Since the Scientific Approach in Curriculum 2013 promotes learners' empowerment in the learning process, it means that learners have the freedom to use any media and facilities for exploring and searching for information in order to understand certain concepts. Therefore, there are events when students are asked to search for information using their smartphones, for example in the questioning and experimenting stages. Nevertheless, in the activity using smartphones, another problem raises, as reflected in the following journal entry.

> *... the students' attention could not fully in me because of the Asian Games. When I asked them to browse (using their smartphone), one of the students yelled "CAH INDONESIA MENANG, JONATHAN CHRISTIE MENANG."...* [participant 2, journal entry 4].

> *... I think most of the students really pay attention to the lesson from the beginning. Only some of them (3-4 boys at the back of the class were not really involved because they were busy with their laptops and phones. However, when I asked the class to play Kahoot,*

> *everyone was really excited and the boys went back to being on task.* [participant 4, journal entry 2]

Allowing students to use their smartphones for study purposes is necessary in the context of Curriculum 2013 classes since students are expected to explore knowledge from various sources (Ministry of Education and Culture, 2013). However, it creates another challenge for teachers to make sure that students use their smartphones for learning purposes, not other purposes. In both journal entries above, students got distracted by their gadgets during the class. Instead of browsing for the necessary information regarding the new concept, one of the students was reported to use his smartphone to watch a sport competition. In another class, some students were reported to be using their gadgets not to support the learning process. As a consequence, teacher control is highly necessary to supervise and guide students in making use of smartphones during the learning process despite the fact that supervising more than thirty students at the same time is not an easy task. After all, it is undeniable that technology is needed to support the Scientific Approach-based classrooms.

Another problem found was regarding the implementation of the five learning phases based on the Scientific Approach, namely observing, questioning, experimenting, associating, and communicating. From the reflective journal entries, it was found that some of the pre-service teachers could not successfully implement the five stages in one meeting because of time management issue, and they regarded this as a significant problem. The following journal entry reflects this issue.

> *Because of my bad time management, I run out of time to review or check the students' answer, so we just checked the jumbled paragraph. Then, I asked them to collect their worksheet so that I will check it and give them notes if they make mistake.* [participant 2, journal entry 1]

In her journal, this participant reflected that her teaching did not run as planned. She planned the lesson until the communication stage, but she ran out of time. Consequently, the students did not get the opportunity to communicate the results of their group work, although communicating stage is crucial in demonstrating students' ability in presenting their development after a series of thinking process. In fact, not being able to execute the five stages of Scientific Approach in one meeting should not be a problem since teachers can always continue the process in the following meeting. However, for pre-service teachers, this becomes a problem since they do not have the opportunity to teach the same class in a row.

The fifth problem encountered by the pre-service teachers during implementing the Scientific Approach is that some of them apparently have incorrect understanding of the learning stages suggested in the Scientific Approach. The following journal entries portray this issue.

> *... for* mengamati *(observing), I can see most of the students pay attention to what I was explaining. For* menanya *(questioning), a few students asked the difference between some of the asking and giving opinion expression. For* mencoba *(experimenting), I picked 4 couples of students to practice expressing asking and giving opinion. For* menalar *(associating), I am not sure whether I have successfully implemented it in my class. Lastly, for* mengkomunikasikan *(communicating), I asked students to explain to me what I have explained earlier that day.* [participant 3, journal entry 1]

From the journal entry above, it can be seen that the pre-service teacher reflected that she was not sure about her implementation of associating stage. In this case, she realized that she had not got a deep understanding on what learning activities should be provided in a particular stage of the Scientific Approach. On the other hand, even though the pre-service teacher did not explicitly mention her lack of understanding, it was implied from the reflection that she provided an unsuitable activity in the communicating stage. Here, the nature of communicating stage seemed to be misunderstood. The Communicating stage, in fact, needs to accommodate students in presenting the product of their analysis during the advance stage, which is associating (Sarwanti, 2016). Therefore, in communicating stage, students are not only asked to retell what they have learned on a particular day. Instead, further than that, students need to demonstrate the product built upon their understanding on certain concepts. In communicating stage, Hosnan (2014) emphasizes that students are expected to present the results of the conceptualization process in the form of spoken, written, or other uses of media. One example of activity in the communicating stage is when students present their findings or in front of the teacher and classmates, and other non-presenting students are to give comments, advice, or any forms of feedback as a process of mutual learning.

How reflective journals help the pre-service teachers improve their capability in implementing Scientific Approach to teach English

This section elaborates the answer of the second research question. In order to investigate the reflective journal practices on pre-service teachers' implementation of Scientific Approach, an adaptation of a scheme offered by Ragawanti (2015) is used. The modified scheme used in this research consists of two stages. The first is identifying the teachers' problems related to the implementation of the five stages in Scientific Approach, which has been done to answer the first research question. The second is seeing how the pre-service teachers come up with strategies to handle the problems as facilitated by the reflective journal entries. In the second stage, it is hoped that particular improvements are identified after the examination of reflective processes.

As revealed in the first section of the findings, the first problem is regarding how to create student centeredness. Participant 1's first journal entry portrays this problem. It can be seen from her first journal entry, participant 1 reflected some difficulties in making the students the center of learning. In response to this

problem, she tried to give more opportunities for the students to do their part. The following is the excerpt of her reflective journal entry.

> *I went better by using student-centered method to teach. Before, I use teacher-centered method. (now) I manage to make students find the formula of using intention by themselves.* [Participant 1, journal entry 2]

In her first class, the pre-service teacher admitted that she "feeds" the students with the knowledge. After looking back at her teaching practice, she knows that she needs to eliminate that, and she managed to let her students find a concept by themselves in the second meeting. Here, it is obvious that the participant succeeded to cope with the problem since she kept on reflecting her teaching practice. In short, the participant gained improvement in shifting the teaching from teacher-centered method to student-centered method.

According to the findings in the previous section, one factor causing the unsuccessfulness of implementing the five stages of the Scientific Approach is pre-service teachers' time management issue, for example as experienced by participant 2, as reflected in her first journal entry. To cope with this problem, she managed to improve her time management skill as portrayed in the following journal entries:

> *... for the upcoming teaching, I would be more and more pay attention to my time management and how to be calmer.* [participant 2, journal entry 2]

> *... I learned how to handle the class, the real class management. I learned how to be creative to maximize the time management.* [participant 2, journal entry 4]

As it is shown in the reflective journal entries, in this case, writing reflective journals helps the pre-service teacher to examine her practices. From her second and fourth journal entries, it can be seen that she continuously examined her progress on time management matter, and at last found that she had improved herself in this matter.

Other problems in the implementation of Scientific Approach as reported in the previous section are the difficulty to involve students in the activation of knowledge during the implementation of Scientific Approach, and the improper use of smartphones or other gadgets that distracts students' focus during learning. Participant 4, who experienced this problem as shared in her first reflection entry, did further reflections on the way she tried to cope with this problem. The following journal entries portray how participant 4 gradually reflected on this matter.

> *... One thing that went pretty well was my teaching media. They liked playing Kahoot, it was new and fun for them. I did not expect they would be really enthusiastic to have this game. I think I should have or make more fun games like this to make the students engaged.* [Participant 4, journal entry 2]

> *... I think I could deal with misbehaved students better than in my previous teaching practices. I also tried to use another technology (lyrics training) to be the learning tool. I will try to explore more media to make my teaching better and more interesting.* [Participant 4, journal entry 4]

From the reflective journal entries above, it is seen that she found an effective way to engage her students, which is by using fun games, named Kahoot. Further, she continued reflecting on the same matters repeatedly, until she found out that varying the teaching media could make her teaching more interesting, and thus could engage the students better. In this case, the pre-service teacher learned positive things that could help her enhance her teaching performance.

Besides the problem of having to gain students' focus during learning activities which participant 4 has successfully coped with, she also wrote in her reflection that she found it difficult to make students active in the process of building knowledge, for example in the questioning and experimenting stages. However, unfortunately, participant 4 did not write any further reflection dealing with her actions in coping with that problem. As a consequence, whether or not the problem has been successfully solved remains unknown.

Conclusion

Despite having been implemented for over five years, the implementation of 2013 curriculum (K13) is still challenging, particularly for pre-service teachers. Through the investigation of reflective journals, this small-scale study has revealed the problems encountered by pre-service teachers in presenting the five stages of Scientific Approach as mandated in K13. In coping with these problems, the reflective journals writing was performed to facilitate the pre-service teachers in doing reflective practices on their teaching performance. Some positive contributions of writing reflective journals were revealed in this research. The result shows that writing reflective journals helps the pre-service teachers look back to evaluate their teaching performances, discern their problems, as well as formulate and provide solutions to solve the problems.

Reflective practice is proven to have improved the pre-service teachers' pedagogical skills, particularly in implementing the Scientific Approach. This finding implies that having pre-service teachers conduct reflective practices is still relevant; therefore, its implementation should be accentuated in any teacher preparation programs. A further challenge that educators should pay attention to is on making sure that the reflections student teachers write are meaningful, rather than just becoming a repetitive habit that yields no values. The evaluation of

current existing practices of reflection and the creation of more innovative reflection method and media should become the concern of future research.

References

Abidin, Y. (2014). *Desain sistem pembelajaran dalam konteks kurikulum 2013*. Bandung: PT Refika Aditama.

Afrianto. (2017). The implementation of scientific approach for teaching English in senior high school: Voices from the field. *Advances in Social Science, Education, and Humanitites Research, 110*, 186-191. doi: 10.2991/iselt-17.2017.33

Azizah, S., Ariwidodo, E., & Adriana, I. (2015). Implementasi pendekatan *scientific* dalam pengajaran Bahasa Inggris kurikulum 2013 di SMPN 1 Pamekasan. *OKARA, 2*, 296-315. doi: 10.19105/ojbs.v9i2.688

Darsih, E. (2018). Learner-centered learning: What makes it effective? *Indonesian EFL Journal*, *4*(1), 33-42. DOI: 10.25134/ieflj.v4i1.796.

Fadlillah, M. (2014). *Implementasi kurikulum 2013 dalam pembelajaran SD/MI, SMP/MTs dan SMA/MA*. Yogyakarta: Ar-Ruzz Media.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2011). *How to design and evaluate research in education*. New York: McGraw-Hill.

Hosnan. (2014). *Pendekatan saintifik dan kontekstual dalam pembelajaran abad 21: Kunci sukses implementasi kurikulum 2013*. Bogor: Ghalia Indonesia

Iswandari, Y. A. (2017). Revealing pre-service foreign language teachers' imagined professional identity in reflective journal. *Language and Language Teaching Journal, 20*(1), 59-67. doi: https://doi.org/10.24071/llt.2017.200107

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory into Practice, 41*(4), 212-218. doi: 10.1207/s15430421tip4104_2

Kuswandono, P. (2012). Reflective practices for teacher education. *LLT Journal, 15*(1), 149-161. doi: https://doi.org/10.24071/llt.2012.150102

Kuswandono, P. (2014). Voices of pre-service English teachers: Reflecting motivations during practicum learning. *TEFLIN Journal*, *25*(2), 185-202. doi: http://dx.doi.org/10.15639/teflinjournal.v25i2/185-202

Mathew, P., Mathew, Pr., & Peechattu, P. J. (2017). Reflective practices: A means to teacher development. *Asia Pacific Journal of Contemporary Education and Communication Technology, 3*(1), 126-131. Retrieved on April 29, 2019 from https://apiar.org.au/wp-content/uploads/2017/02/13_APJCECT_Feb_BRR798_EDU-126-131.pdf

Ministry of Education and Culture. (2013). *Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia nomor 65 tahun 2013 tentang Standar Proses Pendidikan Dasar dan Menengah.* Retrieved on April 29, 2019 from http://bsnp-indonesia.org/id/wp-content/uploads/2009/06/03.-A.-Salinan-Permendikbud-No.-65-th-2013-ttg-Standar-Proses.pdf

Mulyasa, H. E. (2013). *Pengembangan dan implementasi kurikulum 2013*. Jakarta: Rosda.

Ragawanti, D. T. (2015). Cultivating pre-service teachers' classroom management skills through teaching practicum: A reflective practice. *TEFLIN Journal 25*(1), 117-128. doi: http://dx.doi.org/10.15639/teflinjournal.v26i1/117-128

Ratnaningsih, S. (2017). Scientific approach of 2013 curriculum: Teachers' implementation in English language teaching. *English Review: Journal of English Education, 6*(1), 33-40. doi: 10.25134/erjee.v6i1.768.

Saefuddin, H. A. & Berdiati, I. (2014). *Pembelajaran efektif*. Bandung: PT. Remaja Rosdakarya.

Sarwanti, S. (2016). Scientific method in English language teaching. *Transformatika 12*(1), 60-75. Retrieved on October 28, 2018 from jurnal.untidar.ac.id/index.php/transformatika/article/view/200/152.

Sofyan, A. (2016). The implementation of Scientific Approach in English teaching based on curriculum 2013 in SMK Negeri 2 Sragen in the academic year of 2015/2016 (A master's thesis, Universitas Muhammadiyah Surakarta, Indonesia). Retrieved on October 28, 2018 from eprints.ums.ac.id/47342/32/Naskah-Publikasi-ali.pdf

Suharyadi. (2013). Exploring "scientific approach" in English language teaching. Prosiding 2 seminar nasional exchange of experiences, Malang, 1348–1355.

Suyanto, S. (2018). The implementation of the scientific approach through 5Ms of the revised curriculum 2013 in Indonesia. *Cakrawala Pendidikan, 37*(1), 22-29. doi: 10.21831/cp.v37i1.18719

Wellington, J. (2000). Educational research: Contemporary issues and practical approaches. London: Continuum.

Wangid, M. N. (2014). *Student-centered learning: Self-regulated learning.* International Conference on Fundamentals and Implementation of Education (ICFIE) 2014. ISSN 2406-9132

Yani, A. (2014). *Mindset kurikulum 2013.* Bandung: Alfabeta.

Zaim, M. (2017). Implementing scientific approach to teach English at senior high school in Indonesia. *Asian Social Science, 13*(2), 33-40. doi: 10.5539/ass.v13n2p33

IJIET, e-ISSN 2548-8430, p-ISSN 2548-8422, Vol. 3, No. 2, July 2019

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

FUN PIANO LESSON FOR YOUNG BEGINNERS STUDENTS IN SURABAYA INDONESIA

Yulisetiana
Universitas Negeri Surabaya
yulisetianaa@gmail.com
DOI: https://doi.org/10.24071/ijiet.2019.030204
received 20 May 2019; revised 10 June 2019; accepted 27 June 2019

Abstract
Learning piano is not an easy thing, more over for young beginner learners. The teacher off course not only giving materials to students, but also considering the approach given to the young beginner students. The teacher is also needed to be creative, and always developing the ability in techniques and approach to children. This study tried to discuss about how to make piano lessons fun. This research method uses grounded research with a focus on theoretical studies on piano learning through the views of piano experts, including Dalcroze, Suzuki, Schulwerk, and Kodaly. After that, the data is analyzed using content analysis. The results of the study showed that by exploring the viewpoint of Dalcroze, Suzuki, Schulwerk, and Kodaly piano learning, art learning must be set pleasantly by the teacher. The role of the teacher and student must also have a good relationship, because in pleasant learning, an effective correlation between learning materials, teachers, and students is needed.

Keywords: fun piano lesson, young beginners, music education

Introduction
Paul Harris and Richard Crozier said in their book The Music Teacher's Companion that recent research suggests that everyone is born with some embryonic kind of musical intelligence (Harris & Crozier, 2006). Good news people, everyone is born with the capacity to play music because intuition and musical abilities (Heru, 2016). Mostly kids are interest to play the keys on the piano, even though they have not learned to play it before. But what happen when they start to take the piano lesson. They usually will easy to getting bored and tired of having too long sit, and reluctant to practice every day. Music classes contributed to preservice educators' preparation, but findings indicated that participants did not recognize these as actual preparation (Cassidy & Powell, 2014).

Commonly the children have perception that studying piano is hard and boring. It could be right if the teacher can't make the piano lesson fun. Being a great teacher doesn't happen by accident. Teachers become great through care, planning, hard work, skill, imagination and through the continuing desire for personal improvement (Harris & Crozier, 2006). Philosophers throughout the ages

have had remarkable insights into the nature of humanity; they have been forever going back and rethinking old ideas, often clothing them in new dress, and transforming them for their own times (Jorgensen, 2014). Teaching beginners is the very important moment to instill the right concept and foundation in learning music, especially teaching young beginners which need special approach and handling.

Teachers often forget that children love playing, games, singing, have a strong imagination, and like physical activities. Teachers should understand the common condition of children, and should attempt to make the music lessons fun and enjoyable for them (Chandler & Russell, 2012). A discussion of the roles and characteristics of the music teacher was commonly included in course descriptions as were references to observations or in-school field experiences. For instance, one school seeks to "[e]xplore . . . the skills, characteristics and attributes of the musician teacher" and another focuses on the "[d]evelopment of philosophical foundation for music education profession; values, attitudes and work habits of the effective teacher" (Mishra, Day, Littles, & Vandewalker, 2011). Children will have limited powers of concentration and will usually only be able to concentrate on one thing at the time (Harris & Crozier, 2006). Music education should not to traditional learning process although raditional music education is not unchanging, except perhaps in some particular settings of diaspora and relocation (Wiggins, 2015). Children learn abilities best when they are having fun (Suzuki, 1981). There are a lot of things that need to be considered in teaching young students to make them able to enjoy the lesson, as well as will develop their ability all at once. Teachers must be careful in selecting the materials to use in the lesson adjusted with the need of each students beside providing the proper instruments as well as save and comfortable lesson room (Jorgensen, 2010). The books with interesting and colorful pictures usually will make the children attracted, completed with other devices such as flash cards and musical toys to support the lessons (Litterst, American, Teacher, & May, 2006).

Method

The method used is the study of theory from experts in music education, namely Dalcroze, Suzuki, Orff Schulwerk, and Kodaly. The theory of experts is used because it is considered to have criteria in research related to music education that can be explored with fun learning methods implemented by researchers.

Eurhythmics Dalcroze.

The Dalcroze method, also known as Dalcroze Eurhythmics, is an approach used by educators to teach musical concepts. Emile Jaques-Dalcroze, a Swiss educator, developed the method to teach rhythm, structure, and musical expression through music and movement (Burrows, 1947). Eurhythmics begins with ear training, or solfege, to develop the inner musical ear. This differs from Kodaly's use of solfege in that it is always combined with movement. The method is believed more complex than others, and also make student more confident when playing music (Miksza, 2013). Another component of the method concerns

improvisation, which helps students sharpen their spontaneous reactions and physical responses to music. At the heart of the Dalcroze philosophy is that people learn best when learning through multiple senses. Dalcroze believed that music should be taught through the tactile, kinesthetic, aural, and visual senses.

Suzuki

The Suzuki method is an approach to music education that was introduced in Japan and later reached the United States during the 1960s. Japanese violinist Shinichi Suzuki modeled his method after a child's innate ability to learn their native language. He applied the basic principles of language acquisition to music learning and called his method the mother-tongue approach. Incorporating Taylor's idea of integrative levels of analysis in our o model allowed us to refer to foundational disciplines indirectly while al the systems approach exemplified by physiological, psychological, socio-cultural, and historical integrative levels of analysis that were in this period (Jorgensen & Ward-steinman, 2015). Through listening, repetition, memorization, building vocabulary—like language, music becomes part of the child (Suzuki, 1981). In this method, parental involvement is helpful to a child's success through motivation, encouragement, and support. This mirrors the same type of parental involvement that helps a child learn the fundamentals of their native language. Parents often learn the instrument along with the child, acting as musical role models, and maintaining a positive learning atmosphere for the child to succeed.

Orff Schulwerk

The Orff Schulwerk method is a way of teaching children about music that engages their mind and body through a mixture of singing, dancing, acting, and the use of percussion instruments, such as xylophones, metallophones, and glockenspiels, which are known as the Orff's instrumentarium (Ajero, 2011). Lessons are presented with an element of play helping the children to learn at their own level of understanding while emphasizing arts integrations with stories, poetry, movement, and drama. The least methodical of the four approaches, the Orff method teaches music in four stages: imitation, exploration, improvisation, and composition. There is a natural progression to the method before getting to instruments. The voice comes first through singing songs and creating poems, then comes body percussion, like clapping, stomping, and snaps. Last comes an instrument, which is viewed as an activity that extends the body.

Kodaly

The Kodaly method's philosophy is that music education is most effective when started early and that everyone is capable of musical literacy through the use of folk and composed music of high artistic value (Suzuki, 1981). Zoltan Kodaly was a Hungarian composer. His method follows a sequence with each lesson building on the last. Singing is stressed as the foundation for musicianship. He begins with sight-reading, mastering basic rhythms, and learning pitch with a "hand-sign" method. The hand signs help children visualize the spatial relationship between notes. Hand-signs combined with solfege singing (do-re-mi-fa-so-la-ti-do) aids in singing that is on-pitch. Kodaly is also known for a system of rhythmic syllables to teach steady beat, tempo, and meter. Through these

combined lessons, a student naturally progresses into a mastery of sight reading and ear training.

The method above was used to invite young beginners to singing in tune, in addition the children also learn to say musical words in rhythm and to clap or tap the beat. Besides the children were asked to use their body in expressing the music.

Findings and Discussion

Imagination is creativity in action. It can be using students' brains and senses to create an image within mind (Humphreys, 1958). Imagination draws on students' experiences and knowledge of the world around them and combines those things with the complete unknown to make something new.

Imagination is closed to the world of children. It develops along with their age increasement, and emerge from what they are thinking, such as from pictures, films, their idol figures, or from what they see daily. Imagination can make the children more active and creative because teacher may not forget about this thing in guiding them (Humphreys, 1958; Mawson, 2010). Sharpening their imagination will develop their ability in interpreting the music they play later on.

There are a lot of fun activities which can be brought into the lesson to stimulate young beginners' imagination. Playing music while imagining something is a fun activity for them. Teacher can tell stories or use animal's sound for example to introduce high and low sounds, such as mouse for high sound and bear for low sound. Imagination could also come from pictures (James & Sternberg, 2010). Using tutor books which decorated by interesting and colorful pictures will be helpful to stimulate the children's imagination (Litterst et al., 2006). Teacher can also ask them to make up a story about certain tune, and then singing it while imagining the story. Or when learning about notation, it would be more fun and interesting if using imagination, such as "Ant" for note A, "Goat" for not G.

A few activities which can be brought into the lesson to make the children able to catch and communicate the character and style of the piece being performed. As an example, ask them to listen and draw the mood and character of the piece we are playing on the piano (Tollefson, 1999). It would be better if we initially give them an example first, such as the picture about a happy little girl called Marry who has little lamb in the "Marry Had a Little Lamb" piece, with its' simple melody notes and lively tempo.

Teacher can also sharpen their imagination through story. For example, about the sounds of birds, warfare, waterfall, rain, train, hustle on the market etc. By such pictures, the students will be easier in translating and determining the low and high sounds on the piano (Burrows, 1947). We can also stimulate their imagination by encouraging them to make up a story from the title of the piece being learned. Through such activity, hopefully they can increase their imagination which in turn will support their interpretation in playing music.

By developing their imagination, hopefully the children will develop their ability in interpreting the music they play, and will perform it well according to their imagination and the character of the piece (Inggrid & Samuelsson, 2009;

Singger, 2006). This also would make the lesson activity become fun and interesting for them. For this reason, music educator has a golden opportunity to achieve an educational integrity that would bring to it a universal recognition of its unique social value (Pitts, 2013).

Technical skill is the hardest part of teaching young beginners. It is common that children can not sit still too long, yet having weak hands and fingers as well as limited vocabulary and understanding. It is important here to habituate the good body posture, and instilling the correct instruction using selective words adjusted with children's understanding and condition. All effective teachers give playing enjoyment to student when train their technical skill and by motivating and empowering their students (Shuler, 2011).

The first thing that must be concerned to prepare them to aquire good technical playing is the proper sitting in front of the piano. Sitting in a wrong way will affect the playing, which in turn will produce poor tone quality. If this carried out too long, it will become a bad habit which will be very difficult to remedy later on. For children, teacher can use adjustable chair to make them sit straight but comfortably at proper height, if necessary completed by foot stool to prevent them swinging their leg while playing the piano. The distance of the chair could be measured by asking them to straight their arm and touch the piano's fallboard using their fist. The proper distance is when they can touch it but still can sit with straight back. In whatever manner you present it or whatever language you use, good posture is vital. Students, who from the start play or sing with a tension free posture are highly advantaged (Harris, 2006).

The good shape of fingers is another important thing that must be instilled and habituated since the first lesson, as well as how to play the piano correctly. Teacher can guide them to achieve these by using toys and imaginative words. Ask them, for example, to hold a suitable size of ball, such as tennis ball, and tell them that their fingers' shape is always like holding that ball when they play the piano. And then ask them to imagine that when they are playing the piano, their hands and fingers are like walking crab, not like jumping frog.

Creative ability is essential for all musicians (Harris & Crozier, 2006). This is a skill that often ignored by number of teachers as it needs something more than knowledge. It needs creativity and imagination which supported by the other skills, and which is not easy to be taught. But actually this skill takes an important part in developing musicianship and should become part of the students learning.
Making the students to be creative in learning music is very important. It is an essential part of musicianship, and must be cultivated as early as possible. Improvisation is one of the way to develop their creativity, as well as their other skills (Heru, 2016). It will make them do not always depend on the music score when playing music, and able to create their own music. The values and practices of the participatory field also make contributions equally valued. The values and practices of the participatory field also make clear the tension in music education between specialization (that causes fewer students to participate) and the broad participation that flows naturally from participatory music (Thibeault, 2015).

Improvisation can be done in a fun way adjusted with the child's world. It could be taught from the beginning before using piano instrument, and should be

started from the easiest one, to prevent them to become confuse and uncertain (Philips, 2010). The simplest way is creating rhythms, as this is the basic element of music. Ask the students to create their own rhythms after they can copying well. For example, provide certain beat of meter, and then make call and answer activity between teacher and students. They can do it by clapping, tapping or using percussion toys to make it more fun. The next step could be in the form of singing melody. Same as rhythm, by copying first increased become call and response activity.

As a teacher should aware that beside has different character and ability, every students has different learning style. A starting point for embracing the tenets of culturally responsive education is through student and teacher identity development (Bond, 2017; Väkevä, 2013). In general the students are divided into three kind of learners, that are visual learners, auditory learners, and kinesthetic learners (Lina, 2000). In teaching them, teacher must be very careful. Teacher as music educator must be prioritized the student and give them more a list of objectives and priorities when spend their time to explore learning style (Slaton, 2012). He or she can't approach them based only on their learning style. If he or she does such thing, their other skills will be left behind, which in turn will make them get difficulty in their learning, and inhibit their progression. Of course teacher does not want this to happen. Therefore, teaching using simultaneous learning or holistic approach would be the best way to develop young students abilities. Take a moment right now and consider past events where you were moved by the power of words, an action, someone helping someone else, teachers going further than expected, students learning and gaining knowledge, and showing excitement towards the experience of music (Resta, 2016; Shorner-Johnson, 2013). Citation and reading are valuable, but connecting to those in the inner circle does not spread the word to the larger world. This is where we need to make more of a difference, and research can indeed play a role in this endeavor. There is impact everyday in the music education profession, and encourage all of us to think about what we can really do to make it lasting and powerful and important (Resta, 2016). Teacher is ought to manage the time well because in 30 minutes piano learning the student should learn scales, aural work pieces, sight readings, theories and improvisations. The need is to find a method of introducing sight-reading, aural work, scales, and other means of developing musicianship on a regular basis and to make their presence interesting, relevant and stimulating. Given the little time available, an integrated approach would seem to be the answer: integrating aural work with pieces, scales with sight-reading, aural work with scales and so on.

The ingredients of musicianship can be both taught and learnt much more effectively when they are seen as being part of a whole. The objective is to make each lesson much more like an organic process. The teacher sets the agenda, is pro-active rather than re-active, and there is a considerable amount of student-teacher interaction throughout (Ying, 2014). This is what is meant by simultaneous learning. It is the task of a music teacher to develop their students ability, not only the ability to play the piano, but also to broaden their knowledge and to make them having musical and analytical thought to become independent

learners. Independent learners and teacher becoming a performance major they get noticed for what they are playing, and as a music education major, we do our hardest work off-site (Conway, Eros, Pellegrino, & West, 2010). It is also introduce and embedding interdisciplinary paradigm for students which music education is influenced by globalization demonstrate that the latter comes in many faces, fashions, and patterns of social behavior as representation interdisciplinarity (Johansen, 2013). For those purpose, they need to develop all skills needed in learning music completely since the first lesson and in every lesson by simultaneous learning.

Conclusion

A piano teacher should not feel satisfied only when his or her students have already been able to play piano. He or she has to be able to lead the lesson well, and handles the students who each have different abilities and characteristics. Teacher also needs to keep his or her manner and attitude to build good rapport with our students, and to make them keep respect us all at once. Teacher may feel satisfied if they like and enjoy the lesson since the beginning of their learning. It needs to remember that young beginners like to imagine from what they watch (film), read (tales), and see (idol figure). They also love games, singing and dancing. They have yet little fingers, limited power of concentration, and restricted vocabulary. Therefore, in selecting tutor books choose the one that achievable and suitable for each of them, and guide them using simple words. Help them to develop their best through fun and enjoyable lessons.

References

Ajero, M. (2011). Teaching piano to your own young child. *American Music Teacher, 61*(1), 40, 42–43.

Bond, V. L. (2017). Culturally responsive education in music education: a literature review. *Contributions to Music Education, 42*, 153–180.

Burrows, R. (1947). Piano study: a fundamental. *Music Educator Journal, 34*(1), 54.

Cassidy, E., & Powell, S. R. (2014). A phenomenological study of music education majors' identity development in methods courses outside their areas of focus. *Bulletin of the Council for Research in Music Education*, (201), 23–41.

Chandler, K. W., & Russell, J. A. (2012). A comparison of contracted and ideal music education faculty workload. *Bulletin of the Council for Research in Music Education,* (193), 77–89.

Conway, C., Eros, J., Pellegrino, K., & West, C. (2010). Instrumental music education students' perceptions of tensions experienced during their undergraduate degree. *Journal of Research in Music Education, 58*(3), 260–275.

Harris, P. (2006). *Improve your teaching*. London: Faber Music.

Harris, P., & Crozier, R. (2006). The music teacher's companion. *The Associated Board of the Royal School of Music,* 7–67.

Heru, J. M. (2016). *Hitam putih piano*. Surabaya: Pustaka Muda.

Humphreys, A. W. (1958). Creativity in music education. *American Music Teacher, 8*(2), 5,22.

Inggrid, P., & Samuelsson. (2009). *Play and learning in early childhood setting*. Singapore: Springer Science.

James, K., & Sternberg, R. J. (2010). *The Cambridge handbook of creativity*. New York: Cambridge University Press.

Johansen, G. (2013). Music education and the role of comparative studies in a globalized world. *Philosophy of Music Education Review, 21*(1), 41–51.

Jorgensen, E. R. (2010). School music education and change. *Music Educator Journal, 96*(4), 21–27. http://doi.org/10.1177/0027432110369779

Jorgensen, E. R. (2014). Values and philosophizing about music education. *Philosophy of Music Education Review, 22*(1), 5–21.

Jorgensen, E. R., & Ward-steinman, P. M. (2015). Shifting paradigms in music education research: a theoretical and quantitative reassessment. *Journal of Research in Music Education, 63*(3), 261–280.

Lina, N. (2000). *Piano lesson made easy*. Rhythm MP Sdn.

Litterst, G. F., American, S., Teacher, M., & May, N. A. (2006). Should music making be fun? *American Music Teacher, 55*(5), 77–78.

Mawson, W. B. (2010). *Collaborative play in early childhood education*. New York: Nova Science Publishing.

Miksza, P. (2013). The future of music education continuing the dialogue about curricular reform. *Music Educator Journal, 99*(4), 45–50. http://doi.org/10.1177/0027432113476305

Mishra, J., Day, K., Littles, D., & Vandewalker, E. (2011). A content analysis of introductory courses in music education at NASM-accredited colleges and universities. *Bulletin of the Council for Research in Music Education*, (190), 7–19.

Philips, K. H. (2010). Preserving music education in the 21st century. *Bulletin of the Council for Research in Music Education, Summer*, (185), 87–93.

Pitts, L. B. (2013). Music education, isolated or integrated? *Music Educator Journal, 100*(1), 59–62. http://doi.org/10.1177/0027432113490671

Resta, C. (2016). Rethinking impact in music education research. *Contributions to Music Education, 41*(2016), 9–14.

Shorner-Johnson, K. (2013). Building evidence for music education advocacy. *Music Educator Journal, 99*(4), 51–55.

Shuler, S. C. (2011). Music education for life: five guiding principles for music education. *Music Educator Journal, 97*(3), 7–9. http://doi.org/10.1177/002/432110395080

Singger, D. (2006). *Play=Learning: How play motivater and enhances children's cognitive and social-emotional growth*. New York: Oxford University Press.

Slaton, E. D. (2012). Music education budget crisis. *Music Educator Journal, 99*(1), 33–35. http://doi.org/10.1177/0027432112454837

Suzuki, S. (1981). *Ability development from age zero*. London: Alfred Publishing.

Thibeault, M. D. (2015). Music ducation for all through participatory ensembles. *Music Educator Journal, 102*(2), 54–61. http://doi.org/10.1177/0027432115610170

Tollefson, M. (1999). Success in every lesson. *American Music Teacher, 49*(2), 24–26.

Väkevä, L. (2013). Four pieces on comparative philosophy of music education. *Philosophy of Music Education Review, 21*(1), 5–7.

Wiggins, T. (2015). Music, education, and sustainability. *The World of Music, 4*(1), 35–44.

Ying, N. Y. (2014). *Poco piano for young children*. Poco Studio.

IJIET, e-ISSN 2548-8430, p-ISSN 2548-8422, Vol. 3, No. 2, July 2019

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

STUDENTS' PERCEPTION OF DIFFICULTY LEVELS OF SENIOR SECONDARY SCHOOL CIVIC EDUCATION CURRICULUM CONTENT IN OSUN STATE, NIGERIA

William Rotimi Okunloye
University of Ilorin
willyroti2014@gmail.com
DOI: https://doi.org/10.24071/ijiet.2019.030205
received 11 April 2019; revised 29 May 2019; accepted 26 June 2019

Abstract
The learnability of school curriculum has been attributed to students' perception of different school subjects which also determines the level of students' performance and ultimately the achievability of the intended curriculum objectives. Studies had been conducted in other subject area apart from Civic Education which is relatively new in the Nigerian Secondary School curriculum. This paper examines students' perceived difficulty levels in Civic Education curriculum content and the factors associated with their perceptions. The population for the study comprised all Civic Education students in Osun State, Nigeria. Descriptive survey design was adopted for the study and a researcher-designed instrument titled Civic Education Student Syllabus Perception Questionnaire (CESPQ) was administered to 487 randomly selected students drawn from stratified randomly selected 25 Senior Secondary Schools in Osogbo, Osun state, Nigeria. The Three research questions raised for the study were answered using percentage, mean and standard deviation statistics. The results showed that the Senior School Civic Education Syllabus (SSCES) topics were perceived by students to be of different difficulty levels ranging from difficult, to very simple with an absolute majority of them being predominantly very simple. The observed difficulty levels were associated with inadequate textbooks, teachers' presentation of lessons and wide content coverage. These imply that the Civic Education curriculum is predominantly learnable while the curriculum objectives are also predominantly achievable. Based on these findings, it was recommended that teachers should enhance the learnability of the few perceived difficult topics by students through the use of predominantly learner-centred strategies and more learner-friendly strategies to teach the subject.

Keywords: civic education, students 'perception, difficulty levels, curriculum contents

Introduction

Civic education was introduced into Nigeria educational system in order to achieve a number of educational objectives. The re-introduction of Civic education curriculum into Nigeria educational system was as a result of the

numerous problems that led to the decline in education and deterioration of cultural values among Nigerian citizens (Ali, Hayatu & Badau, 2015). Among these problems are the antisocial activities, poor democratic behaviour and problem of non-challant attitude towards examination regulations that has led to frequent examination malpractices and lack of patriotism behaviour among Nigeria youth (Fan, Ekpo & Ita, 2008).

As such, the introduction of civic education in Nigeria educational system is to cater for areas in the Social Studies curriculum in which the subject was unable to achieve. Such areas are: the objectives of politics, democratic participation but particularly to develop students to attain certain desirable's knowledge, social norms, customs, values, basic skills and for understanding the necessary ethics that would make them become disciplined and responsible Nigerian citizens. Finkel (2000) posited that, civic education's primary objectives is to provide learners with adequate and relevant information on their rights, duties, responsibilities and conditions for political engagement with the aim of encouraging the citizens to engage themselves in meaningful contributions to the political system.

Ajibade (2011) was of the opinion that the purpose of civic education curriculum in senior secondary schools is majorly interested in transforming learner's ability to achieve democratic skills and values in order for the citizens to function adequately in the process of democratic participation in Nigeria. It is believed that with the introduction of Civic education into secondary school's curriculum, Nigeria is in the right direction to refocus and strategized the potentials of our founding fathers' visionary qualities in the area of inculcating desirable social norms and national ethics into our students, because they are expected to take over the leadership of our country. In view of this, Civic education curriculum has identified the following areas to impart the knowledge of: societal values, citizenship and nationalism, human right, law and order, responsible parenthood, traffic regulations, interpersonal relationships, governmental system and process.

Ali, Hayatu and Badau (2015) reported that, for implementation of any curriculum, teachers from various fields are expected to be the key target for the job, but in case of Civic Education, the Social Studies teachers has been saddled with the responsibility of teaching Civic Education at all levels of Nigeria educational system, because Social Studies education is the only area that is related to Civic Education and they share contents that are similar, since there are no qualified teachers in this field of study. The qualified Social Studies teachers are the most appropriate teachers to handle the teaching of Civic Education concepts in secondary schools.

Statement of the Problem

Studies confirmed that large sizes of topics are not too easy to teach by teachers due to their demanding and abstract nature in sciences subjects (Oyedeji, 1992; Jimoh, 2001; Oyedokun, 2002 & Akanni, 2015). Also, a study carried out on senior school students' perception of difficulty levels of Christian Religious Studies Syllabus confirmed a smaller proportion of CRS syllabus to be very difficult (Okunloye & Awowale, 2011). These studies were carried on science

subjects and on religious subjects. This current study was carried out on social science subject (Civic education).As a new subject introduced to secondary school curriculum, it becomes imperative to examine the levels of difficulty of the subject in order to improve on the content, methods, instructional materials and evaluation procedures of Civic Education. Therefore, this study examined the Students' perception of difficulty levels of senior secondary school Civic Education syllabus in Osun State, Nigeria.

The following research questions were raised to guide the study:

1. What are students' perceived difficulty levels of the Senior Secondary Certificate Examination syllabus topics of Civic Education?
2. What are students' perceived difficulty levels of the three major thematic components of the Senior Secondary Certificate Examination syllabus topics of Civic Education?
3. What are students' perceived associated factors with the observed difficulty levels of the Senior Secondary Certificate Examination syllabus topics of Civic Education?

Method

This study is a descriptive survey research design. This is necessary to be able to explain the variables in the study based on information gathered. The research was conducted on selected secondary schools in Osun State. The population consisted of all Civic Education Students in Upper Basic and Senior Secondary Schools in Osun State, Nigeria. The target population was all senior school, Civic Education students in Osun State. The sample comprised, 500 randomly selected Senior School Civic Education student from 25 randomly selected senior Secondary Schools in Osun State. However 487 administered and returned questionnaires generated the data for the study. A questionnaire titled "Civic Education Students' Curriculum Perception questionnaire. Questionnaire (CESRQ)" was used for data collection. The questionnaire was divided into two sections. Section A dealt with difficulty levels of SSCE Civic Education topics. It contained 23 items on content of the subject and was related on modified four point Likert scale as: Very Difficult (VD) = 4, Difficult (D) = 3, Not Difficult (ND) = 2 and Very Simple (VS) = 1. Section B contained reasons for difficulty levels of Civic Education topics and was on Most Responsible (MR) and Not Responsible (NR). To validate the instrument, copies of the questionnaire was given to experts in Social Studies in the Department of Social Sciences Education, University of Ilorin to ensure face and content validity. Its reliability was established using test-retest technique and a reliability index of 0.83 was obtained. Tables, Percentages, mean and standard deviation were used to answer the three research questions raised for the study.

Findings and Discussion

Research Question 1

What are students perceived difficulty levels of the Senior Secondary Certificate Examination syllabus topics of Civic Education?

To answer the research question 1, results of students on perception of the difficulty levels of the SSCE Civic Education syllabus are shown on the Table below.

Table 1. Students' Perceived Difficulty Levels of the SSCE Syllabus Topics of Civic Education (National Ethics Discipline)

N/S	National Ethics Discipline	N	Difficulty levels VD (%)	D (%)	ND (%)	VS (%)	DECISION
1	Rights and Obligations	487	16 (3.3%)	47 (9.7%)	209 (42.9%)	215 (44.1%)	Predominantly very simple
2	Values	487	2 (0.4%)	14 (2.9%)	214 (43.9%)	257 (52.8%)	Predominantly very simple
3	Citizenship	487	260 (53.4%)	19 (3.9%)	204 (41.9%)	257 (52.8%)	Predominantly very simple
4	Nationalism	487	20 (4.1%)	40 (8.2%)	204 (41.9%)	223 (45.8%)	Predominantly very simple
5	Human rights	487	10 (2.1%)	22 (4.5%)	191 (39.2%)	264 (54.2%)	Predominantly very simple
6	Universal Declaration of Human Rights	487	22 (4.5%)	39 (8.0%)	199 (40.9%)	227 (46.6%)	Predominantly very simple
7	Law and Order	487	18 (3.7%)	29 (6.0%)	198 (40.7%)	242 (49.7%)	Predominantly very simple
8	Responsible Parenthood	487	23 (4.7%)	35 (7.2%)	196 (40.2%)	233 (47.8%)	Predominantly very simple
9	Traffic regulations	487	22 (4.5%)	17 (3.5%)	201 (41.3%)	247 (50.7%)	Predominantly very simple
10	Interpersonal Relationships	487	26 (5.3%)	42 (8.6%)	177 (36.3%)	242 (49.7%)	Predominantly very simple
	Emerging Issues in the Society						
11	Cultism	487	35 (7.2%)	20 (4.1%)	204 (41.9%)	228 (46.8%)	Predominantly very simple
12	Drug and drug abuse	487	26 (5.3%)	20 (4.1%)	173 (35.5%)	268 (55.0%)	Predominantly very simple
13	Human Trafficking	487	34 (7.0%)	17 (3.5%)	187 (38.4%)	249 (51.1%)	Predominantly very simple
14	HIV/AIDS	487	37 (7.6%)	19 (3.9%)	171 (35.1%)	260 (53.4%)	Predominantly very simple
15	Youth Empowerment	487	39 (8.0%)	46 (9.4%)	182 (37.4%)	220 (45.2%)	Predominantly very simple
	Government System and Process						
16	Structure and function of Government	487	27 (5.5%)	47 (9.7%)	170 (34.9%)	243 (49.9%)	Predominantly very simple
17	Democracy	487	17 (3.5%)	24 (4.9%)	213 (43.7%)	233 (47.8%)	Predominantly very simple
18	Constitution	487	18	39	217	213	ND

N/S	National Ethics Discipline	N	Difficulty levels VD (%)	D (%)	ND (%)	VS (%)	DECISION
	features		(3.7%)	(8.0%)	(44.6%)	(43.7%)	
19	Rule of law	487	19 (3.9%)	37 (7.6%)	220 (45.2%)	211 (43.3%)	ND
20	Role of democracy	487	40 (8.2%)	38 (7.8%)	216 (44.4%)	193 (39.6%)	ND
21	Political apathy	487	29 (6.0%)	41 (8.4%)	215 (44.1%)	202 (41.5%)	Predominantly very simple
22	Civic societies	487	28 (5.7%)	31 (6.4%)	230 (47.2%)	198 (40.7%)	Predominantly very simple
23	Public service	487	19 (3.9%)	41 (8.4%)	210 (43.1%)	217 (44.6%)	Predominantly very simple

Table 1 shows the various percentages of difficulty levels. It shows partially difficult and predominantly very simple of difficulty levels. The partly difficult are from 6.6% to 13.0% range while the predominantly very simple are from 44.1% to 52.8% on National Ethics and Discipline. The table also indicates the various percentage of difficulty levels. It shows partly difficult and predominantly very simple of difficulty levels. The partly difficult are from 9.4% to 17.0% range while the predominantly very simple are from 45.2% to 55.0% on Emerging Issues in the society. The table shows the various percentage of difficulty levels. It shows partly difficult and predominantly very simple of difficulty levels. The partly difficult are range from 8.4% to 13.0% range while the predominantly very simple are from 91.6% to 87.0% on Government system and process.

From the table, only 3 topics of the SSCE Civic Education syllabus topics were perceived to be not difficult part of the syllabus, while 20 topics were perceived to be predominantly very simple out of all components of the syllabus.

Research Question 2

What are students perceived difficulty levels of the three major thematic components of the Senior Secondary Certificate Examination syllabus topics of Civic Education?

The responses of the students on difficulty levels of the three major thematic components of the Senior Secondary Certificate Examination syllabus topics of Civic Education are as shown in Table 2.

Table 2. Students' Perceived Difficulty Levels of the Three Thematic Components of SSCE Syllabus Topics of Civic Education

Syllabus Themes	Difficulty levels VD (%)	D (%)	ND (%)	VS (%)	Total of Topics	DECISION
National Ethics Discipline	(1.6%)	(1.4%)	(19.3%)	(63.7%)	10	Predominantly very simple
Emerging Issues in the Society	(4.6%)	(14.4%)	(23.0%)	(55.0%)	5	Predominantly very simple
Government System and Process	(0.7%)	(1.3%)	(26.2%)	(63.8%)	8	Predominantly very simple

The results of the thematic students perceived difficulty levels of the three major thematic components of the syllabus topics shown in Table 4 indicates that the National Ethics Discipline and Emerging Issues in the Society are very simple while 3 topics of Government System and Process are not difficult and 20 topics are very simple. On the whole, National Ethics Discipline, Emerging Issues and Government System and Process were perceived to be very simple to understand by the students.

Research Question 3

What are students perceived associated factors with the observed difficulty levels of the Senior Secondary Certificate Examination syllabus topics of Civic Education?

The responses on students perceived associated factors with the observed difficulty levels of the Senior Secondary Certificate Examination syllabus topics of Civic Education were shown on the Table 3.

Table 3. Students' Perceived Associated Factors with the Observed Difficulty Levels of the SSCE Syllabus Topics of Civic Education (Reasons for Difficulty levels)

S/N	Reasons for Difficulty levels	N	M R (%)	N R (%)	Decision	Rank
1	Abstract nature of the topics	487	248 (50.1%)	239 (49.1%)	Responsible	14th
2	Historical nature of the topics	487	241 (49.5%)	246 (50.5%)	Not Responsible	
3	Teachers' treatment of topics	487	213 (43.7%)	274 (56.3%)	Not Responsible	
4	Teacher's inadequate content coverage	487	267 (54.8%)	220 (45.2%)	Responsible	6th
5	Teacher created phobia	487	240 (49.3%)	247 (50.7%)	Not Responsible	
6	Learners' phobia for Civic Education topics	487	255 (52.4%)	232 (47.6%)	Responsible	10th
7	Senior student-related phobia	487	241 (49.5%)	246 (50.5%)	Not Responsible	
8	Senior student-related motivation	487	241 (49.5%)	246 (50.5%)	Not Responsible	
9	Perceived career-irrelevance of Civic Education	487	253 (52.0%)	234 (48.0%)	Responsible	12th
10	Disrupted academic calendar	487	260 (53.4%)	227 (46.6%)	Responsible	8th

S/N	Reasons for Difficulty levels	N	M R (%)	N R (%)	Decision	Rank
11	Irrelevant teachers subject specialization	487	254 (52.2%)	233 (47.8%)	Responsible	11th
12	Wide content	487	271 (55.6%)	216 (44.4%)	Responsible	3rd
13	Rush for syllabus coverage	487	225 (46.2%)	262 (53.8%)	Not Responsible	
14	Extra-mural coaching	487	268 (55.0%)	219 (45.0%)	Responsible	5th
15	Learners' loss of interest	487	243 (49.9%)	244 (50.1%)	Not Responsible	
16	Future career preference	487	266 (54.6%)	221 (45.4%)	Responsible	7th
17	Interest in topics	487	250 (51.3%)	237 (48.7%)	Responsible	13th
18	Insufficient explanation	487	266 (54.6%)	221 (45.4%)	Responsible	7th
19	Lack of textbooks	487	267 (54.8%)	220 (45.2%)	Responsible	6th
20	Inadequate textbook	487	281 (57.7%)	206 (42.3%)	Responsible	1st
21	Large class size	487	257 (52.8%)	230 (47.2%)	Responsible	9th
22	Inadequate preparation for examination	487	269 (55.2%)	218 (44.8%)	Responsible	4th
23	Insufficient topic treatment	487	254 (52.2%)	233 (47.8%)	Responsible	11th
24	Teachers' use of abstract terms/concepts	487	276 (56.7%)	211 (43.3%)	Responsible	2nd
25	Textbook use of Abstract words	487	228 (46.8%)	259 (53.2%)	Not Responsible	

Table 3 showed that eight out of twenty-five perceived associated factors with the observed difficulty levels of the Senior Secondary Certificate Examination syllabus topics of Civic Education were not responsible for the difficulty levels. Seventeen out of the twenty-five perceived associated factors as reasons responsible for the difficulty. This shows that the partly difficult is perceived by the students

Table 4. Students' Perceived Associated Factors with the Observed Difficulty Levels of the SSCE Syllabus Topics of Civic Education (Associated factors)

S/N	Associated factors	N	Mean	Std. Deviation	Rank
1	subject-matter related factor	487	4.5606	1.19150	4th
2	teacher-related factor	487	10.6509	2.51524	1st
3	students-related factor	487	7.5791	1.84631	2nd
4	students career-related factor	487	3.0657	.80367	5th
5	school related factor	487	3.0616	.80655	6th
6	instructional material related factor	487	6.1150	1.48349	3rd

Table 4 shows six associated factors in which students' perceived as associated factors with the observed difficulty levels of the Senior Secondary Certificate Examination syllabus topics of Civic Education. Teachers-related factor was ranked first with while the school related factor was ranked 6th as last the associated factor perceived as associated factors with the observed difficulty

levels of the Senior Secondary Certificate Examination syllabus topics of Civic Education.

Discussion

From the results of the data analysed, it is evident that a greater proportion of the SSCE Civic Education syllabus are not difficult, while a smaller proportion is either very difficult or difficult. Also, topics under the National Ethics Discipline and Emerging Issues in the Society were perceived to be very difficult, difficult and not difficult respectively. In addition, 17 reasons were associated with the students with the perceived difficulty levels of 23 topics ranging from topics, inadequate textbook, teachers' use of abstract terms/concepts, among others to abstract nature of the topics of Civic Education.

The findings of the study revealed that there is partly difficulty level of Civic Education indicated by minority of the respondents while the majority showed that the subject is very simple as similarly observed by Okunloye (2004, 2009) that the small proportion of the perceived difficult topic that seems to have accounted for the observed failure strategies consistent with the position of mastery learning on the possibility of set of topics of whatever magnitude in a sequence of other schematized topics to constitute serious problem in learning the holistic component in a given scheme of work (Hyman and Cohen, 1979).

The high ranking of the associated factor of difficulty levels of topics in Civic Education as first and second order associated factors with student's perceived difficult topics also agreed with Awowale (2004) on the observed subject-related and student-related causes of learning difficulties in junior school CRS. This prominence of teacher-related and student-related factors as a cause of the perceived difficulty levels agreed with Fehintola and Falaye (2011) who observed the significance of student's socio-personal factors, including self-efficacy as predictors of academic performance. Although the instructional materials related factor is moderately associated to be influencing the learners' ability of Civic Education topics, the fact that the teacher is most important human resource that determines what, when and how to use other instructional resources implicitly point to the teacher factor as a major determinants of teaching-learning effectiveness.Therefore, the ranking of teacher-related factor as 1st and student-related factor as 2nd order factors do not in any way undermine the potency of the teacher factor in teaching-learning effectiveness and academic achievement. Indeed, as observed by Okonkwo (2002), the subject-teacher is the most important facilitator of learning who is equipped as a problem-solver in learning difficulties through the use of simplified, interest sustaining and learning motivating strategies.

Conclusion

All topics of Civic Education syllabus can be made learnable through effective syllabus coverage using simplified and learning motivating strategies by Civic Education teachers. When these are done, students will be greatly assisted to effectively learn every topic in the syllabus and the likelihood of reversing the prevailing trend of failure rate will be guaranteed.

Implication

All impediments to effective teaching and learning of SSCE Civic Education syllabus topics must be tackled in front to reverse the failure rate in the subject. The components of the syllabus posing problem to the students deserved special attention by teacher through simplified and learner-entre teaching strategies.

Recommendations

In order to address issues raised in this study regarding the difficulty level of the SSCE Civic Education syllabus topics and associated factors, the following measures are suggested:

1. All topics in the syllabus should be made learnable to students by the Civic Education teachers;
2. Teachers of Civic Education should pay special attention to the student's perceived area of difficulties in the syllabus and use teaching strategies that will made them simple to learn; and
3. Appropriate career counselling should be given to the Civic Education students to develop interest in Civic Education and specific Civic Education topics they perceived to be uninteresting.

References

Adedoyin, G.K. (1998). *Teachers' perception of difficulty levels of topics in senior school Geography curriculum*, An unpublished M.Ed. Research Project, University of Ilorin, Ilorin, Nigeria.

Adegbite, O. A. (2004). *Students view on difficulty levels of topics in junior school Social Studies curriculum in Oyo State, Nigeria*, An M.Ed. Research project, University of Ilorin, Ilorin, Nigeria.

Ahmed, M. A. (2002). *An analysis of secondary Biology teachers' rating of the difficulty levels of concepts in nutrition in Ilorin, Nigeria*. An unpublished M.Ed. Research Project, University of Ilorin, Ilorin, Nigeria.

Akanni, O. (2015). An investigation of difficult topic in the senior secondary school Mathematics curriculum as perceived by student teachers. *American Journal of Educational Research*. 3 (7), 844-848, from http:/pubs.sciepub.com/education

Ajibade, I. S. (2011). Civic Education: A veritable tool for promoting responsible citizenship in Nigeria. *Nigerian Journal of Social Studies,*14 (2), 68-76.

Ali, M. A., Hayatu, G. I. & Badau, K. M. (2015). Assessment of implementation of Civic Education in secondary schools in Adamawa, *Journal of Education and Literature, 3(4), 141-146.*

Awowale, A. A. (2004). *Difficulty levels of junior secondary school Social Studies in Ilorin,Kwara State, Nigeria*. An unpublished Postgraduate Diploma in Education Research, Institute of Education, University of Ilorin, Ilorin, Nigeria.

Ibrahim, S. S. (1999*). Teachers' perception of the difficulty levels of selected topics in the senior secondary school Hausa Language Curriculum*. An unpublished M.Ed. Research Project, University of Ilorin, Ilorin, Nigeria.

Fan, A. F., Ekpo, M. D. & Ita, M. B. (2008). Towards enhancing moral and religious instructions in primary schools. *Journal of Teacher Education, 9 (1), 51-62*.

Fehintola, J. O. & Falaye, A. O. (2011). Predictive values of Senior School Certificate Examinations, University Matriculation Examination and Socio-personal factors on Academic performance of University Freshmen in South West Nigeria. *International Journal of Research in Counselling and Sport Sciences* (IJORESCS). 2 (1) June, 2011, 26 – 42.

Finkel, S. E. (2000). Can tolerance be taught adult: Civic Education and the development of democratic values. Paper prepared for the conference 'Rethink Democracy in the New Millennium', University of Houston.

Hyman, J. S. & Cohen, S. A. (1979). *Learning for Mastery: Levels of selected topics in the senior school Hausa language Curriculum*. An unpublished M. Ed. Research Project. University of Ilorin, Ilorin.

Jimoh, A. T. (2010). Perception of difficulty topics in Chemistry curriculum by students in Nigeria secondary schools. *Ilorin Journal of Education, 4(1), 1-5*.

Okunloye, R. W. & Omolekan, J. A. (2016). *Civic Education a veritable instrument for achieving sustainable development in Nigeria*. A paper presented at the Annual National Conference of Sociologists of Education of Nigeria (ASEN) 9-14 October held at University of Ilorin, Ilorin, Nigeria.

Okunloye, R. W. (2016). *Exploring non-formal political education for addressing political Apathy and irrational voting behavior in 4th Republican, Nigeria*. A paper presented at Annual National Conference of Social Studies Association of Nigeria, held on 14th – 15th December, 2016 at the University of Ibadan.

IJIET, e-ISSN 2548-8430, p-ISSN 2548-8422, Vol. 3, No. 2, July 2019

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

THE EFFECT OF CODE SWITCHING ON ENGAGING NON-ENGLISH MAJOR STUDENTS

Fransisca Endang Lestariningsih
Universitas Kristen Duta Wacana
endang@staff.ukdw.ac.id
DOI: https://doi.org/10.24071/ijiet.2019.030206
Received 30 January 2019; revised 29 May 2019; accepted 26 June 2019

Abstract
When speakers share two or more languages in common, they often switch their languages in a conversation. It is true in the classes where both teachers and students must use a certain language as the language of instructions, as happening in the English classes of Computer Science students in Indonesia. Some teachers tend to always use English all the time with some considerations, whereas others often practice code-switching in the instructional process with other reasons, as well. This study is an observation of the effect of code switching to engage students in two English for computer science classes, in which the teacher in one class used code-switching and the other did not.

Keywords: code-switching, student's engagement, English for Computer Science classes

Introduction

As one of the international languages, English keeps on leading the language of almost every aspects of life such as business, media, technology, education, and research (McKay, 2012). Therefore English has been a compulsory subject in every major of higher education in Indonesia; students of computer science major are no exception. As a compulsory subject, these non-English major students must take the subject upon their graduation. This condition, generally, creates disadvantages towards the teaching and learning process since the students will feel unmotivated. This is acknowledged by an empirical study conducted earlier towards some students of computer science major in some universities who had to take English subject. Even though some said that English was very important for them, others did not think they need to depend on English in their life. This fact brings about different motivation of the students to learn English voluntarily, meaning that they have intrinsic motivation. Intrinsic motivation, no doubt, plays a very important role in engaging the students to learn something, as Mangunwijaya (2004) argued that wherever heart is placed, the process of learning and growing begins (di mana hati diletakkan, di situ proses belajar dan maju dimulai) .

The various motivations in a class certainly require English teachers to be more creative in assisting their students, as Rahmat, Sainu and Weda (2016)

concluded, based on their research towards non-English students, that in order to maintain and improve students' motivation in learning English as a foreign language, teachers/lecturers should set the instructional process using simple language, making classroom situation comfortable, communicative, creative, patient, enthusiastic, relax and friendly.

Since teachers' roles in building students' enthusiasm are exceptionally needed, Nurkamto (2004) argues that in the teaching process it has two implications. The first implication is the main role of a teacher, who has a central responsibility to help his/her students to learn. The teacher is also expected to be able to provide some learning tools and aids as the facilities of learning, as their main job. Motivating and guiding the students could be some of the aids that a teacher could perform as a teacher.

Giving the students motivation could be through making they realize about their motivation, whether it is intrinsic or extrinsic. Guiding the student, which can be in the form of explaining the goals of the subject, the nature of the tasks, and the strategies used to do the tasks, means helping them to find the fine ways in learning. Providing the facilities to learn indicates that the teacher should be able to facilitate the learning, to make it easy to learn. This can be broadly interpreted as designing and creating good condition in order to learn and providing learning facilities.

The second implication deals with who become the most responsible persons in the learning process. In the disruptive era nowadays it is clearly indicates that the learners are the most responsible persons in the development of their learning. As Nurkamto (2004) explains that the learners should be the most responsible towards the process of learning. Students become the subject of autonomous learners. "An autonomous learner will take more responsibility for learning and is likely to be more effective than a learner who is reliant on the teacher." (www.teachingenglish.org.uk). Therefore learner training in the classroom encourages autonomy and is an important element of language teaching. Five principles to achieve autonomous learning are proposed by Richard (2019). He claims that teachers who are active involved in student learning, provide options and resources, offer choices and decision-making opportunities, support learners, and encourage reflection are highly likely to achieve autonomous learning. Consequently teachers should facilitate the learners to be autonomous.

This paper is aimed at finding out whether switching to bahasa Indonesia in an English class could have an effect in the students' motivation and autonomy in the instructional process through increasing their engagement.

This study is a report of an observation of the class engagement and participation among the students of two English for Computer Science classes, in which the teacher in one class used code-switching and the other did not. This is the writer's concern when she was conducting another study that needed to observe two English for Computer Science classes. Although the inputs (language competence) between the two were almost similar, proven by the almost similar result of IELTS test, as seen in Figure 1 and Figure 2, she found out that there was obvious dissimilarity between the two. One teacher (teacher A) tended to always use English all the time with some considerations, whereas the other (teacher B)

often practiced code-switching in the instructional process with other reasons, as well. Teacher A believed that using all English as the medium of instruction during the classroom activity was the right choice, which is acceptable for those who believe in Direct Method. Teacher B, on the other hand, used mix-languages. She often applied code-switching during the teaching and learning process. Code-switching is the practice of alternating between two or more languages or varieties of language in conversation. She usually switched the language from English to the students' mother tongue, Bahasa Indonesia, when she wanted to cheer up the class or break the ice, or when she found out that the students looked confused.

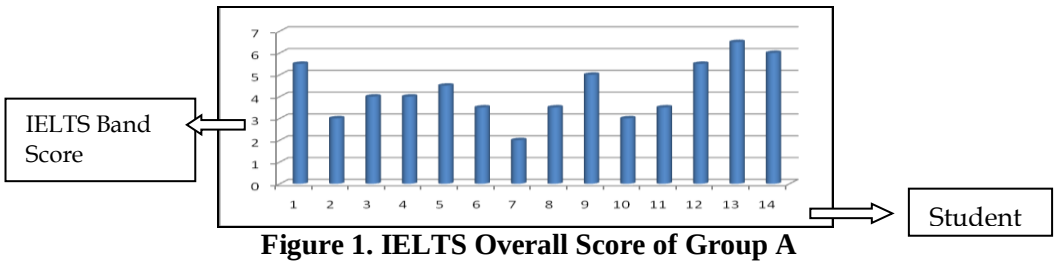


Figure 1. IELTS Overall Score of Group A

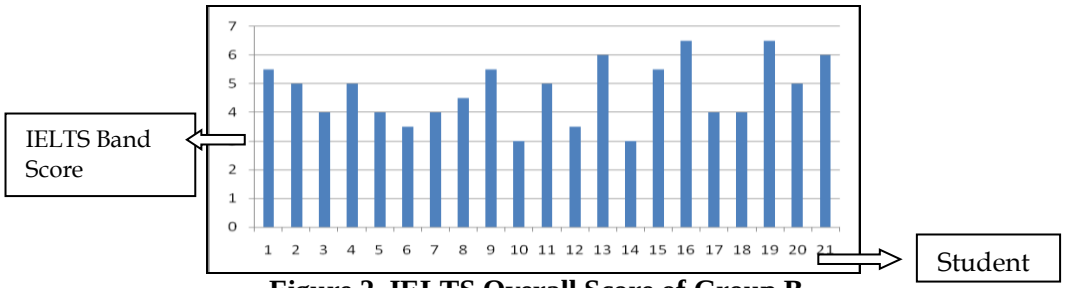


Figure 2. IELTS Overall Score of Group B

The introduction section on the very first meeting was used by both teachers to have a quick look the oral ability of the students to use spoken English. On this meeting, both of them used English as the means of communication. Code switching was almost always used by the students as a weapon if they could not find the English words. Teacher A maintained his medium of instruction, which is using English during the class activities; while teacher B applied code switching in the next meetings.

The observation led to an initial assumption that code switching did influence the students' willingness to be active in the class activities. It means that one of the ways to engage the students is by applying code switching. Engagement, according to Skinner and Belmont (1993), includes components of behavioral and emotional. They explained that students who are engaged show sustained behavioral involvement in learning activities accompanied by positive emotional manner. They select tasks at the border of their competencies, initiate action when given the opportunity, and exert intense effort and concentration in the implementation of the learning tasks; they show generally positive emotions during ongoing action, including enthusiasm, optimism, curiosity, and interest" (Skinner & Belmont, 1993). Engagement is clearly an essential part of effective instructional process. If students are not engaged, there is not much possibility

that they will learn something in the class. Thus students' engagement is the central emphasis of this class observation.

Findings and Discussion

Code-switching Effect towards Non-English Major Students' Class Participation

Ibrahim, Syah and Armia (2013) acknowledged that teachers of English as a foreign language very frequently claim that they did not like to code-switch in using classroom language for a variety of reasons. The majority argued that only the target language, which is English, should always be used in the classroom, as practiced by teacher A in this study. Their study, however, results that some respondents, English teachers, demonstrated positive attitudes toward code-switching, even though they obviously disapproved the practice of switching languages in their English as a foreign language classrooms.

Based on the initial findings, the writer intended to find out the trend on students' willingness to respond to any questions or to ask questions during the teaching and learning process. The writer assigned an assistant to record the frequencies of students asking questions and responding to any questions addressed by either the teacher or other students in three consecutive meetings. In class A with teacher A, who always used English as the language of instruction, there was almost no student, among 30 students, active asking question when he wanted them to do so. In fact there was only one or two students who were voluntarily ask questions or respond to questions addressed by the teacher. According to the assistant, which is acknowledged by the writer when she was observing the previous meetings, the three-credit class ran in a boring atmosphere. The phenomenon after the class was not less appealing. Some students approached the teacher and asked several questions connected to the class activities that day, and the questions were, for sure, addressed in Bahasa Indonesia, their native language. The fact that some students were approaching the teacher after class shows that they did not really get anything during the class activities. The writer assumes what made them silent was because they were too shy or they did not have courage to say it in English.

A reverse condition was seen in class B, with teacher B, who applied code-switching as the language of instruction. By using this technique, it seemed that she could engage the students quite successfully. It could be obviously seen from the questions addressed to teachers and from the answers the teachers got when she asked some questions to the students. The three meetings observed show increasing trend in the voluntary participation among the students.

After some discussions among the writer and the two teachers, teacher A agreed to try code-switching in his instructional process in the class. This change was accompanied by trying another technique in teaching, i.e. quiz game that needed students to competitively answer some questions. In explaining the instruction, teacher A always asked whether the students understood or not. He would switch the language into bahasa Indonesia when he found out that they were confused. During the game, the number of students answering questions and asking questions significantly augmented. Almost 50% of them were active. The

rest of the class activities were quite engaging because the students seemed keen on being active using mix-languages, English and bahasa Indonesia.

The study did not end at that stage. To ensure that the students were not only parroting or trying to make the teacher happy, the next observation was to see the quality of the questions or answers. The writer wanted to see whether the students have practiced higher order thinking skill (HOT) as Miri, David and Uri (2007) acknowledge that "Our ever-changing and challenging world requires students, our future citizens, to go beyond the building of their knowledge capacity...". They argue that students need to develop their HOT skills such as critical thinking, decision making, and problem solving.

The questions below were the examples of students' questions that show they tried to inquire and relate more information. These questions were asked when some groups of students were presenting reading passages related to computer science articles. Additional score would be granted to the students who ask questions or comment on the presentation.

1. *Does it mean that wireless will affect security? How does it work?*
2. *What's your prediction of ICT in the future?*
3. *Is it available for every device?*
4. *Let's assume we belong to 30% of the people who play the game alone; what if we play with a stranger, and we often blame him or her. Does it make social benefit to us? I experienced some players tend to be "toxic" than friendly to strangers.*

The above examples are questions addressed by some active students who were attentive from the beginning of the class. Other questions were also produced by other students who "only" asked questions because they wanted to get extra point. Such questions are, for example:

1. *What's the benefit for students using augmented reality?*
2. *What's the negative effect of ICT?*

The answer to the questions had actually been presented before.

From the findings of the observation, some conclusions can be drawn. Firstly, students' reluctance to ask and answer questions decrease when the teacher applied code-switching during the activities. The writer assumes that the increase in the willingness is because of students' greater understanding toward the instruction. This understanding reduces their tense of digesting English when they listen to the teacher. The second conclusion is code-switching combined with various teaching techniques may improve students' enthusiasm to be more engaged with the class activities. This assumption is drawn because the teacher not only changed the way he delivered the language of instruction, but also at the same time, he applied different approach of teaching which is not teacher-centered (classical lecture), but more student-centered by practicing more various activities that include students. The last is the willingness of the teacher to switch their paradigm. This is considered as the most crucial since teacher is the most important in becoming the agents of change. They can start to make changing from changing themselves first.

Conclusion

This study reveals that code-switching is not solely the one factor that increases students' engagement in learning English. Engagement is defined as students' activeness and participation in practicing English during the class activities. Many other aspects should be taken into consideration to boost their willingness to use English actively in the teaching and learning process. Such aspects are teachers' knowledge on various teaching techniques that can engage students, and their eagerness to be the agent of change. Thus being reflective is the key to improve teachers' skills, as well as to achieve learning autonomy.

Although this study reveals that code switching did increase students' engagement in learning English in the observed class (Class A), the effect towards the other class (Class B) in the condition that the teacher did not apply code switching should have been observed, as well. Thus, next study, showing the switch between using English all the time to applying code switching, should be conducted in order to balance and strengthen the findings.

References

Ibrahim, E. H. E., Shah, M. I. A & Armia, N. T. (2013). Code-switching in English as a foreign language classroom: teachers' attitudes. *English Language Teaching, 6*,7.

McKay, S. L. (2012). *Principle of teaching English as an international language. Principles and Practices of Teaching English as an International Language.* (eds. Lubna Alsagoff, et.el.). New York: Routledge.

Mangunwijaya, Y. B. (2004). *Pendidikan pemerdekaan*. Yogyakarta: Dinamika Edukasi Dasar.

Miri, B., David, B., Uri, Z. (2007). Purposely teaching or the promotion of higher-order thinking skills: A case of critical thinking. *Res Sci Educ, 37*, 353-369. Doi 10.1007s11165-006-9029-2

Nurkamto, J. (2006). Peningkatan profesionalisme guru melalui relective teaching. Retrieved on 12 August 2015 from www.library.uns.ac.id.

Rahmat, A., Sainu, M.N, Weda, S., (2016). English learning motivation of non-English students of STMIK Handayani Makassar. *LEKSEMA Jurnal Bahasa dan Sastra. 1*(2). 132. ejournal.iain-surakarta.ac.id/index.php/leksema

Richard, J. C. (2019). Autonomous learner. The Official Website of Education &Arts Patron Jack C. Richards., retrieved from https://www.professorjackrichards.com/autonomous-learner/.

Richards, J. C. & Lockhart, C. (2007). *Reflective teaching in second language classrooms*. New York: Cambridge University Press.

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85,* 571-581. http://dx.doi.org/10.1037/0022-0663.85.4.571

https://www.teachingenglish.org.uk/article/autonomy

IJIET, e-ISSN 2548-8430, p-ISSN 2548-8422, Vol. 3, No. 2, July 2019

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

TEACHING GREEN ENGINEERING PRINCIPLES AND APPLICATION THROUGH ACTIVE LEARNING

Tony Hadibarata
Curtin University, Malaysia
hadibarata@curtin.edu.my
DOI: https://doi.org/10.24071/ijiet.2019.030207
received 25 February 2019; revised 20 June 2019; accepted 26 June 2019

Abstract
Active learning refers any approach to instruction in which all students are required to involve in the learning process. The purpose of the manuscript is to evaluate the application of active learning in teaching Green Engineering Principles and Applications as a compulsory course in environmental engineering department curriculum, Curtin University Malaysia. Green engineering can be defined as an approach of the design, process, product and commercialization that follow environmentally conscious attitude, principles and values combined with multi-disciplinary engineering science that to minimize pollutant and promote local and global sustainability. Green engineering encompasses the conceptualization and implementation of reducing environmental impacts, maximize energy efficiency and develop the greener processes and product that bring environmental and economic benefit. A simple approach that combining the classical lecture-presentation and active engagement of the students with the course materials through case studies, problem solving and discussion has been developed. In conclusion, introducing the active learning to the students on solving any problems improve the students' ability in achieving the course outcome and thus the programme outcome of the Department of Environmental Engineering, Curtin University Malaysia.

Keywords: green engineering, active learning, course description, assessment

Introduction

Sustainable engineering is a multi-disciplinary concept to engineering problems by looking at the interaction between technical, social, economic and ecological system in all future technological endeavors. There are some pressing challenge that rapid population growth induces the environmental pollution, depletion of materials and energy and damage to ecosystem. The role of decision making in an engineering aspect was based merely on current situation costs. These costs did not consider any approach of upcoming prices to civilization from destruction of social and environment. The situation allows us to make products at possible low price. We have to study the complete lifespan of the product and also observe communal aspects than only than just cost of resources and energy (Hesketh, 2017). Several engineering and science academic institution in many

countries have implemented green chemistry/engineering as a main topic in their core program of undergraduate or a postgraduate course. Beside that a lot of funding have been invested to green chemistry research and training in many countries (Günter, Akkuzu, & Alpat, 2017; Karpudewan, Hj Ismail, & Mohamed, 2011; Kennedy, 2016; Martin, Rivale, & Diller, 2007). A few years ago, Green Chemistry course is applied into the course schedules of academic degree and graduate education as a compulsory subject for the students majoring in chemistry or materials in The University of Science and Technology of China. At the same time, green chemistry was introduced to doctoral program by Sichuan University, China to improve scientific literacy among the graduate students and to enhance their corresponding skills in chemistry (Wang, Li, & He, 2018).

The present situation of teaching approach of undergraduate subject is very dependent on conventional lecture-explanation of the class material and home assignments, without any participation and contribution of the students during learning process. This article presents a simple description of active learning application in the learning process of green engineering subject to the students of environmental engineering in Curtin University Malaysia.

Literature review

Principles of Green Chemistry

The use of Green Engineering is the tools for engineers to enable them to design and manufacture products. Green engineering can be broadly defined as a framework for sustainable development that transformed from existing engineering disciplines and practices. The twelve Principles of Green Engineering as foundation of sustainability was originally developed by Paul Anastas and Julie Zimmerman as follows (Anastas & Warner, 2000):

1. Inherent Rather Than Circumstantial
2. Prevention Instead of Treatment
3. Design for Separation
4. Maximize Efficiency
5. Output-Pulled Versus Input-Pushed
6. Conserve Complexity
7. Durability Rather Than Immortality
8. Meet Need, Minimize Excess
9. Minimize Material Diversity
10. Integrate Material and Energy Flows
11. Design for Commercial “Afterlife”
12. Renewable Rather Than Depleting

Active learning

The concept of active learning was popularized by previous researcher (Bonwell & Eison, 1991; Cavanagh, 2011; Lumpkin, Achen, & Dodd, 2015). Active learning is defined as the engagement of students in learning activities, inspires students to reflect intensely about their learning progress and achievement (Hyun, Ediger, & Lee, 2017). Active learning is founded on a theory of learning called constructivism which ensures the student to be engaged with the content in order to learn the subject. Active learning focus on how students become the main

creators and focus of information and science (Cattaneo, 2017). On the contrary, the conventional passive learning approach showed that students only sit passively receiving the information from the lecturer who, as the expert of knowledge. Active learning drastically enhances the student critical thinking skills during their involvement in class activity such as class debates, flipped classroom, gaming, the 1-minute paper, think–pair–share activities, case studies, or real-life problem discussion (Adkins, 2018; Aktumen & Bulut, 2013; Della Sciucca & Fochi, 2016; Goodwin, 2003; Li, Wu, & Lin, 2019; Mellecker, Witherspoon, & Watterson, 2013). The students are more interested and eager to learn through challenging material when they are feeling capable and accommodated by the teachers. Active learning also promotes a sense of togetherness among students and teachers (Umbach & Wawrzynski, 2005). Green Engineering Principles and Applications, ENEN3001, has been introduced as a compulsory course at the Department of Environmental Engineering, Curtin University Malaysia since 2017. The objective of the course is to develop a theoretical and practical basis for green engineering, including the fundamental of green chemistry. Upon successful completion of this course, the students are expected to develop knowledge and skills related to theoretical and practical aspects of green engineering. These include applying theoretical principles of green engineering concepts to eco-industrial development to meet specific parameters and communicating the results in written and oral forms.

Course description

Green Engineering Principles and Applications (ENEN3001) is a 25 credit value (Australian University system) that equal to four-credit-hour course (Australian University system) and contains of lectures (4 hours per week) and tutorial (1 hour per week). ENEN3001 is only for the students in the department of environmental engineering and it covers various topic such as principles of green engineering, pollution prevention, cleaner production, environmental impact assessment, eco-industrial development. In the course outline, all topics are orally taught thought power-point presentation, discussed in class and some design of product is assigned as team projects. The new teaching approach was developed through the involvement of students in the discussion of some real-life problem in the class as part of the PBL (Problem Based Learning) and more advance in design of product including the presentation as part of Project-Based Learning.

In Curtin University Malaysia, the Programme Outcomes (PO) are the foundation toward achievement of Curtin Graduates Attributes upon graduation, achievement of Programme Educational Objectives in few years, and a contributing factor towards the achievement of the University's Vision and Mission. In order to achieve the POs, we have the following model where each assessment contributes the Course Outcomes (CO), and the CO then contribute to the PO. The PO for Environmental Engineering Programme are presented in Table 1. The CO of Green Engineering Principles and Applications course are addressed to PO1, PO2, and PO3.

In Curtin University Malaysia, it is mandatory for lecturer to explain the course outline to the students in the first week of academic semester including the learning activities conducted throughout the course, learning resource, their

assessments and its map to the CO. The CO, teaching and assessment approach for the Green Engineering Principles and Applications is presented in Table 2. Green Engineering Principles and Applications has four assessments that linked to the CO and finally address the PO achievement of the programme. The assessment structure on students are as follows:

1. Assignments (10%) addresses CO 3 and evaluate PO3.
2. Quizzes (20%) addresses CO 1 and CO2 and evaluate PO1 and PO2.
3. Projects (30%) addresses CO3 and evaluate PO3

Final examination (40%) addresses CO1 and evaluate PO1 and PO2.

Table 1. Program Outcomes (POs) for Environmental Engineering Degree Programme

PO– 1	**Engineering Knowledge** Integrate mathematics, sciences, and knowledge from environmental engineering sub-disciplines to design and evaluate complex environmental engineering problems
PO– 2	**Problem Analysis** Analyse and formulate solutions for complex environmental engineering problems
PO– 3	**Design of Solutions** Integrate learning with client requirements to produce feasible, practical, and environmentally sustainable solutions to complex environmental engineering problems
PO – 4	**Investigation** Utilize research based knowledge and methods to investigate and synthesize information to formulate solutions for complex environmental engineering problems
PO – 5	**Usage of Modern Tools** Identify and apply suitable modern engineering and IT tools, including prediction and modelling, to complete complex environmental engineering analyses successfully
PO – 6	**The Engineer and Society** Practice environmental engineering with a global perspective and appropriate standards pertaining to health, safety, legal and cultural issues to solutions for complex engineering problems
PO – 7	**Environment and Sustainability** Understand the impact of engineering solutions on society and the environment and produce sustainable solutions to complex engineering problems
PO – 8	**Ethics** Demonstrate ethical principles in the context of environmental engineering practice
PO – 9	**Individual and Team Work** Apply knowledge of environmental engineering principles as a member and leader in a team, in managing projects in a multidisciplinary environment
PO – 10	**Communication** Communicate effectively and professionally to stakeholders on complex environmental engineering activities
PO –	**Project Management**

11	Apply project management principles as a member and leader in a team, in managing all projects in a multidisciplinary environment
PO – 12	**Life-long Learning** Recognise the need for and be prepared to continually build upon knowledge and skills acquired during the undergraduate learning

Table 2. Mapping of CO for the Green Engineering Principles and Applications Course.

No	Course Outcomes (COs)	Teaching approach	Assessment
CO1	Identify principles that underpin sustainable or cleaner production.	Lecture & Tutorial	Examination
CO2	Apply the methodology of life-cycle analysis for various engineering processes towards minimizing environmental impacts.	Lecture & Tutorial	Examination
CO3	Evaluate current practices in reducing waste from the process industry.	Project based learning	Technical Report & Oral presentation

Assignment component of the Green Engineering Principles and Applications course contributes to 10% of the total assessment. The assignment is performed individually to write a review about the pollution prevention in worldwide. This assignment is following the aspect of active learning term of problem-based learning and interactive class learning. Project component contributes to 30% of the total assessment. The project is performed in groups of three members, and each group is required to write up one report and do a presentation. The project is following the aspect of active learning in term of interactive class learning and project based learning through discussions among the students and lecturers during the project presentation.

Course development

As the principal portion of this course development, active learning approach is focusing on heavily participation of student in class activities rather than being passive receptors of material. As the primary knowledge creators and focus, the students are required to involve in solving of real-life problem as well as treatment according to the principles of green chemistry. They are also expected to interact with other students as well as the lecturer in analysis and conclusion of the experimental outcomes. The following are the aspects of active learning engaged in Green Engineering Principles and Applications:

1. Problem-Based Learning (PBL): student is required to identify two chemical process industries in term of source reduction according to the parameter such as material substitution, process substitution, and process elimination. Student is also required to investigate the pollution (air, water, and solid) from the industry and provides a summary of the outputs, quantities and concentrations of reported contaminants from major operations. Student should recommend the pollution prevention for the particular industry.

2. Interactive Class Learning: the lecture promotes the some application of green chemistry principles to the students and they are required to discuss the risk, hazard, and exposure; solvents: are they necessary?; plastic bags and microbes; and provide better solution of the problem in correlated of twelve principle of green chemistry. The students are then requested to propose scientific analysis for the problem.
3. Project-Based Learning: A group project is formed among the students to prepare a design of product that has heavily influenced human life and following the principles of green engineering. The following list presents some possible scopes:
   - Consumer goods
   - Home appliance
   - Household goods

   The design should meet the scope and assessed with three selection criteria as follows:
   - The design of product should be inventive, systematic and of scientific value.
   - The design of product should be beneficial for human health and environmental.
   - The design of product should be applicable and a significant impact to industry or society.

CO and PO Attainment

In calculating student's attainment of the PO, the attainment of each assessment is determined by the percentage of the students achieving 50% or above. The CO attainment is then calculated from weighted average of the assessment attainment. Finally, the programme-level PO attainment can be determined by averaging the PO attainment of each student in the cohort. The sample of CO attainment for the Green Engineering Principles and Applications course in academic session 2018 as shown in Fig. 1.

a. **PO1:** The mark of overall PO1 (76%) is achieved for the course which is more than 50%.
b. **PO2:** The mark of overall PO2 (100%) is achieved for the course which is more than 50%.
c. **PO3:** The mark of overall PO3 (100%) is achieved for the course which is more than 50%.

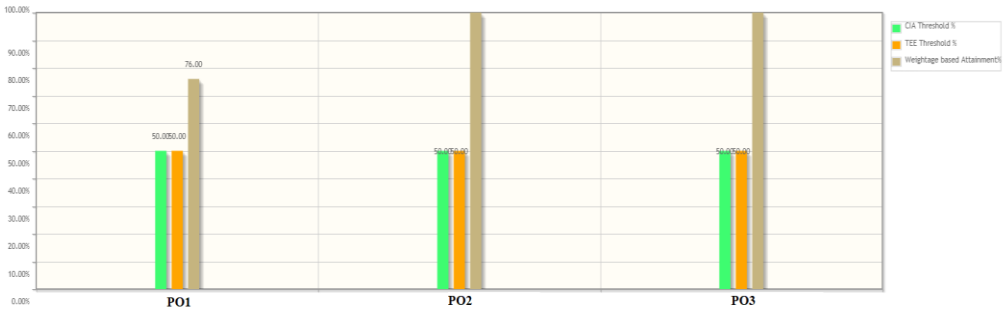


Figure 1. Course Outcome Attainment

Student evaluation

Table 3. The evaluation of course summary report of Green Engineering Principles and Applications

eVALUate Unit Summary Report
Evaluation period: 2018 Semester 1

Unit Name: Green Engineering Principles and Applications	Response Rate: 100 %		
Unit Code: ENEN3001			
eVALUate quantitative items	**Percentage Agreement**	**Percentage Disagreement**	**Percentage Unable to Judge**
1. The learning outcomes in this unit are clearly identified.	**100**	**0**	**0**
2. The learning experiences in this unit help me to achieve the learning outcomes.	**100**	**0**	**0**
3. The learning resources in this unit help me to achieve the learning outcomes.	**100**	**0**	**0**
4. The assessment tasks in this unit evaluate my achievement of the learning outcomes.	**100**	**0**	**0**
5. Feedback on my work in this unit helps me to achieve the learning outcomes.	**80**	**0**	**20**
6. The workload in this unit is appropriate to the achievement of the learning outcomes.	**100**	**0**	**0**
7. The quality of teaching in this unit helps me to achieve the learning outcomes.	**100**	**0**	**0**
8. I am motivated to achieve the learning outcomes in this unit.	**80**	**0**	**20**
9. I make best use of the learning experiences in this unit.	**80**	**0**	**20**
10. I think about how I can learn more effectively in this unit.	**80**	**0**	**20**
11. Overall, I am satisfied with this unit.	**100**	**0**	**0**

The evaluation and feedback of the course delivery by the students is an essential part for development of course in the future. The students are required to answer eleven question that related to teaching and learning process corresponds to course outcome at the end of the semester. The evaluation of course summary report of Green Engineering Principles and Applications over semester 1, 2018 is given in Table 3. All students agree that learning experience, learning recourse, assessment task, the workload and quality teaching in this course support the students to achieve the learning outcome. In general, all response and comments of students showed that they are very motivated, happy and satisfied with course structure and teaching methods. Improvement of students' performance and retention of information was reflected in the final evaluations.

Benefits of active learning in Teaching and Learning Process

The benefit of active learning is to emphasize the student to be engaged with the content in order to learn and to be a main creators and focus of knowledge (Cattaneo, 2017). On the contrary, in the conventional teaching and learning procedure, instructor is emphasized to be an expert of everything and student passively receiving the materials. The active learning approach during the Green Engineering Principles and Applications course capable to inspire and encourage the students to improve their participation in the classroom and meeting, actively involved in group discussion and also develop their critical thinking. Students are perceived to be a part of classroom community and finally they will feel respected and appreciated. Active learning improves the students' performance on course

assessments, students' perceptions of inclusiveness in the classroom, enhance their retention of information, and escalate standardized exam scores (Freeman et al., 2014; Marteel-Parrish, 2014). This approach also provides the connection between students and instructors, thus instructors are able to evaluate students' understanding in real time. (Styers, Van Zandt, & Hayden, 2018; Ulrich et al., 2017). The concept was supported by previous study that learning outcomes is totally improved when the students are linked with course content (Haak, HilleRisLambers, Pitre, & Freeman, 2011; Matsuda, Azaiza, & Salani, 2017). In the engineering education, work effectively as a team member, is one of the important parameter for engineers beside possess in-depth technical knowledge, because a team working needs following skills such as leadership, communication, discussing, arguing, willingness to give opinion or ideas, and organising meetings (Andersen, 2003; Johnson, Sanderson, Wang, & Parker, 2017). The active learning process enhanced the students' skills to interact and communicate orally with each other thus very beneficial for a team working succeed the projects.

Conclusions

The active learning approach in the Green Engineering Principles and Applications course is able to improves the students' performance on course assessments, students' perceptions of inclusiveness in the classroom, enhance their retention of information, and escalate standardized exam scores as well as enhance the connection of students with course content, thus improving overall learning outcomes. All response and comments of students in the course evaluation showed that they are very motivated, happy and satisfied with course structure and teaching methods. Improvement of students' performance and retention of information was reflected in the final evaluations. Overall, the active learning approach of solving real-life problems had enable the students to achieve the CO and PO as outlined in the Environmental Engineering undergraduate programmes offered at the Curtin University Malaysia.

References

Adkins, J. K. (2018). Active learning and formative assessment in a user-centered design course. *Information Systems Education Journal, 16*(4), 34-40.

Aktumen, M., & Bulut, M. (2013). Teacher candidates' opinions on real life problems designed in GeoGebra Software. *The Anthropologist, 16*(1-2), 167-176. doi:10.1080/09720073.2013.11891345

Anastas, P. T., & Warner, J. C. (2000). Green chemistry: Theory and practice. Oxford: Oxford University Press.

Andersen, A. N. (2003). Preparing Engineering Students to Work in a Global Environment to co-operate, to communicate and to compete. Paper presented at the SEFI 2003 Conference: Global Engineer: Education and Training for Mobility.

Bonwell, C. C., & Eison, J. A. (1991). Active Learning: Creating Excitement in the Classroom. NJ: Wiley.

Cattaneo, K. H. (2017). Telling active learning pedagogies apart: From theory to practice. *Journal of New Approaches in Educational Research* (NAER Journal), *6*(2), 144-152.

Cavanagh, M. (2011). Students' experiences of active engagement through cooperative learning activities in lectures. *Active Learning in Higher Education, 12*(1), 23-33. doi:10.1177/1469787410387724

Della, S, S., & Fochi, V. (2016). Flipped Classroom: the point of view of the students. *Journal of e-Learning and Knowledge Society, 12*(3).

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proc Natl Acad Sci U S A, 111*(23), 8410-8415. doi:10.1073/pnas.1319030111

Goodwin, J. (2003). Students' Perspectives on debate exercises in content area classes. *Communication Education, 52*(2), 157-163. doi:10.1080/03634520302466

Günter, T., Akkuzu, N., & Alpat, Ş. (2017). Understanding 'green chemistry' and 'sustainability': an example of problem-based learning (PBL). *Research in Science & Technological Education, 35*(4), 500-520. doi:10.1080/02635143.2017.1353964

Haak, D. C., HilleRisLambers, J., Pitre, E., & Freeman, S. (2011). Increased structure and active learning reduce the achievement gap in introductory biology. *Science, 332*(6034), 1213-1216. doi:10.1126/science.1204820

Hesketh, R. P. (2017). Introduction to sustainable and green engineering: general principles and targets. In M. A. Abraham (Ed.), Encyclopedia of sustainable technologies (pp. 497-507). Oxford: Elsevier.

Hyun, J., Ediger, R., & Lee, D. (2017). Students' satisfaction on their learning process in active learning and traditional classrooms. *International Journal of Teaching and Learning in Higher Education, 29*, 108–118.

Johnson, T., Sanderson, B., Wang, C. H., & Parker, F. (2017). Factors Associated With First-Time NCLEX-RN Success: A Descriptive Research Study. J Nurs Educ, 56(9), 542-545. doi:10.3928/01484834-20170817-05

Karpudewan, M., Hj Ismail, Z., & Mohamed, N. (2011). Greening a chemistry teaching methods course at the school of educational studies, Universiti Sains Malaysia. *Journal of Education for Sustainable Development, 5*(2), 197-214. doi:10.1177/097340821100500210

Kennedy, S. A. (2016). Design of a dynamic undergraduate green chemistry course. *Journal of Chemical Education, 93*(4), 645-649. doi:10.1021/acs.jchemed.5b00432

Li, C.H., Wu, M.H., & Lin, W.L. (2019). The use of a "Think-Pair-Share" brainstorming advance organizer to prepare learners to listen in the L2 classroom. *International Journal of Listening, 33*(2), 114-127. doi:10.1080/10904018.2017.1394193

Lumpkin, A., Achen, R., & Dodd, R. (2015). Focusing teaching on students: Examining student perceptions of learning strategies. *Quest, 67*(4), 352-366. doi:10.1080/00336297.2015.1082143

Marteel-Parrish, A. E. (2014). Teaching green and sustainable chemistry: A revised one-semester course based on inspirations and challenges. *Journal of Chemical Education, 91*(7), 1084-1086. doi:10.1021/ed400393b

Martin, T., Rivale, S. D., & Diller, K. R. (2007). Comparison of student learning in challenge-based and traditional instruction in biomedical engineering. *Annals of Biomedical Engineering, 35*(8), 1312-1323. doi:10.1007/s10439-007-9297-7

Matsuda, Y., Azaiza, K., & Salani, D. (2017). Flipping the classroom without flipping out the students: Working with an instructional designer in an undergraduate evidence-based nursing practice course. *Quarterly Review of Distance Education, 18*(1), 17-27.

Mellecker, R. R., Witherspoon, L., & Watterson, T. (2013). Active learning: Educational experiences enhanced through technology-driven active game play. *The Journal of Educational Research, 106*(5), 352-359. doi:10.1080/00220671.2012.736429

Styers, M. L., Van Zandt, P. A., & Hayden, K. L. (2018). active learning in flipped life science courses promotes development of critical thinking skills. *CBE Life Sci Educ, 17*(3), ar39. doi:10.1187/cbe.16-11-0332

Ulrich, D. L., Brewer, T., Steele-Johnson, D., Juvina, I., Peyton, E., & Hammond, C. (2017). Team-based learning's effects on standardized test scores and student reactions. *Journal on Excellence in College Teaching, 28*(2), 133-165.

Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher Education, 46*(2), 153-184.

Wang, M.Y., Li, X.Y., & He, L.N. (2018). Green chemistry education and activity in China. *Current Opinion in Green and Sustainable Chemistry, 13*, 123-129. doi:https://doi.org/10.1016/j.cogsc.2018.07.001

IJIET, e-ISSN 2548-8430, p-ISSN 2548-8422, Vol. 3, No. 2, July 2019

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

MOTHER TONGUE ISSUES AND CHALLENGE IN LEARNING ENGLISH AS FOREIGN LANGUAGE

Lina Septianasari, Fourus Huznatul A., and Yasmika Baihaqi
STKIP Muhammadiyah Bogor, Universitas Al-Ghifari, and Universitas Muhammadiyah Metro
linasary62@yahoo.co.id, fourusabqoriyyah@gmail.com, yasmikabaihaqi@gmail.com
DOI: https://doi.org/10.24071/ijiet.2019.030208
received 29 May 2019; revised 14 June 2019; accepted 25 June 2019

Abstract
Learning English as a foreign language (EFL) is quite challenging for particular learners. Their mother tongue somehow can be such an obstacle in comprehending the language they learn. The interference of their mother tongue more or less influence EFL Learners' language acquisition. The aims of this research are to find out (1) the interference of learners mother tongue in acquiring English; and (2) the challenge faced by EFL Learners in acquiring English as their foreign language. The population of this sample is EFL learners at University level in Bandung. The researcher used purposive sampling to collect the data. Triangulation is used during the data collection process. Those are observation, test items, and interview. Relevant theories are used to analyze the data. The data shows that the grammatical rule and phonological aspect of learners' first language affect their language production. The different sound systems in Bahasa Indonesia and English becomes a challenge for EFL learners in their speech production. The interference of mother tongue has been identified both in English vowels and consonants.

Keywords: interference, first language issue, language acquisition

Introduction
Acquiring English as a Foreign Language (EFL) is quite challenging for some learners. Errors and mistakes may be found in their speech production, including the interference of learners' first language. It becomes a challenge for the learners and the teachers (see (Khan, 2011); (Wu, Wu, & Le, 2014); (Rasheed, Zeeshan, & Zaidi, 2017) (Rasheed et al., 2017)(Rasheed et al., 2017)(Rasheed et al., 2017)(Rasheed et al., 2017)and (Widodo & Dewi, 2018)). Languages which come from different language family have distinctive features that need an intensive process to acquire. Moreover, the interference of EFL learners' mother tongue is commonly found during their learning process. Beside Bahasa Indonesia, this phenomenon is also found in different first language (see (Derakhshan & Karimi, 2015); (Sinha, et.al, 2009); and (Fatiloro, 2015)). It will not be a serious problem to the hearers as long as the mutual intelligibility is not seriously affected by the first language interference. On the other hand, communication breakdown may

occur when native speakers hear interfered utterance. The interference can possibly harm the mutual intelligibility between a native speaker and an EFL speaker.

Mother tongue plays an important role in functioning target language (see (Sinha et al., 2009) and (Yadav, 2014)). As previously known in Krashen's hypothesis that acquisition distinguished succeed in learning a second language (Castello, 2015), this hypothesis is also applicable in learning a foreign language. First language acquisition significantly affects EFL speakers in transferring the message into the target language (for further reading see Allard et. al. (2011); Lemhöfer et. al. (2010); and Maniam & Kesevan (2016)). Whether positively or negatively, the speaker's mother tongue will affect their second language acquisition (Erarslan & Hol, 2014). Moreover, the similarities between learners' mother tongue and language ease them in transferring the message positively and vice versa.

The different linguistic environment in the first language (L1) and second language (L2) can obstruct SLA. Hossain (2018), on his research about the difficulties in learning English faced by the EFL students in Thakurgaon District (Bangladesh), figured out that the participants of his research got such difficulties in comprehending English grammar, acquiring English vocabulary, and improving their speaking skill. In a different study, (Lao, 2017)(Lao, 2017) found out a more complex problem that is faced by the participants of his research. Furthermore, he stated that commonly they have a problem in acquiring English phonology, morphology, syntax, and semantics. In another occasion, Syaputri (2019) has investigated that the speech production of EFL learners in Indonesia is morphologically interfered by Bahasa Indonesia. Furthermore, Dweik & Othman (2017), Hennessey et. al (2014), and Aldaberdikyzy (2013) argued that lexical and grammatical interference occurred in learners' speech production because they lack knowledge in the awareness of first language and second language use. Generally speaking, mother tongue interference affects learners' speech production. The linguistic environment of Austronesian language differs from a Germanic language. Common languages spoken in Indonesia, both National language and Regional language, are phonologically and syntactically different from English. Furthermore, English is not commonly used in daily conversation for it is spoken as a foreign language in Indonesia. As a result, the negative interference of mother tongue must be conquered by EFL learners to avoid communication breakdown between EFL learner and native speaker.

Several types of research about interference had been conducted by linguists around the world. Some researches even pointed out that interference also occurs between two languages which come from the same language family (see (Tsai, 2015), (Pitoyo, 2017), and (Kuhn, 2007). In another case, Rana Abid Thyab had conducted research under the title "Mother-Tongue Interference in the Acquisition of English Articles by L1 Arabic Students" aimed to pinpoint previous researches about English articles (Thyab, 2016). The result of this research showed that different grammatical rules of Arabic article and English article puzzled students in using English and it caused them to make some errors. Another research entitled "The Problem of Interference and Its Influence of Learners Native

Language" pointed out that the more difference between L1 and L2, the higher possibility of interference will be found (Jafarova, 2017). From those two previous researches, the researchers were interested to investigate the interference of Bahasa Indonesia as L1 of the participants into English as their L2.

Literature review

English Phonology

Sound and speech are the primary elements in language. These two elements are used in utterance to convey the message brought by speaker to hearer. The smallest unit of language sound that can convey meaning is called as phoneme. Different speech community has different components of its phoneme since every language has its distinctive characters. According to its phonetic transcription which is formulated by phoneticians and phonologists, there are 13 vowels in English (Ogden, 2009). These vowels convey fundamental construction of speech as the matter of fact that even one vowel in English can stand for one meaning of utterance, for example 'a' /ə/. Afterwards, these kind of sounds can also be combined with another type of sound named consonants to construct meaning in speech. Here is the table of English vowels and consonants (further reading (Musk, 2010), (McMahon, 2002), and (Ogden, 2009)).

Table 1 English Vowels and Consonants

Vowel		Consonant			
/iː/	/ʌ/	/p/	/f/	/ʃ/	/n/
/i/	/ɑː/	/b/	/v/	/ʒ/	/ŋ/
/ɪ/	/ɒ/	/t/	/θ/	/h/	/l/
/e/	/ɔː/	/d/	/ð/	/ʧ/	/r/
/æ/	/ʊ/	/k/	/s/	/ʤ/	/j/
/ɜː/	/u ː/	/g /	/z/	/m/	/w/
/ə/					

Beside vowel sounds and consonant sounds, diphthong and triphthong are also found in English (McMahon, 2002). Briefly there are 8 diphthongs and 5 triphthongs in English spoken by various dialects of English around the globe.

Bahasa Indonesia Phonology

As belonging to Austronesian language family, Bahasa Indonesia has distinctive characteristics compared to English. At the domain of phonetics and phonology, the structure of sounds in Bahasa Indonesia is relatively simpler than English. Bahasa Indonesia has 6 vowels which consists of /i/, /u/, /e/, /o/, /ə/, and /a/ (Chaer, 2009). On the other hand, the consonants in Bahasa Indonesia are classified into 22 types of sound (Chaer, 2009). Those classifications of consonants can be seen at the table below:

Table 2 Consonants in Bahasa Indonesia

Consonant			
/b/	/h/	/n/	/s/
/c/	/j/	/ŋ/	/ŝ/
/f/	/k/	/ñ/	/t/
/d/	/l/	/p/	/w/
/g /	/m/	/r/	/x/
/y/	/z/		

Lapolawi in Masitoh (2013) pointed out that there are 4 loan consonants in Bahasa Indonesia which consist of /f/, / ŝ/, /z/, and /x/. All of those fricatives are borrowed from foreign language. Unlike English, Bahasa Indonesia only has 3 diphthongs; [aw], [ay], and [oy].

Regarding to above explanation, it can be concluded that English has 24 consonants, 13 vowels, 8 diphthongs, and 5 triphthongs (McMahon, 2002). On the contrary, Bahasa Indonesia only has 22 consonants, 6 vowels, and 3 diphthongs (Chaer, 2009). These distinctive phonological features more or less influence learners' speech production. Given the distinction of English phonology and Bahasa Indonesia phonology, this study is aimed to investigate (1) the interference of learners' mother tongue in acquiring English; and (2) the challenge faced by EFL Learners in acquiring English as their foreign language.

Method

This research was naturally qualitative research which was aimed to investigate the interference of learners' first language towards the acquisition of learners' foreign language. The participants of this study were the freshman students from Telkom University. 21 students participated in this research. All of them are in intermediate level. Triangulation is used as the research instrument to collect the data in this study. It consists of observation and test item. To answer research questions, the researchers observed the way participants used English for daily basis. The researchers also asked them to create a 5 minute video about themselves to analyze their speech production. The participants had to make the video by using compatible recorder, microphone, and camera to create a high quality video. The submitted video then was analyzed based on phonological theories in English and Bahasa Indonesia by using comparative method.

Findings and Discussion

In line with other research findings of various studies about mother tongue interference, the data finding in this study shows that commonly the interferences which are produced by the participants appeared in the way of pronouncing consonants. Here are the research findings of this study.

Table 3 Research Findings of L1 Interference

Type of Phonological Interference	Alphabetic Transcription	Phonetic Transcription	Mother Tongue Interference	Note
Uvular	Person	/'pɜ:rsn/	/'pɜ:Rsn/	[r] alveolar pronounced as [R] uvular
	Friend	/frend/	/fRend/	
Velar	Technology	/tek'nɑ:lədʒi/	/tek'nɔlɔgi/	[dʒ] palate-alveolar pronounced as [g] velar
Alveolar	Lisen	/'lɪsn/	/'lɪzn/	[s] alveolar pronounced as [z] alveolar
	Please	/pli:z/	/pli:s/	[z] alveolar pronounced as [s] alveolar
	There	/ðer/	/deR/	[ð] dental pronounced as [d] alveolar
Palatal	Citizen	/'sɪtɪzn/	/'sɪtɪjen/	[z] alveolar pronounced as [j] palatal
Vowel Elimination	Take	/teɪk/	/tek/	Eliminating [ɪ]
	Crowded	/'kraʊdɪd/	/'krʊdɪd/	Eliminating [a]
Consonant Elimination	Humor	/'hju:mər/	/'hu:mɒr/	Eliminating [j]
Epsilon (Open-mid Front)	Serious	/sɪriəs/	/sɛrius/	[ɪ] small capital pronounced as epsilon
Lower Case [u]	Serious	/sɪriəs/	/sɛrius/	[ə] schwa pronounced as [u] lower case

These data were taken from the videos which had been made by the participants. The participants produced mispronunciations in some lexicon they uttered. Based on the observation, the mispronounce sounds were interfered by the participants' mother tongue. In fact, the interference was not only found in phonological domain, but also it was found in syntactical domain. The details are discussed on the next sub titles.

First Language Interference

After collecting and analyzing the data, the researchers figured out that there were two domains of interference made by the participants. They are phonological interference and syntactical interference.

a. Phonological Interference

Phonological interference was found both in consonant sounds and vowel sounds. The most common mistake appeared in the way they pronounced alveolar [r] which was interfered by the uvular sound [R]. Look at the discussion of the data below! The left side phonemes are from Standard English sounds and the right side phonemes are the sounds of participants' speech production.

1. Person /'pɜ:rsn/ -> /'pɜ:Rsn/

   The alphabet 'R' in Bahasa Indonesia commonly is pronounced in uvular sound [R]. Meanwhile in English, this alphabet can be pronounced in alveolar sound or uvular sound depending on its phonological circumstance. This distinctive feature affects the way L2 learners in producing word like in datum (1). Some participants improperly pronounced the word <person> by using uvular sound [R] instead of alveolar [r].

2. Technology /tek'nɑ:lədʒi/ -> /tek'nɔləgi/

   The word 'Technology' is pronounced as /tek'nɑ:lədʒi/ in English. The alphabet 'O' and 'G' in Bahasa Indonesia are commonly pronounced as open-mid back sound [ɔ] instead of being pronounced as central sound [ə] like the way it is usually pronounced in English. Meanwhile the alphabet 'G' in Bahasa Indonesia is commonly pronounced in velar sound [g] instead of in another sound like [ʤ] as it is used to be pronounced in English. Generally speaking, the different way to pronounce alphabet in Bahasa Indonesia and English affects the way L2 learners in pronouncing English word. This problem interferences L2 learners' speech production. The mispronunciation of word 'technology' in datum (2) is caused by this distinctive. The L2 speakers were still being affected by some sounds in Bahasa Indonesia.

3. Listen /'lɪsn/ -> /'lɪzn/
4. Please /pli:z/ -> /pli:s/

   English alphabet 'S' has alveolar sounds and is sometimes pronounced as [s] or [z]. On the other hand, alphabet 'S' in Bahasa Indonesia is only pronounced in alveolar sound [s]. In datum (3) and datum (4), the English L2 speakers mispronounced alveolar sounds in morpheme <listen> and <please>. Those data showed that the participants were puzzled in differentiating alveolar sounds [s] and [z] in English because in speakers' L1, the alphabet 'S' is only pronounced as sound [s].

5. There /ðer/ -> /deR/

   Another mispronounce case of alveolar occurred in the way the participants differed the sound [ð] and [d]. Bahasa Indonesia does not have sound [ð]. Generally speaking, the beginners of English learners sometime would rather pronounce sound [d] instead of sound [ð] because this

alveolar sound has the closest sounding with dental sound [ð]. In datum (5), the participant of this research mispronounced the dental sound [ð] into alveolar sound [d].

6. Citizen /'sɪtɪzn/ -> /'sɪtɪjen/
   The native speaker of Bahasa Indonesia sometimes pronounce the alphabet of Bahasa Indonesia 'Z' as in alveolar [z] for standard use of Bahasa Indonesia and palatal sound [j] for non-standard use of Bahasa Indonesia. This speaking habit influences them in reading and speaking English words. Datum (6) shows kind of mistake of participant's pronunciation in uttering <citizen>. Instead of pronouncing alveolar [z], he simply pronounced it with palatal sound [j].
7. Humor /'hju:mər/ -> /'hu:mər/
   In Bahasa Indonesia, when the alphabet 'H' meets 'U', it will be pronounced as /hu/. Differing from Bahasa Indonesia phonological condition, these two alphabets are pronounced differently in English phonological rule. In English, when the alphabet 'H' is combined with the alphabet 'U' like in <humor>, it will be pronounced as /'hju:mər/. The common problem faced by English L2 learners in Indonesia is the interference of Bahasa Indonesia phonology as it can be seen in datum (7). The speech production of the speaker in datum (7) showed the phonological interference of Bahasa Indonesia into English. This datum shows consonant elimination at the first syllable of the morpheme <humor>. The speech production of English L2 learners pointed out that they eliminated the palatal sound [j] at the first syllable.
8. Serious /sɪriəs/ -> /sɛrius/
   Another case of interference can be found in the way the English L2 learners uttering epsilon. Datum (8) shows that the speaker mispronounced the word 'serious' by pronouncing the open-mid front [ɛ]. The first vowel of this word should be pronounced in [ɪ] in accordance with Standard English phonology. Somehow mostly alphabet 'E' in Bahasa Indonesia is pronounced in epsilon. This circumstance may become the cause of mother tongue or first language interference.
9. Take /teɪk/ -> /tek/
10. Crowded /'kraʊdɪd/ -> /'krʊdɪd/
    Commonly vocalic alphabet of Bahasa Indonesia will be pronounced in one sound of vowel for each. In contrast, English has different term for its vocalic system. In particular term and condition, one English vocalic alphabet can be pronounced in single vowel, double vowels, or diphthong. Data (9) and (10) shows type of interference in vowel elimination. The speakers' pronunciation show that they eliminate some vowels in their utterance. In datum (9), the speaker eliminated vowel sound [ɪ]. Meanwhile in datum (10), the speaker eliminated the vowel sound [a].

b. Syntactical Interference
   Since Bahasa Indonesia and English have quite distinctive feature in grammar rules, some English L2 learners are still struggling to comprehensively set their speech production free from any mother tongue interference, including

in syntax. Based on data analysis, there are three types of syntactical interference made by the participants. Here are the result!

11. I like dark color **because makes me look not fat**.

    In datum (11), the speaker's utterance is ungrammatical. This utterance is considered as incomplete expression strongly because of the first language interference. The message that this participant wanted to express is *Saya suka warna gelap karena membuat saya terlihat tidak gendut* 'I like dark color because it makes me not look fat'. It can be seen that in datum (11), the English L2 learner missed the subject "I" for the second clause and misplaced words 'look' and 'not' at the dependent clause of datum (11). The speech production or interpretation of source language into target language was still be interfered by the grammatical construction of speaker's mother tongue.

12. It's **5 fact** about me.

    Bahasa Indonesia and English have different pattern in pointing out singular and plural noun. Quantifier and reduplication are used in Bahasa Indonesia to indicate plural noun. Meanwhile in English, suffix –s and –es are used to indicate plural noun. In datum (12), the participant was interfered by the grammatical rule of his first language by not adding the suffix –s after the plural noun 'fact'. Literally, it is considered as ungrammatical form in English.

13. Say 7 **facts interesting** about you!

    Another common problem which was found in this study is related to English word order which at some points is different with the word order of Bahasa Indonesia. It can be seen from datum (13) that the English L2 speaker created incorrect word order in expressing noun phrase. In Bahasa Indonesia, this expression should be constructed from head and modifier '*fakta-fakta menarik'*. On the contrary, the construction of this expression should be set by modifier and head 'interesting facts'. The speaker of datum (13) was still interfered by his mother tongue since he uttered incorrect word order for this expression. The construction of his incorrect expression is same with the pattern of noun phrase in Bahasa Indonesia.

Challenge Faced by EFL Learners in Acquiring English

Basic concept that a L2 learner should comprehend is the linguistic system of the language they learn which may differ from their L1. The more differences exist between these two language, the more challenge of mother tongue interference that should be conquered by the L2 learners. Based on the data, it can be seen that the common challenges faced by EFL learners with Bahasa Indonesia as their first language are in phonological domain and syntactic domain.

Bahasa Indonesia has similar way to pronounce its alphabets and its phonetics. In contrast, English has different condition. English alphabets have different phone with Bahasa Indonesia alphabets. In addition, there are 13 vowels and 24 consonants in English. Meanwhile in Bahasa Indonesia, there are only 6 vowels and 22 consonants all in all. This distinction affects learners' language acquisition. Once or twice they have to deal with the interference of their first language linguistic system.

The challenge also comes from syntactical point of view. As previously discussed, some participants still created some errors which indicate any interference of their first language. The distinctive feature of speakers' first language and foreign language becomes one of many aspects of first language interference. They spoke in English but once or twice they still used the grammatical rules of their first language. Incomplete expressions, plural nouns, and word order are some interferential problem they should deal with.

Conclusion

The findings of this study show that phonological interference of native speakers of Bahasa Indonesia occurred both in consonant sounds and vowel sounds. The different phonetic sounds between Bahasa Indonesia and English becomes one of many reasons of first language interference. Besides, the pronunciation of English alphabets and Bahasa Indonesia alphabets are different in some particular way. This condition interferes the L2 learners in pronouncing some English words. As the result, we found some phonological interference of Learners' mother tongue when they spoke in English. In short, mother tongue interferences in Indonesian Learners' pronunciation and syntax occur because their first language has some different feature or linguistic environment with the targeted language that they learn. The challenges that they have to conquer are English phonology and syntax in order to avoid making error, mistake, or mispronouncing the English words.

References

Aldaberdikyzy, A. (2013). Lexical interferences of Kazakh-Russian bilingual children of preschool age: A sociolinguistic survey. *Procedia-Social and Behavioral Science*, *93*, 1885–1888. https://doi.org/https://doi.org/10.1016/j.sbspro.2013.10.134

Allard, D., Bourdeau, J., & Mizoguchi, R. (2011). Addressing cultural and native language interference in second language acquisition. *CALICO Journal*, *28*(3), 677–698.

Andi-pallawa, B., & Alam, A. F. A. (2013). A comparative analysis between English and Indonesian phonological systems. *International Journal of English Language Education*, *1*(3). https://doi.org/10.5296/ijele.v1i3.3892

Castello, D. (2015). *First language acquisition and classroom language learning : Similarities and differences*. Birmingham.

Chaer, A. (2009). *Fonologi bahasa Indonesia*. Jakarta: Rineka Cipta.

Derakhshan, A., & Karimi, E. (2015). The interference of first language and second language acquisition. *Theory and Practice in Language Studies*, *5*(10), 2112–2117. https://doi.org/http://dx.doi.org/10.17507/tpls.0510.19

Dweik, B. S., & Othman, Z. A. (2017). Lexical and grammatical interference in the translation of written texts from Arabic into English. *Academic Research International*, *8*(3), 65–70. Retrieved from http://www.journals.savap.org.pk

Erarslan, A., & Hol, D. (2014). Language interference on English : Transfer on the vocabulary, tense and preposition use of freshmen Turkish EFL learners. *ELTA Journal*, *2*(2), 4–22.

Fatiloro, O. F. (2015). Tackling the challenges of teaching English language as second language (ESL) In Nigeria. *IOSR Journal of Research and Method in Education, 5*(2), 26–30. https://doi.org/10.9790/7388-05212630

Hennessey, J. E., Bell, T. S., & Kwortnik, R. J. (2014). Lexical interference in semantic processing of simple words: Implications for brand names. *Psychology and Marketing, 21*(2). https://doi.org/https://doi.org/10.1002/mar.20046

Hossain, A. (2018). Difficulties of learning English Language at the secondary level : A case study of Thakurgaon district. *Journal of Education and Training, 5(*2), 165–181. https://doi.org/10.5296/jet.v5i2.13500

Jafarova, K. (2017). The problem of interference and its influence of learners native language. *Trakia Journal of Science, 15*(4), 292–296. https://doi.org/10.15547/tjs.2017.04.003

Khan, I. A. (2011). Challenges of teaching/learning English and management. *Global Journal of Human Social Science, 11*(8).

Kuhn, S. (2007). Interference of L1 English in L2 French lexical processing. Retrieved from http://surface.syr.edu/honors_capstone/562

Lao, Y. A. D. (2017). First language interferences into English writing skill of the XIIth grade students of SMA Negeri 1 Kupang in academic year 2017/2018. *International Journal of Research -Granthaalayah, 5*(12), 33–44. https://doi.org/10.5281/zenodo.1133564

Lemhöfer, K., Schriefers, H., & Hanique, I. (2010). Native language effects in learning second-language grammatical gender : A training study. *Acta Psychologica, 135*(2), 150–158. https://doi.org/10.1016/j.actpsy.2010.06.001

Maniam, M., & Kesevan, H. V. (2016). Mother tongue syntactical influence in a ESL class. *International Journal of Language and Linguistics, 3*(3), 46–50. Retrieved from www.ijllnet.com

Masitoh, S. (2013). *Interferensi fonologis bahasa Sunda dalam bahasa Indonesia oleh penutur sunda*. Gadjah Mada University.

McMahon, A. (2002). An Introduction to English Phonology. Edinburgh: Edinburgh University Press.

Musk, N. (2010). The vowels & consonants of English. Retrieved from https://old.liu.se/ikk/english/files/Course Webpages/english-3/1.206147/CompendiumVowelsConsonantsofEnglish.pdf

Ogden, R. (2009). *An introduction to English phonetics*. Edinburgh: Edinburgh University Press.

Pitoyo, A. (2017). Interferensi bahasa Jawa ke dalam bahasa Indonesia mahasiswa program studi pendidikan bahasa dan sastra Indonesia dalam perkuliahan keprotokolan. *Jurnal Pena Indonesia (JPI), 3*(2), 42–58.

Rasheed, S., Zeeshan, M., & Zaidi, N. A. (2017). Challenges of teaching English language in a multilingual setting : An investigation at government girls secondary schools of Quetta, Baluchistan, Pakistan. *International Journal of English Linguistics, 7*(4), 149–157. https://doi.org/10.5539/ijel.v7n4p149

Sinha, A., Banerjee, N., Sinha, A., & Shastri, R. K. (2009). Interference of first language in the acquisition of second language. *Journal of Psychology and*

Counseling, 1(7), 117–122. Retrieved from http://www.academicjournals.org/JPC

Syaputri, W. (2019). First Language Morphological Interference of English Language Learners (EFL). *Advances in Social Science, Education and Humanities Research, 301*, 617–619. Retrieved from http://creativecommons.org/licenses/by-nc/4.0/

Thyab, R. A. (2016). Mother-Tongue interference in the acquisition of English articles by L1 Arabic students. *Journal of Education and Practice, 7*(3), 1–4.

Tsai, W.-L. (2015). English interferences in German sentences. *Linguistics and Literature Studies, 3*(6), 278–283. https://doi.org/10.13189/lls.2015.030604

Utami, D. H., Wello, B., & Atmowardoyo, H. (2017). The phonological interference of students' first language in pronouncing English sounds (A Case Study on Buginese and Makassarese Students). *ELT Worldwide Journal, 4*(2), 205–212.

Villarroel, W. R., & Estrada, S. C. (2017). Phonological interference from Kichwa and Spanish to English when producing the /b/, /v/, /th/, /d/, /sh/ phonemes. *Revista Publicando, 4*(12), 310–320. Retrieved from https://pdfs.semanticscholar.org/b017/23e9559970a03bfe6d88a0afc4a5c3e80ed6.pdf

Widodo, A., & Dewi, S. R. (2018). Revealing problems on teaching English for young learners at Al-Azhar 55 Islamic primary school Yogyakarta and how to solve them. *Varia Pendidikan, 30*(2), 21–29.

Wu, R., Wu, R., & Le, V. T. (2014). Challenges of adults in learning English as a second language : Focus on adult education in China. *Journal of Language Teaching and Research, 5*(5), 1132–1138. https://doi.org/10.4304/jltr.5.5.1132-1138

Yadav, M. K. (2014). Role of mother tongue in second language learning. *International Journal of Research, 1*(11), 572–582. Retrieved from https://www.researchgate.net/publication/283355564_Role_of_Mother_Tongue_in_Second_Language_Learning

IJIET, e-ISSN 2548-8430, p-ISSN 2548-8422, Vol. 3, No. 2, July 2019

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

CURRENT SCHOOL CURRICULUM ISSUES: A CASE OF STUDENT-TEACHER PREPARATION IN HIGHER EDUCATION

Christina Kristiyani
Central China Normal University
Home Base: Sanata Dharma University
kristiyani@usd.ac.id
DOI: https://doi.org/10.24071/ijiet.2019.030209
Received 5 May 2019; revised 19 June 2019; accepted 28 June 2019

Abstract
The current curriculum change in Indonesia school has direct impact on the schools, students, teachers, as well as the student teachers. This paper analyses the problems found in the student teachers' preparation in planning the learning activities in a form of teaching documents. Therefore, the data being analyzed are teaching preparation documents produced by the student teachers before they went for the internship program in schools. The data were from the class documents in the Learning Program Design class and Micro Teaching class during February 2015 – June 2016. The analysis found that the problems are related to the translation from the basic competence into the indicator of achievement and the assessment planning. In addition, they also had difficulties in planning the teaching scenario using the scientific approach. Some solutions are proposed in this paper.

Keywords: student teachers, curriculum, core competence, basic competence, assessment, scientific method

Introduction
After its independence in 1945, Indonesia has undergone several changes in the school curriculum. Figure 1 summarizes the curricula used in schools after the independence. Barton, Garvis and Ryan (2014) explain that in response to the curriculum change, teachers need to ensure that the needs of their students, their school and their communities are being met. This is not an easy process for educators especially when they deal with learners from different background, which, among others, are different background of cultures, knowledge, beliefs of the purpose of learning, and learning styles. The changes of curriculum in Indonesia have affected to what happened in the school. Therefore, the learning process, the teaching documents produced by the teachers also change based on the curriculum's requirements.

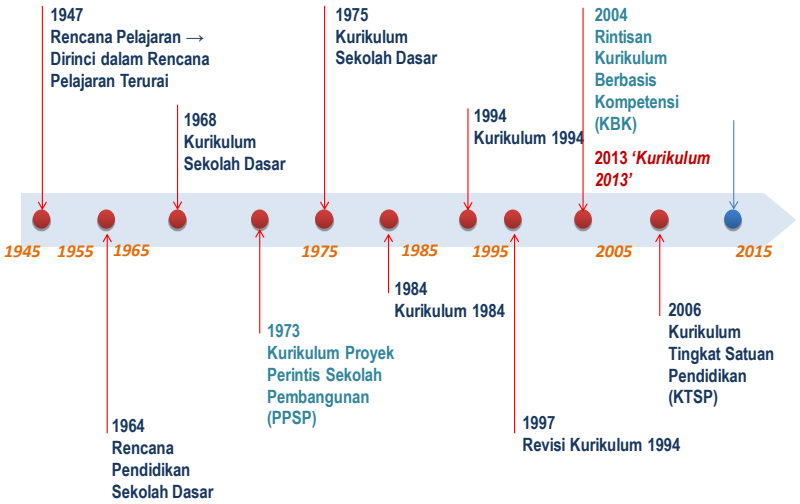


Figure 1. School Curricula Implemented in Indonesia after the Independence Day

Mulyasa (in PJJ PGSD module, accessed from http://pjjpgsd.dikti.go.id) mentioned that the curriculum changes are related to the following aspects.

1. Goals; the goals are related to society view of life and nation vision.
2. Content and structure; the changes are related to the contents of the school subjects, the students' activities, the learning approach.
3. Curriculum strategy; the changes are related to the implementation of the curriculum, whether there is a necessary change in the teaching and learning concept used, in the administration system, in the guidance and counselling, in the learning assessment.
4. Curriculum facilities; the changes are related to facilities and human resources needed.
5. Curriculum evaluation system; the changes involve the appropriate way to measure the effectiveness of the curriculum.

The education review team (OECD/Asian Development Bank, 2015) underlines that the most significant period of Indonesia's curriculum change was in 2004. In that year, there were two important changes in Indonesia's curriculum which are in line with "international best practice" (2015, p. 268). The first change was the shift from the content-based curricula to competency-based curricula. The second change was the decentralization of curriculum implementation.

The 2013 is based on the foundation of the 2004 curriculum and 2006 curriculum. Based on the education review team's finding, the specific focus of the curriculum is "an optimal balance between the development of cognitive skills, particularly those of critical thinking and problem solving, and development of student character and behavior" (OECD/Asian Development Bank, 2015, p. 269). In addition, the curriculum also focuses more on religious instruction and character education. The previous curriculum has Competency standard as the reference when teaching. And this Competency Standard is divided into several Basic Competences. The current curriculum has the core competency as the reference. The Core Competencies covers 4 aspects; core

competency number 1 is spiritual attitude, core competency number 2 is social attitude, core competency number 3 is knowledge and core competency number 4 is skills.

Then each of the lesson plan, teachers need to incorporate all the core competencies when picking one basic competence. In addition, they have to set assessment to ensure that the pupils have achieved the goal of the learning. Therefore, teachers have to set up the indicators of achievement as the basis of learning assessment. The first thing to do is that they need to take the Core competencies (4 core competencies) and choose the suitable basic competences. After that teachers need to make the indicators of learning achievement. The indicators should be measurable. After planning the learning process, the teachers need to plan the assessment also. The assessment method in the newest curriculum emphasizes the authentic assessment. Therefore, the assessments may cover, among others, portfolio assessment, open questions, and process assessments.

Table 1 shows the implementation of curriculum in the hand of the teachers, especially for English teachers.

Table 1. Differences of the Aspects of Planning Done by the Teachers of English

2006 Curriculum	2013 Curriculum
Competence standard Basic Competence 1. For Listening 2. For Speaking 3. For Reading (comprehending the text and analyisng the text by breaking it down into language elements and rhetorical steps) 4. For Writing Indicators of Achievement Learning Goals Methods, Media Teaching Scenario with EEC Assessment methods, examples of test items, and rubric for assessing	Core Competencies (CC): 1. CC 1 (Spiritual attitude) 2. CC 2 (Social attitude) 3. CC 3 (Cognitive aspect) 4. CC 4 (Skills aspect) Basic Competence Indicators of Achievement Learning Goals Methods, Media Teaching Scenario with Scientific Approach Assessment methods, examples of test items, and rubric for assessing

The current curriculum, curriculum 2013, puts forward the implementation of scientific approach in the teaching process in all subjects taught in schools. In the teaching activities where scientific approach is implemented, the teachers have to focus on three aspect of learning, namely cognitive, affective and psycho motoric. Figure 2 describes the three aspects of learning.

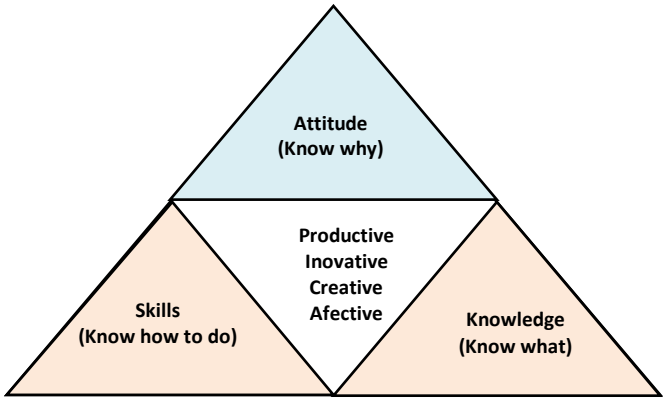


Figure 2. The incorporation of three aspects of learning in the learning process (translated from Kementerian Pendidikan dan Kebudayaan, 2013b)

The previous learning approach followed the EEC (elaboration, exploration, and confirmation) cycle. The 2013 curriculum's learning approach is scientific approach, which has the following stages: observation, questioning, associating, experimenting, and networking.

This curriculum is not implemented in all schools at the same time. The government has a policy to have a "smooth" transition from 2006 curriculum to 2013 curriculum. So there were some stages set by the government to apply the curriculum change. In 2012 there were the trainings conducted for schools; for the principals, for the teachers. In the academic year of 2013/2014, there are only some schools appointed to implement the curriculum, and other schools continued doing the preparation. The new curriculum was only implemented in the 1st grade, 4th grade, 7th grade, and the 10th grade. In 2014/2015, the new curriculum is implemented in the 1st, 2nd, 4th, 5th, 7th, 8th, 10th, and 11th grade. And in 2015/2016, all grade levels used the new curriculum. And in 2016/2017, the number of the school appointed to implement the new curriculum was increased.

When the curriculum changes, the direct effect will be seen in school area, namely the work of the principals, the work of the teachers and of course the students. Further impact will be of course in the higher institution which train the future teachers. The higher institution should adapt to the changes and should ensure that the contents of the subjects taught in line with the students' very near future life. Universities with their Teachers' Training and Education Faculty prepare their students to be future teachers. The Teachers' Training and Education Faculty in Indonesia will have an internship program for their students. Internship program is done in schools with the purpose of practicing the teaching skills with the real students in the classroom. Therefore, there should be materials taught to equip the students to go in the internship program. In the English Education Program of university level, one of the relevant materials is school curriculum in the Learning Program Design Class and in the Micro teaching class (Panduan Akademik PBI, 2010).

This paper is going to see **the problems or difficulties faced by the student teachers in the teachers' training faculty in response to the changes in the**

curriculum. Further, it will propose **some solutions to solve those problems or difficulties**. The analysis on this paper is going to use the students' documents obtained in the previous year (January – May 2016) to see the students' problems related to the curriculum changes. The documents are in a form of soft file teaching preparation made by the students.

To avoid different perception on some key terms used in the paper, the following is a brief definition on the key terms.

1. Student teachers

This term refers to students who study in the Teachers' Training and Education Faculty on their semester 6th or above. They go for their internship program to schools in the 7th or 8th semester as student teachers. Therefore, in this paper, the university students who will go to the internship program is labelled as student teachers and the students who will be their subjects in teaching will be labelled as the pupils.

2. Core competency

Core competency is the operationalization of graduate standard. It is the description of main competency which is grouped in the attitude aspect, knowledge aspect, and skill aspects (covering affective, cognitive, and psycho motoric) to be learned by the pupils in certain level and different subjects (Kementerian Pendidikan dan Kebudayaan: 2013a).

3. Indicator of learning achievement

Indicator of learning achievement is expected learning outcome made to see the achievement of the basic competence taught. This is as the basis for learning assessment.

4. Scientific approach

Scientific approach is a learning approach covering observing, questioning, associating, experimenting, and net-working (Kementerian Pendidikan dan Kebudayaan: 2013a).

Findings and Discussion

*Problems found in the student teachers' teaching document*s

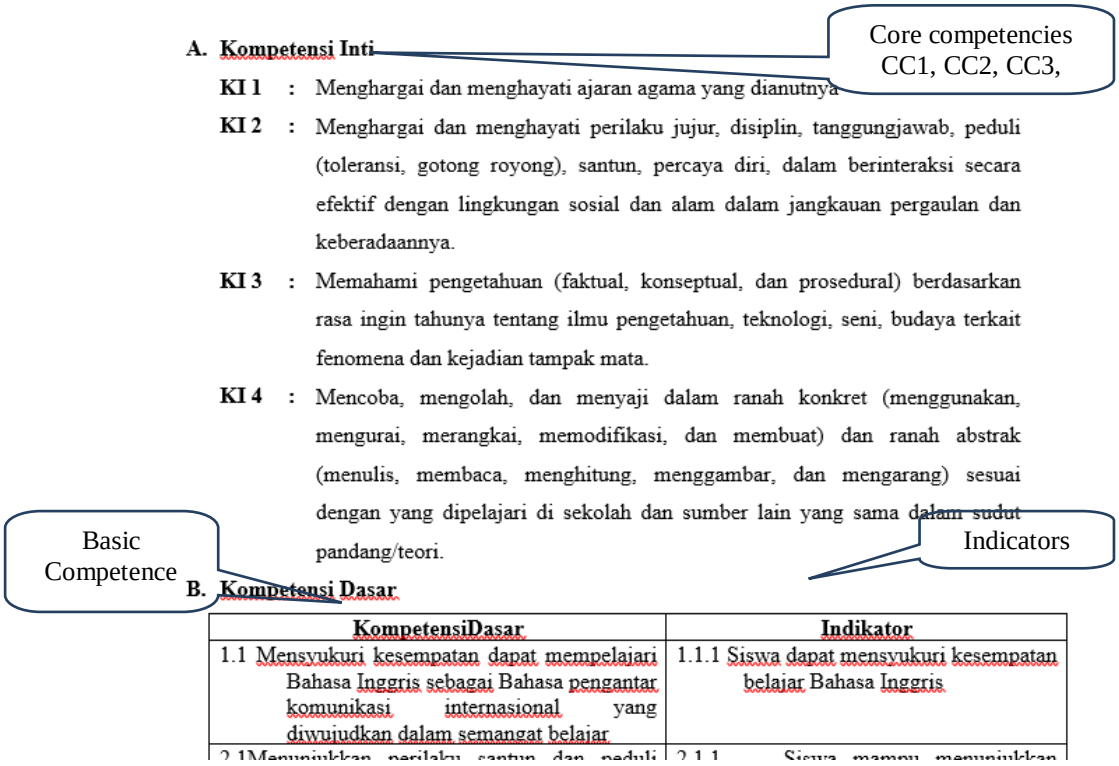
There are some problems found when the student teachers prepare their teaching documents before going for their internship program in school in their semester 7th or 8th. The following are problems (or difficulties) found in their documents.

1. Formulation of indicators of learning achievement

The student teachers found to have difficulties in formulating the learning indicators, especially indicators covering all core competencies. The following is an example of a lesson plan made by a student teacher. This lesson plan is for English subject of Junior High school (middle school) of grade 8 semester 1. The topic is "What are you doing?"

The indicator mentioned in Excerpt 1 which is "*siswa dapat mensyukuri kesempatan belajar Bahasa Inggris*" (the students are able to be thankful for the opportunity to learn English lesson) is not different from the Basic Competence. The Basic Competence says "*Mensyukuri kesempatan dapat mempelajari Bahasa Inggris sebagai Bahasa pengantar komunikasi internasional yang diwujudkan*

dalam semangat belajar" (Be thankful for the opportunity of being able to learn English as an international lingua franca expressed in the learning motivation). In fact, the Basic Competence directly says that the thanking action is expressed in the learning motivation. Therefore, it should be one part in the indicator, meaning how a teacher can see the motivation of the pupils.



In addition, the indicator found in Excerpt 1, namely **be thankful**, is not measurable and not expressed in a form of what action the pupils have to show. Therefore, it will be difficult for the student teachers to set the assessment for this particular indicator. How can the student teachers assess that the pupils are thankful for the opportunities of studying English?

The requirement for having measurable or an action verb in the indicator is in line with what Gammon mentions (2003). There are some characteristics of indicators of learning based on New Economics Foundation. Indicators of learning should cover AIM, which means that indicators have **A**ction focused, **I**mportant, **M**easurable, and **S**imple (Gammon, 2003: p. 5).

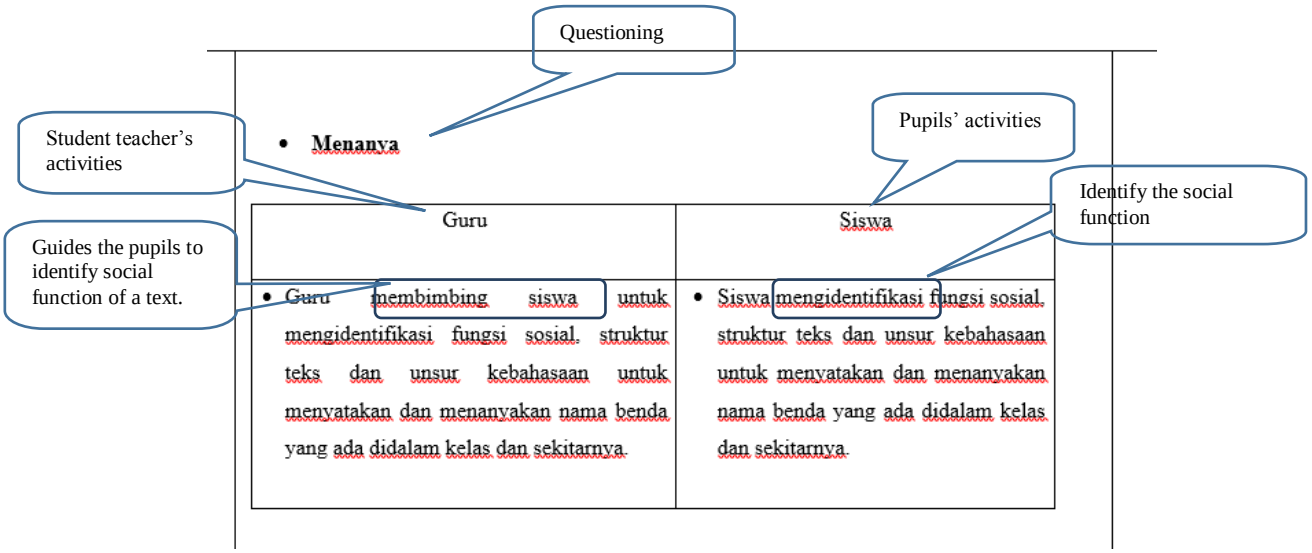
2. Planning the teaching scenario using scientific method

The recommended approach from the government in teaching is scientific approach. Even though this approach is rooted from science and mathematics area, it is worth trying for teachers of other subjects. Harmer (2001: p. 79) mentions that,

What the interested teacher needs to do when confronted with a new method, for example, is to see if and/or how it incorporates theories of language and learning. What procedures does it incorporate? Are they appropriate and effective for the classroom situation that the teacher works with? In the case of techniques

and activities, two questions seem worth asking: are they satisfying for both students and teachers, and do they actually achieve what they set out to achieve?

After analyzing the documents for teaching preparation made by the student teachers, the next problem is related to the activities under the scientific approach used. The approaches used by the student teachers seem to be only copy pasted in the generic stages given by the government. Sometimes it is difficult for the student teachers to make sure that they can really use the scientific approach in their teaching. An example of this is found in Excerpt 2. In her lesson plan, the student teacher mentions that she is going to use the scientific approach in her teaching activities. The teaching scenario that the student teacher made also mentions the scientific approach stages. However, the activities done are not directly related to the stages mentioned in the scenario (see Excerpt 2).



Excerpt 2. The student teacher's teaching scenario

The teaching scenario in Excerpt 2 still shows the domination of teachers in the questioning stage. The excerpt does not show the questioning activities. In fact, it is the pupils who should undergo the process of questioning. The responsibility of the student teacher is to facilitate the process for example by giving the stimulus so that the students can do the questioning process. By doing the questioning process, the pupils are expected to be more critical and to train their creative thinking. Cottrell (2005: viii) mentions that "[critical thinking involves] working out whether we believe what we see or hear; taking steps to find out whether something is likely to be true; arguing our own case if someone doesn't believe us? (in Moon, 2008, p. 35).

3. Planning the assessment methods

Assessment should be related closely to the indicators set at the beginning of the lesson plan. So if the indicators are really measurable, the assessment can be conducted as planned. The problems found in the student teachers' documents concerning the assessments are as follows.

a. The student teachers do not have a one-to-one match between the indicator and the assessment methods.

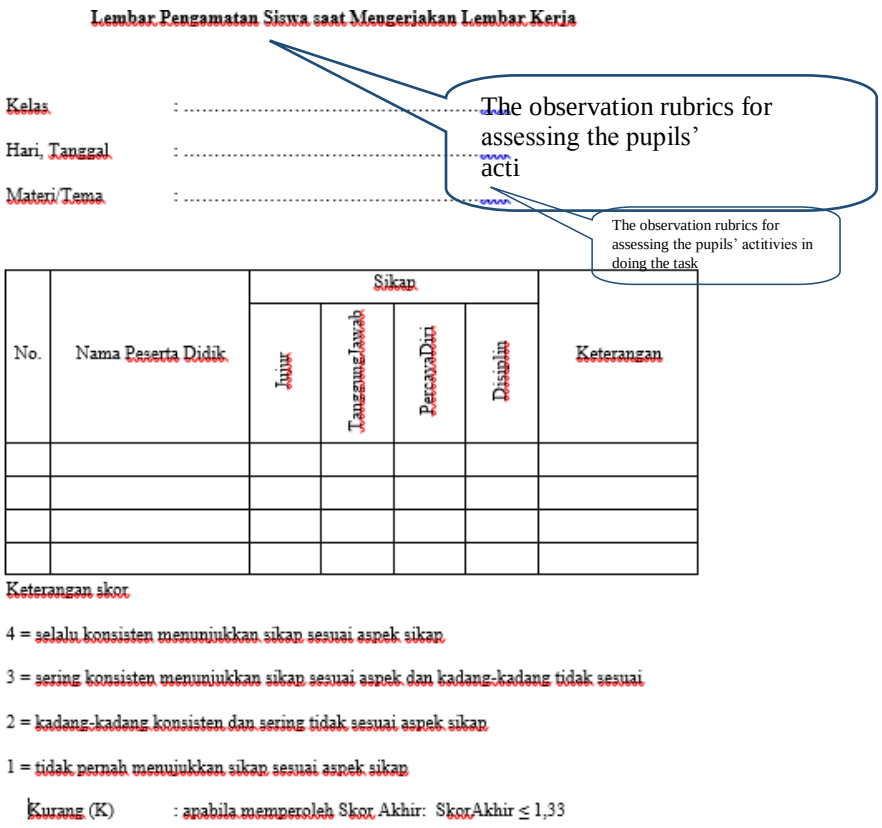
b. The student teachers do not have certain rubrics for assessing the attitudes for core competence 1 and core competence 2.

Table 2 is summary of an analysis of a student teacher plan for assessing the pupils' learning achievement.

Table 2. Summary of analysis on the student teacher's plan for assessment

Core Competence	Indicator of learning achievement	Assessment	Notes
1	*Siswa dapat mensyukuri kesempatan belajar bahasa Inggris* (The pupils are able to be thankful for the opportunity to learn English)	Not made	
2	*a. Siswa mampu menunjukkan perilaku santun dan peduli dalam berkomunikasi dengan guru dan teman.* (The pupils are able to show polite attitude and care in communicating with the teachers and their peers).	Not made	
	b. Siswa mampu menunjukkan perilaku jujur, disiplin, percaya diri, dan bertanggung jawab dalam mengerjakan tugas individu ataupun kelompok. (The pupils are able to show honest, discipline, confident, and responsible attitude in doing the task individually or in group)	Made, but the rubric is not clear mentioning how certain attitude as categorized as honest, discipline, responsible, and confident.	See Excerpt 3

From Table 2, it was found that the student teacher did not make one-to-one match of the indicator and the assessment because some indicators are not assessed (number 1, and 2a). In addition, for assessing the attitude related to honesty, discipline, confidence, and responsibility, this student teacher did not specify the expected action to represent the concurrent attitudes. Therefore, even though there is a rubric for observing the attitude, it is difficult to decide whether certain attitude is present in the pupil's performance. Excerpt 3 is the example of observation rubric made by the student teacher.



Lembar Pengamatan Siswa saat Mengerjakan Lembar Kerja

Kelas : .....

Hari, Tanggal : .....

Materi/Tema : .....

The observation rubrics for assessing the pupils' acti

The observation rubrics for assessing the pupils' actitivies in doing the task

No.	Nama Peserta Didik	Sikap				Keterangan
		Jujur	TanggungJawab	PercayaDiri	Disiplin	

Keterangan skor

4 = selalu konsisten menunjukkan sikap sesuai aspek sikap

3 = sering konsisten menunjukkan sikap sesuai aspek dan kadang-kadang tidak sesuai

2 = kadang-kadang konsisten dan sering tidak sesuai aspek sikap

1 = tidak pernah menujukkan sikap sesuai aspek sikap

Kurang (K) : apabila memperoleh Skor Akhir: SkorAkhir ≤ 1,33

Excerpt 3. Observation rubric for assessing the pupils' attitudes

Even though the student teacher still does not provide the detailed assessment criteria, she already realizes that assessment for attitude should be conducted using for example observation rubrics and not a test. In addition, it is done during the process of the learning. It is in line with the authentic assessment concept. Authentic assessment (Paris & Ayres: (1999), pp. 7-8) "collects diverse evidence of students' learning from multiple activities." Calfee & Hiebert, (1990) in Paris and Ayres mention that "Rather than relying on single tests or narrow samples of students' knowledge, authentic assessment involves gathering evidence over time from many different academic activities" (1999: p. 8). Teachers can make rubrics in the assessment to create level of clarity in the learning target, to promote a greater degree of internal locus of control (Gettinger & Kohler, 2006 in Shindler, 2010: pp. 215-216). It will also reduce the students' need to ask questions, increase reliability, provide clarity, and include process assessment aspects (Shindler, 2010: p. 216).

Proposed solutions

The following proposed solutions are for the institution as well as for the student teachers.

a. For the study program/the higher institution

The fact that subjects or classes designed to prepare the student teachers to be ready for the internship school program makes the problems more complicated. There are series of related pedagogical subjects for this programs, namely

Approaches, Methods, and Techniques, Language Teaching Media, Learning Program Design, Language Assessment, and Micro Teaching. It is understandable that most of the time, students cannot relate what the learn in one class to others related classes. That is why when planning the documents in their preparation of the internship program, most of the students missed the whole related picture of planning and assessing. For the institution, it is suggested that the lecturers for the related classes work together to facilitate the student teachers more with integrated understanding and practice related to planning and assessing the learning process for the school pupils. The emphasis can be on the practice of the use of action verbs in the indicators and analyzing whether the indicators of achievement are assessed correctly.

b. For the student teachers

In relation to setting the indicator, planning the teaching scenario, and planning the assessment, the student teachers need to pay attention on the following aspects:

1) Indicators should have a measurable verb/action verb. So the student teachers should use the measurable verbs in making the indicators. They can refer to any literature related to measurable verbs in setting the indicators.
2) In relation to assessment, the student teachers should compare whether their indicators of learning planned in the lesson plan have a one-to-one match with the assessment they plan at the end of the lesson plan. The next number, number 3) to 6) are related to the problems related to planning the teaching scenario.
3) The student teachers need to be more creative in providing media to stimulate the pupils in the observing stage. They can use, among others, related videos, flashcard, story board, and real objects.
4) They need to involve the pupils more in the learning to facilitate discovery learning. They can do it, among others, by doing group activities, providing some engaging activities as to stimulate the pupils to explore more.
5) Student teachers need to act as facilitators. In this way, they will reduce the dominant role of the teacher in the class. Therefore, when planning the scenario, the student teachers have to write activities to facilitate the student centered class.

   In the case of scientific approach used, student teacher can do the following: For example in teaching reading, a teacher can give the example of how questioning can be done. So the teacher can tell what kinds of questions which may arise during reading the texts. This particular example is given by a teacher to her pupils so that the pupils will do the same thing, for example asking themselves what they are missing in their reading activities.
6) Last but not least, as novice teachers they have to be willing to explore the teaching style more and be motivated to have reflective teaching as to improve the quality of their teaching.

The education review team, however, mentions that "there are no quick solutions to achieving the proposed pedagogy and classroom assessment reforms. All teachers need to have increased motivation and capability. They will need to

become ongoing learners who are innovative, adaptive and reflective practitioners" (OECD/Asian Development Bank, 2015: 269).

Conclusion

Curriculum changes always bring challenges to all related education parties. Problems and difficulties will occur but the solutions for them can be always available if the teachers and the pupils work together, even for the student teachers and the institution where they study at. In this paper, there are three problems found in the teaching documents for the student teachers. They are problems in formulating the learning indicators, planning the teaching scenario using scientific approach and the planning the assessment. This paper also recommends some actions necessary to take. In addition, teaching is always an art. So there is actually not a fixed formula of how to have effective and successful teaching. By having a reflective teaching, teachers or student teachers will lead better class activities and achieve the teaching goals easily.

References

Barton, G. M., Garvis, S., & Ryan, M. E. (2014). Curriculum to the classroom: Investigating the spatial practices of curriculum implementation in Queensland schools and its implications for teacher education. *The Australian Journal of Teacher Education, 39*(3), 166-177.

Cottrell. (2005). *Critical thinking: An exploration of theory and practice.* Abingdon, Oxon: Routledge.

Gammon, B. (2003). *Assessing learning in museum environment: A practical guide for museum evaluators*. http://sciencecentres.org.uk/events/reports/indicators_learning_1103_gammon.pdf, accessed on December 27th, 2016.

Harmer, J. (2001). *The practice of English language teaching* (3rd Ed.). London: Longman.

Kementerian Pendidikan dan Kebudayaan. (2013a). Kompetensi Dasar: Sekolah Menengah Pertama (SMP)/Madrasah Tsanawiyah (MTs). Jakarta: Kementerian Pendidikan dan Kebudayaan.

Kementerian Pendidikan dan Kebudayaan. (2013b). Konsep Pendekatan Scientific (Power Point Presentation Slide). PPT-2.2-1.

Mulyasa. (2013). PJJ PGSD module, accessed from http://pjjpgsd.dikti.go.id

OECD/Asian Development Bank (2015). *Education in Indonesia*: Raising to the Challenge, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264230750-en

Paris, Scott G., Ayres, Linda R., (1999). *Becoming Reflective Students and Teachers: With Portfolios and Authentic Assessment*. Washington, D.C.: American Psychological Association

Shindler, J. (2010). *Transformative classroom management: Positive strategies to engage all students and promote a psychology of success*. San Fransisco: Jossey-Bass

Tim Kurikulum, (2010). *Panduan Akademik PBI*. Yogyakarta: Pendidikan Bahasa Inggris.

http://teacher.nsrl.rochester.edu/phy_labs/AppendixE/AppendixE.html

IJIET, e-ISSN 2548-8430, p-ISSN 2548-8422, Vol. 3, No. 2, July 2019

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

FOSTERING STUDENTS' PRESENTATION SKILL USING INFOGRAPHIC: THE IMPLEMENTATION OF PROJECT-BASED LEARNING IN ENGLISH FOR SPECIFIC PURPOSES

Gusti Nyoman Ayu Sukerti and Kadek Yogi Susana
State Polytechnic of Bali and STMIK STIKOM, Indonesia
ayusukerti@pnb.ac.id and misteryogis21@gmail.com
DOI: https://doi.org/10.24071/ijiet.2019.030210
received 29 May 2019; revised 14 June 2019; accepted 29 June 2019

Abstract

Mastering English skill for students at a vocational institution of higher education is a mounting problem as the students are expected to develop practical English skills in specific disciplinary knowledge and internalize the attitudes and professional values. Implementation of project-based learning (PBL) in teaching speaking particularly the presentation skill can be seen as an alternative to cover both areas as it encourages students to develop higher critical thinking, enhances deep learning and motivates students to be independent learners with exceptional self-management. This article presents the results of the study on the impact of project-based learning on students' speaking achievement particularly their presentation skills and students' perceptions on the PBL stages. Participants were 19 fourth-semester students enrolled in a three-year undergraduate program in Electrical Engineering. The goal of this project was to drive students' engagement in speaking activities and put students in the language-specific setting in which language was naturally used based on the project characteristics. This research employed mixed methods in which the quantitative data, i.e., pre-test and post-test were analyzed using SPSS statistic 21. The finding showed that the correlation coefficient (r) was 0,575. Based on the interpretation scale of correlation coefficient by Guilford (1965), the range of the correlation coefficients is between the range of 0,401-0,700 which means that the correlation is quite strong. Based on the result of analysis using SPSS statistics 21 with 95% level of confidence, it was revealed that $-t_{count} < -t_{table}$ (-6.269 < -2,10092) and the significance value (p_{value}) of 2-tailed was less than 0,05 (0,000 < 0,05). It can be concluded that H1 was accepted and H0 was rejected signifying that there was a significant effect of PBL implementation in improving students' speaking achievement. In addition, this study also analyzed qualitative data collected from google form and focus group discussion to gain students' perception towards the implementation of PBL using infographic. The results of online questionnaire revealed that students experienced deep and autonomous learning through the stages conducted in the project. They gained better understanding on grammar and vocabulary during peer review and showed positive attitude in designing infographics as they could revise the structure of their presentation while designing the infographics' wireframes.

Consequently, learning speaking through project-based learning using infographic helped to enhance students' engagement to series of works within the projects and foster their collaborative and communicative skills while working together in groups. The results showed a significant effect of PBL on students' presentation skills and improve soft skills compatible to workplace requirements. Considering the positive result of this study, PBL is recommended to be applied in teaching speaking for students in higher vocational education as it gives beneficial impact on students' content learning and soft skills.

Keywords: project-based learning, English for specific purposes, presentation skill, soft skill, infographic

Introduction

The process of teaching English for Specific Purposes in vocational higher education presents a challenge because its main goal has to be placed as and complementary element to students' soft skill development and workplace requirements. The classroom activities are designed to meet the goal of assisting students to acquire productive skills and internalize the generic characteristics associated with professional ethics in workplace. Soft skills including collaborative skill, self-management and problem solving are expected to be acquired as an integral part of classroom activities. However, the process of teaching speaking for students in higher vocational education has been centered on traditional approach in which students are required to complete task within a short period of time after students are given theoretical background knowledge in through lecturing.

Previous studies on the implementation of teacher-centered learning or conventional teaching strategy stress on the fact that it hardly contributes benefits to the development of students' collaboration, creativity, communication, and critical thinking. Cristillo (2010:37) alluded that teacher-centered pedagogy is associated with top-down, hierarchal pedagogy and for reinforcing passive learning, rote memorization and hindering the development of higher-level cognitive skills. In this context, teachers act as the main source of information and provide direct instruction in transferring knowledge to students. Direct instruction as a teacher-centered method, sets the teacher as the one that has main power in the teaching and learning process, in which he/she supposed to encourage the students to construct their own learning. Instead of having discussion and conversation with the students to develop their ideas, the students are assumed to have little useful knowledge (Astawa, Artini, and Nitiasih, 2017:1149).

The modern focus on student-centeredness in language learning has led many teachers to investigate the benefits of incorporating project-based learning (PBL) into their English-language classes (Noom-ura: 2013). Project-Based Learning (PBL) is a student-driven, teacher-facilitated approach to learning. Learners pursue knowledge by asking questions that have piqued their natural curiosity (Bell, 2010: 39). Praba, Artini, and Ramendra (2018:2) further highlighted that project-based learning provides the opportunity to create productive and enjoyable

classroom atmosphere through the integration of students' knowledge, attitude, and skills.

Student-centered approach such as project-based learning is considered beneficial and relevant to the characteristics and goals of ESP courses. In detail, ESP aims at developing learners' not only language but also professional understanding, which is similar to the principles of PBL (Foss et al, 2007; Petersen & Nassaji, 2017). PBL does help learners explore in-depth the areas or topics that interest them or are related to their careers. Learners will be able to develop both language, specialized knowledge, and other necessary skills through undertaking and completing projects in certain fields (Giang: 2017).

Some researchers have examined the effectiveness of the student-centered approach used in teaching speaking including the implementation of project-based learning which provides an opportunity for students to experience self-directed learning including Maulany (2013), Dewi (2018), Permatasari (2013), Ichsan et.al (2017), Zare-Behtash and Sarlak (2017), Abubakar (2015), Bolsunovskaya et al (2015), and Noom-ura (2013). Besides the advantages mentioned above, project-based learning can be implemented in self-study activities, which is especially important in view of the reduced number of academic hours assigned for foreign language for specific purposes in accordance with the academic program. Even though those studies highlighted the use of PBL in speaking skill and ESP, this present study differs from those previous researches as this study used infographic as the final project to be published in students' social media account. Infographic was chosen as the media for students to construct the content of their presentations because it gave chance for students to plan the structure of their presentations better as well as express their creativity. Infographic was also hoped to enhance students' motivation to work on project under serious topic, i.e., Proposing Green Energy Power Plant in Indonesia.

Method

This experimental research employed quantitative design to analyze the impact of PBL on students' speaking achievement. The data was taken from pre-test and post-test of students' presentation before and after the implementation of PBL in the learning process. Nineteen fourth semester students majoring in Informatics Management of Electrical Engineering Department took part as subjects of this research. Quantitative data was addressed as the core and provided the main analysis of data collection and was the extent by which project-based learning affects students' speaking achievement. According to Creswell and Clark (2006:60), the quantitative data collection involves several steps: (i) Administration of a pre-test measuring the dependent variable (speaking skill) based on speaking rubric (ii) Application of the experimental treatment to the subjects, (iii) Administration of a post-test measuring the dependent variable (speaking skill) based on speaking rubric. This study applied the SPSS (Statistical Package for Social Sciences) statistics 21 to analyze the quantitative data. Paired samples statistics were used to determine the mean score in the pre-test and post-test in order to see if there was an improvement in students' achievement. Meanwhile, paired samples correlations were used to obtain the correlation

coefficient (R). This analysis was used to analyze the relationship between before and after project-based learning is implemented in the learning process. A hypothesis in the process of analyzing data using SPSS was formulated, i.e., H0 means there was no significant impact of PBL on students' achievement during the implementation while H1 means there was a significant impact of PBL in improving students' speaking competence. The analysis was made based on the comparison of tcount and ttable and probability value. If $t_{count} < t_{table}$ or $-t_{count} > -t_{table}$ then H0 was accepted, if $t_{count} > t_{table}$ or $-t_{count} < -t_{table}$ then H0 was rejected. The level of significance was determined using level of confidence 95% or level of error 5% ($\alpha = 0.05$). If sig. value (α) < 0.05 then H0 was rejected and if sig. value (α) > 0.05 then H0 was accepted. In addition to data on students' scores, this study also analyzed data collected using the online questionnaire, i.e., google form administered to 19 students who were undertaking the course. The questionnaire was answered by students after uploading the final products into their instagram accounts. The questionnaire was designed in scale type (1-4) ranging from strongly disagree to strongly agree covering 35 questions to get quantitative data in the form of numbers and percentage.

Findings and Discussion

This section elaborates the findings in this study and its elaboration compared to previous studies. Participants in this research major in Electrical Engineering and they worked on the project for five meetings. In the pre-test, students did individual presentation without the intervention of PBL. In the phase of project based learning, students had several stages including topic agreement, group discussion, presentation with peer review and lecturer's evaluation, final presentation, and infographic publication. Pre-test and post-test were conducted to analyze the effect of project-based learning on students' speaking achievement. The test was in the form of instruction in which the students were required to deliver a presentation based on the topic provided. The pre-test was administered to obtain preliminary data at the beginning of the study before the treatment was conducted. Students worked on the topic "Type of Green Energies". Then, post-test with topic "Proposing Green Energy in Indonesia" was carried out to investigate the effect of project-based learning on students' scores. Once the students finished in publishing their final product and got feedback, students were required to fill in an online questionnaire to gather perspectives on stages they had during project-based learning implementation.

In the following sections, effects of PBL on students' speaking achievement in three classes are elaborated quantitatively based on the result of SPSS Statistics 21.

The Effect PBL on Students' Speaking Achievement

The output of data processing using paired sample statistics showed that the mean score of students' pre-test is 79.21 while the mean score of students' speaking after the implementation of project-based learning was 86.00.

Table 1. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_Test	79.21	19	5.663	1.299
	Post_Test	86.00	19	4.163	.955

The finding shows that students gained a higher mean score after being taught using PBL. In addition, the pre-test and post-test scores were analyzed using paired sample correlations. The analysis was used to determine the degree of relationship between before and after project-based learning was implemented in the classroom.

Table 2. Paired Samples Correlations

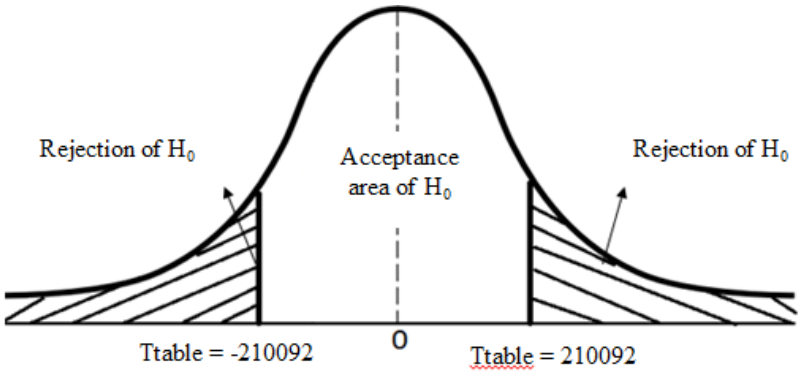
		N	Correlation	Sig.
Pair 1	Pre_Test & Post_Test	19	.575	.010

The result of the analysis shows that the correlation coefficient (r) = 0,575. Based on the interpretation scale of correlation coefficient by Guilford (1965), the correlation coefficient (r) = 0,575 is between the range of 0,401-0,700 which means that the correlation is strong. This indicates that there was a strong or positive relationship of PBL on students' achievement as displayed in the result of paired t-test in Table 3 below.

Table 3. Paired Samples Test

Paired Differences					t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
-6.789	4.721	1.083	-9.065	-4.514	-6.269	18	.000

In examining the effectiveness of PBL in enhancing students' speaking achievement, the researchers compared the pre-test and post-test scores earned by the students. This was done in order to determine a significant difference between them if any. The t-test analysis revealed that tvalue was at -6.269 with (df) or the degree of freedom (n-k) = 19 – 1 = 18 and the probability value or significant value (2-tailed) at 000. Since the p-value (2-tailed) was lower than 0,05, it pointed to a significant difference between the pre-test and the post-test results. Test on both sides was done to determine the t-table value in which each side having a value of = = 0,025. The value of ttable (0,025,18) was ± 2,10092. The hypothesis test area can be seen in the following picture.



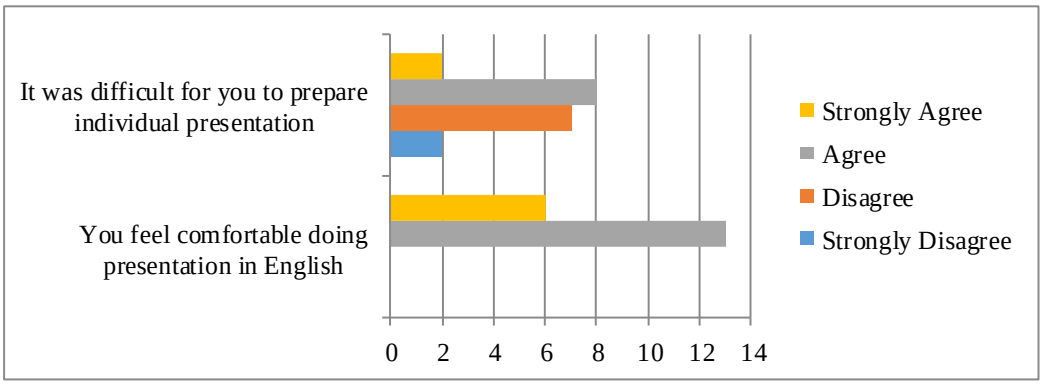
Picture 1. Two Tailed Hypothesis Test

Based on the result of analysis using SPSS statistics 21 with 95% level of confidence, it was revealed that $-t_{count} < -t_{table}$ -6.269 < -2,10092) and the significance value (p_{value}) of 2-tailed was less than 0,05 (0,000 < 0,05). It can be concluded that H1 was accepted and H0 was rejected signifying that there was a significant effect of PBL implementation in improving students' speaking achievement. This indicates that there was a significant impact on students' scores after PBL implementation compared to conventional lecture type approach.

According to the result of data analysis described previously, it was discovered that project-based learning implemented during the teaching and learning process affected significantly towards the speaking competency of the second-semester students of Informatics Management in three different classes. Based on the result of analysis using SPSS statistics 21 with 95% level of confidence, it was revealed that $-t_{count} < -t_{table}$ (-6.269 < -2,10092). In addition, it was proven by the probability value of 0.00, which was lower than 0.05. It meant that there was a significant difference in speaking competency before and after being taught with PBL. In the pre-test, students were being taught using the conventional method in which speaking was performed as an individual task without a series of completion stages. Meanwhile, the post-test was carried out in the form of the project with a detailed series of phases involving group discussion, peer-review and product publication.

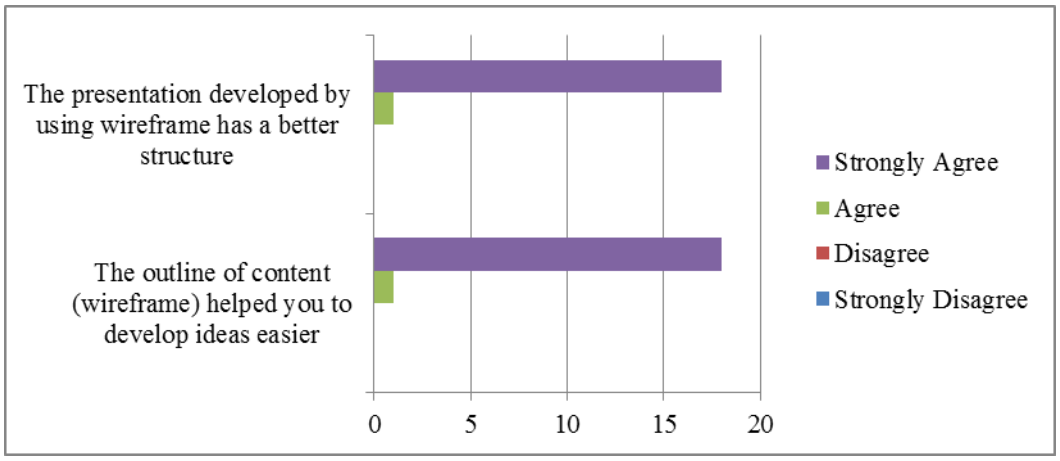
Students' Perception on Speaking Skill and Project Based Learning with Infographic

This section elaborates students' perceptions on speaking activities in general, the impacts of group discussion to the quality of their presentations, how working on infographics affects their speaking performance and students' perception on project based learning in general. Picture 2 below illustrates students' perception on practicing their speaking skill in presentation.



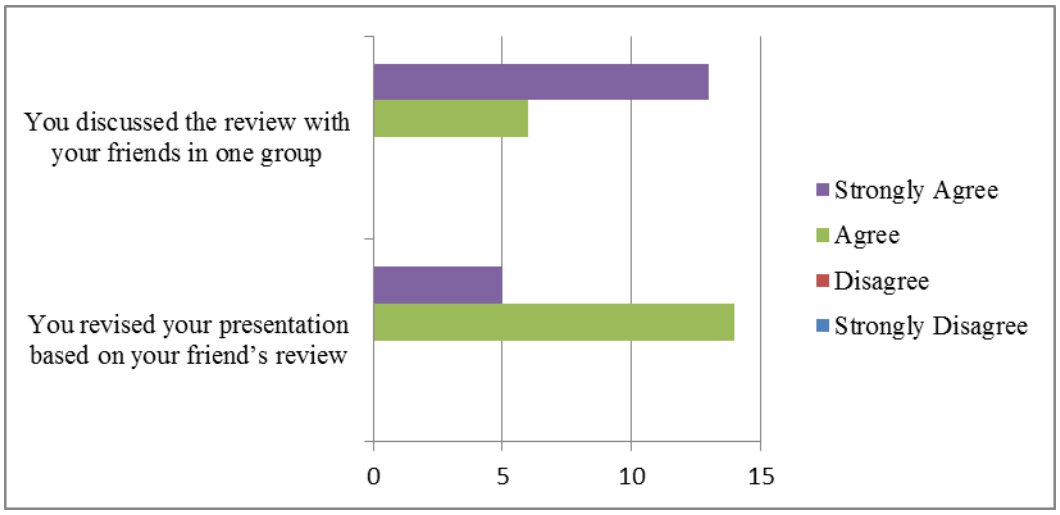
Picture 2. Google Form Responses (i)

Responses in Picture 2 show that more than half of the population (13 students or 68.4%) showed a positive attitude by stating agreement on the statement that they enjoyed delivering presentation in English while the rest of the population (6 students or 31.6%). Students gave various responses to the statement on difficulty of preparing individual presentation. Even though 8 students (41.1%) agreed that it was difficult for them to prepare presentation individually, a slight different number of students (7 students or 36.8%) gave different responses stating that preparing individual presentation was not difficult for them.



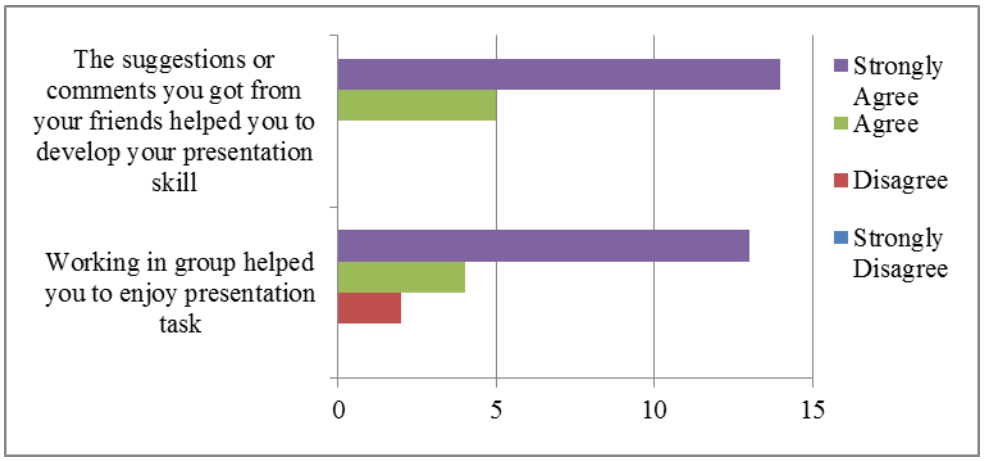
Picture 3. Google Form Responses (ii)

Regarding the use of constructing the outline of content or wireframe as seen in Table 5, all students gave positive feedback. Among 19 students, 18 students (94.7%) strongly agreed that it helped them to develop ideas easier and 1 student supported the statement positively by choosing the scale of agreeing. Furthermore, the questionnaire responses also showed the same number of percentage on the statement about whether the presentation developed by using wireframe has a better structure.



Picture 4. Google Form Responses (iii)

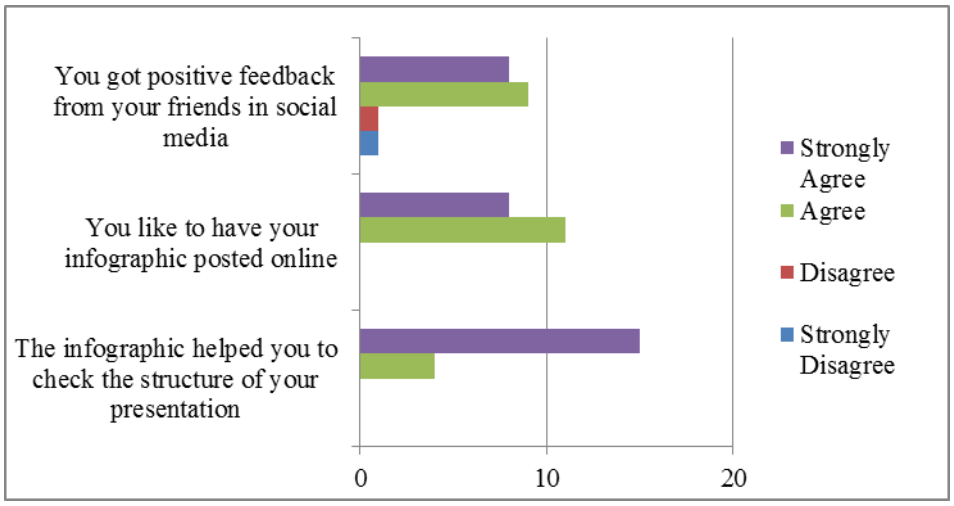
When students were working in groups, they were assigned to review the presentation of their peer in one group. This process was conducted in order to help them revise the quality of both their content and delivery. Referring to the result of the questionnaire as seen in the above diagram, students gave positive responses by choosing scale 3 (agree) or 4 (strongly agree) on the statement about the group work process. A majority of students (14 out of 19 students or 73.7%) mentioned that they revised their presentation based on the result of review given by their friends. In addition, 13 students or 68.4% strongly agreed on the statement that they discussed the review with their group members.



Picture 5. Google Form Responses (iv)

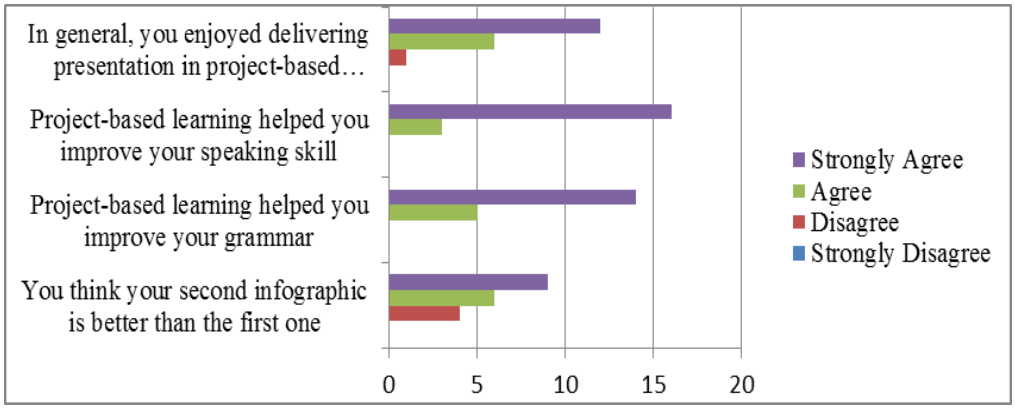
Working in groups gives advantages to their improvement in doing presentation. 13 students or 68.4% strongly agreed that the group work helped them to enjoy presentation task, while the rest of the students, chose the scale 3 and 2 in responding to this statement. Besides that, all students gave positive point of view regarding to the statement about whether the suggestions of comments

they got from their friends helped them to develop their presentation skill. A big number of students (14 students or 73.7%) chose scale 4 or strongly agree while the rest (5 students or 26.3%) chose scale 3.



Picture 6. Google Form Responses (v)

Recently, infographic has been widely used in educational setting and classroom activities particularly in project based learning. Designing infographic as part of the speaking project was a new thing for students participating in this study. However, most of them gave good responses to the impact of infographic to their learning. The majority of students (15 students or 78.9%) agreed that the infographic helped them to check the structure of their presentation. They also liked to have their infographic posted online in their instagram account (11 students chose 'agree' and 8 students chose 'strongly agree'). Even though they mentioned that they did like to have their infographic published in social media, apparently not all students got positive feedback because there were one student chose scale 1 and 2 respectively while the rest chose scale 3 and 4.



Picture 7. Google Form Responses (vi)

After completing their post-test infographic with project-based learning, students gave a variety of responses when comparing the quality of their first

infographic prior to PBL to the second infographic with PBL. As seen in Picture 7, out of 19 populations, 15 respondents (9 students and 6 students) provided positive feedback by choosing scale 4 and 3 respectively. However, 4 students disagreed with the statement meaning that they did not think their second infographics were better than the first one.

Referring to the responses on the impact of project-based learning, most respondents (14 students or 73.7%) strongly agreed that PBL helped improve their grammar while the rest of population chose to agree (5 students or 26.3%) on the same statement. In addition, students also gave positive responses on the statement about whether project-based learning helped them improve their speaking skill. A big number of respondents (16 students or 84.2%) strongly agreed while other students (3 students or 15.8%) chose scale 3. In general, most students (3 students or 63.2%) chose scale 4 while responding to the statement of whether they enjoyed delivering presentation in PBL. The rest of students, chose scale 3 (6 students or 31.6%) and only 1 student gave negative feedback by choosing scale 2 or disagreed to the statement given.

In spite of the difference in the type of final products and platform used in publishing the final products, the result of data analysis in this study is similar to the findings reported by earlier EFL researchers in Indonesia. Astawa, Artini and Nitiasih (2017) reported the significant effect of students' productive skills before and after being taught by using PBL. In addition, PBL enhanced students learning quality in term of enthusiasm, confidence, creativity, self-directed and collaborative learning ability, while from the teacher's part, PBL promoted teacher's motivation and satisfaction in teaching.

Referring to the statistical analysis on students pre-test and post-test, a research conducted by Dewi (2018) also showed similar result in which the researcher has concluded that the application of the PBL technique could improve the students' speaking achievement. Furthermore, the number of students highly active in the teaching-learning activities increased gradually from the first cycle to the second cycle. As for the result of the students' responses toward PBL technique, the students had positive responses in their speaking class. Based on their responses, this technique could make the students more motivated, happy, and confident to speak English.

Participants in this present study also expressed positive feedback on the impact of having group discussion before they deliver individual presentation. This is in line with the findings in Permatasari (2013) which revealed that group discussions helped students to improve their speaking skill because the discussions encouraged them to interact with their friends in small groups before they began to speak in a big group. Students with low performance in speaking could improve their skill through project-based learning that was proven by the increase in students' class participation because PBL gave them a a chance to to interact in small and big groups. Then, the score of students' performance also increased because the students had prepared in a small group before they performed in a big group. Lastly, the score of students' project also increased because they cooperated well in a group.

Improvement in students' scores in this present study also supported by the findings of research by Ichsan, et.al (2017) showed that there was an improvement on students' speaking skill through project-based learning particularly in accuracy and fluency. The responses in google form acknowledged students' agreement that PBL assisted them to improve their grammar skills. It can be concluded that the students' speaking skill taught using project-based learning was improved. Furthermore, Ichsan, et.al (2017) highlighted that students' improvement in speaking skill was also proved by the list of difficult words, mispronunce words, and grammatical errors in each cycle. It showed that the problem of pronunciation and grammar were reduced in each cycle. The teaching learning process was also improved by applying project-based learning in teaching learning speaking.

Group work especially peer review has proved to be one of media that helped students to enhance both their speaking skill dan presentation content. Zare-Behtash dan Sarlak (2017) mentioned that PBL reinforced students to be more active when PBL provide students with group work. Moreover, self-assessment and peer-assessment are available in PBL. Thus, students correct their own mistake in a friendly environment. PBL permits learners knowledge activation through group work activities. These kinds of activities increase students' opportunities to interact in real life situation and in a very friendly environment. In addition, group work activities provide learners feedback which causes self-evaluating. Abubakar (2015) further emphasized through performance, the students are enabled to be actively involved in presenting and giving feedback which are acquired from small and big group discussion. Through the project, the students could interact with their friends in small group before the students spoke in a big group to enhance their speaking ability.

According to the major finding in this present study supported by the results from previous researches, it is clear that the implementation of PBL has proved to be an effective teaching method in improving students' speaking competence compared to the conventional method. Project-based teaching is one such breakthrough technology, as it allows students to generate their own ideas and to integrate knowledge obtained through different disciplines to solve hands-on tasks. Previous researchers including Praba, et.al Artini and Ramendra (2018:6) and Sukerti and Yuliantini (2018:7) claimed positive effects on both learners and teachers in terms of motivation, content learning, practical skills and learning autonomy. Project-based learning offers a solution to overcome the need to teach English and to put students in a situation where their soft skills are being improved along the process of learning new competence. Learners decide how to approach a problem and what activities to pursue. They gather information from a variety of sources and synthesize, analyze, and derive knowledge from it. Their learning is inherently valuable because it's connected to something real and involves adult skills such as collaboration and reflection. In the end, students demonstrate their newly acquired knowledge and are judged by how much they've learned and how well they communicate it.

Conclusion

Based on the discussion and finding, it can be concluded that project-based learning can be one of effective ways in teaching ESP course. The result of this study stresses on the positive impact of project-based learning on students' speaking achievement. The quantitative analysis using SPSS statistics 21 revealed a significant difference in students' speaking achievement before and after PBL was implemented. Students' mean scores improved after the intervention. In other words, the speaking competency of the students' taught with PBL was higher than those taught with the conventional method. So, it can be concluded that PBL give more benefits compared to the conventional method on students' speaking competency. It can help them gain not only experiences in their selected areas but also better language skills and other soft skills. In addition, being able to select the topic based on their interests, PBL is able to engage students in the course since students devote much time and efforts to complete their favorite projects, which further leads to more understanding of the subject and improvement in English language. Referring to these findings, it is recommended that PBL should become a choice of strategy for teaching English in higher vocational education, especially in the context of teaching a productive skill such as speaking as it can also enhance soft skills required by the workplace.

References

Abubakar, M. S. (2015). Improving the second year students' speaking ability through project based learning (pbl) at mtsn model Makassar. *English, Teaching, Learning, and Research Journal, 1*(2), 216-228.

Astawa, N.L.P., Ning, S. P., Artini, L.P., & Nitiasih, P.K. (2017). Project-based learning activities and EFL students productive skills in english. *Journal of Language Teaching and Research, 8*(6), 1147-1155.

Bell, S. (2010). Project-based Learning for The 21st Century: Skills for the future. The Clearing House, 83(2), 39-43.

Bolsunovskaya, L. M., Phillips, C., Korotchenko, T.V., Matveenko, I.A., Anna B. Strelnikova, A. B., Ulyanova, O. S., (2015). Project-based Method in Teaching Foreign Language for Specific Purposes. Procedia - Social and Behavioral Sciences. 215 176 – 180. doi: 10.1016/j.sbspro.2015.11.615

Dewi, H. (2018). Project based learning techniques to improve speaking skills. *English Education Journal*. Retrieved on June, 6 2019 from www.jurnal.unsyiah.ac.id/EEJ/article/view/4588

Foss, P., Carney, N., McDonald, K., & Rooks, M. (2007). Project-based learning activities for short-term intensive English programs. *Asian EFL Journal, 23*, 1-19. Retrieved on from https://www.asianefl journal.com/1834/teaching-articles/2007/10/project-based-learning activities-for-shortterm-intensive-english-programs/#squelch-taas-tab content-0-3

Giang, D.C.N.A. (2017). Project-based learning in an english for business classroom. TESOL Conference, SEAMEO RETRAC January 1, 2017. Retrieved on 8 June, 2019 from www.vnseameo.org/.../20_DO%20Chi%20Na_PROJECT%20BASED%20.pdf

Indrasari, N. (2016). Project Based Learning in English for Specific Purposes (ESP) Course for Pre-Service Teacher. *Jurnal Tadris Bahasa Inggris, 9*(2), 2016, 366-379. Retrieved on 8 June, 2019 from ejournal.radenintan.ac.id/index.php/ENGEDU.

Ichsan, M.H., Rahayu, A., & Rosnija, E. (2017). Improving students speaking skill through project-based learning. *Jurnal Hasil Riset*. Retrieved on 8 June, 2019 from https://www.e-jurnal.com/.../improving-students-speaking-skill.html.

Maulany, D.B. (2013).The use of project-based learning in improving the students` speaking skill (a classroom action research at one of primary schools in Bandung). *Journal of English and Education, 1*(1), 30-42

Noom-ura, S. (2013). Project-Based Learning and ESP: a Perfect Match. *English Language Teaching, 31*(3), 1-7. Retrieved on 8 June, 2019 from https://www.academia.edu/.../ProjectBased_Learning_and_ESP_a_Perfect_Match

Permatasari, S. F. (2013). Improving Students' Speaking through project based learning for second graders of SMP N 1 kawedanan magetan. Universitas Negeri Malang. Retrieved on June 8, 2019 from jurnal-online.um.ac.id/data/.../artikelA3D3B540A56C93B463BB2D8CCE56FF78.pdf

Petersen, C., & Nassaji, H. (2016). Project-based learning through the eyes of teachers and students in adult EFL classrooms. *The Canadian Modern Language Review, 72*(1), 13-39. http://dx.doi.org/10.3138/cmlr.2096

Praba, L.P, Artini, L.T., and Ramendra, D.P. (2018). Project-based learning and writing skill in EFL: are they related?. SHS Web of Conferences 42, 00059.2018. Retrieved on 8 June, 2019 from https://www.shs-conferences.org/articles/shsconf/pdf/.../shsconf_gctale2018_00059.pdf

Sukerti, G.N.A. and Yuliantini, N. (2018). Learning Autonomy in Writing Class: Implementation of Project-based Learning in English for Specific Purposes. J. Phys.: Conf. Ser. 953 012101

Zare-Behtash, E. and Sarlak, T. (2017). The Effect of Project Based Learning (PBL) on the Components of Speaking Ability of Iranian EFL Beginner Learners. *Journal of Applied Linguistics and Language Research, 4*(3), 119-130. Retrieved on 6 June, 2019 from www.jallr.com ISSN: 2376-760X

IJIET, e-ISSN 2548-8430, p-ISSN 2548-8422, Vol. 3, No. 2, July 2019

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

THE INFLUENCE OF EARLY LITERACY CHARACTERISTICS AND SES ON THE LITERACY ACHIEVEMENT OF STUDENTS WHO SPEAK NON-DOMINANT LANGUAGES IN INDONESIA

Kevin M. Wong
New York University
kevinwong@nyu.edu
DOI: https://doi.org/10.24071/ijiet.2019.030211
received 24 June 2019; revised 26 June 2019; accepted 30 June 2019

Abstract
Across the world, children from non-dominant language speaking families are not performing as well as their peers who speak a dominant language when they enter school. The current study examines the case of Indonesia, investigating the influence of language background status, early literacy characteristics, and socioeconomic status on literacy achievement in Indonesia. Drawing from the PIRLS 2011 dataset (N = 2,725), findings reveal that there is a significant association between each variable and literacy achievement, and that socioeconomic status explains literacy achievement most strongly among 4th grade students in Indonesia. Implications are discussed.

Keywords: education, international testing, literacy, multilingualism

Introduction
The influence of early literacy characteristics and SES on the literacy achievement of students who speak non-dominant languages in Indonesia

In 2013, the number of international migrants reached 232 million worldwide (UNDESA, 2013). With the increase of global migration patterns in recent decades, and the settlement of ethnic minority populations for generations in host countries, nations have become increasingly multicultural and multilingual. As such, more and more countries are faced with the challenge of creating linguistic and cultural accommodations to address the holistic educational needs of language minority students.

Indonesia is one such country as the fourth most populous country in the world with a population of over 250 million (CIA World Factbook, 2014), over 300 ethnic groups and 700 languages (Lewis, Simons & Fennis, 2015). In fact, Greenberg's Linguistic Diversity Index places Indonesia among the top 30 most diverse countries in the world with an index of 0.816 on a scale of 0 to 1 where 1 represents the probability of picking two people who speak different mother tongues (Greenberg, 1956; Lewis, Simons & Fennig, 2015). Without question, millions of people in Indonesia speak non-dominant languages (NDL) – languages that do not hold official status or command high prestige in comparison to dominant languages (DL) of society (Benson & Kosonen, 2013).

Examining these groups of speakers, comparative studies reveal that there is a discrepancy in the literacy performance between NDL and DL students in various countries (Ogle, Begnum & Scott, 2008; Ogle, Miller & Malley, 2006), comparing countries with a similar socioeconomic status (CPE, 2015; Ogle, Miller & Malley, 2006) and also by geographic location in the Nordic region (Ogle, Begnum & Scott, 2008). In these studies, DL students consistently outperformed NDL students in literacy achievement. With the exception of a few studies (Oey-Gardiner, 1991; Widjaja, 1989), there is not much documentation in the literature regarding literacy and NDL speaking students in Indonesia. One aim of the current study is therefore to examine whether these trends in literacy achievement apply to the Indonesian context, a context rich with linguistic diversity.

In addition, the current study recognizes the importance of family background and home resources in literacy outcomes. Studies document that a lack of home resources is associated with poor literacy performance among NDL students (Organisation for Economic Cooperation and Development; OECD, 2006). Likewise, the U.S. National Literacy Panel on Language Minority Children concludes that families play a significant role in the literacy development of their children (Goldberg, Rueda, & August, 2006). The current study thus investigates the influence of home characteristics on literacy achievement, specifically looking at early literacy characteristics and home economic resources as key factors that might affect the literacy achievement of NDL students in Indonesia.

Literature review

Across the world, children from NDL speaking families are not performing as well as their DL speaking peers in schools. Ogle, Begnum and Scott (2008) compared home and school characteristics of NDL and DL speaking fourth grade students in Denmark, Norway and Sweden to understand how these factors affected literacy achievement on the PIRLS 2006 assessment – an international assessment that measures progress in reading and literacy. Homes with NDL speakers were identified as families with neither parent speaking the language of the test. Ogle, Begnum and Scott (2008) compared the percentage of NDL and DL responses to home and school characteristics across countries; compared the average PIRLS scaled scores and standard errors for NDL and DL groups; and ran a multiple regression analysis to explore the correlation between NDL and DL literacy achievement with home and school characteristics. Findings revealed that home characteristics explained more variation in literacy achievement among NDL and DL groups than school characteristics, concluding that home characteristics variables were better able to predict literacy achievement than language background.

In addition to language background, a number of studies document the relationship between academic achievement and early literacy characteristics, such as preschool or Kindergarten attendance and home literacy activities. Caughy, DiPietro and Strobine (1994) explored the benefits of preschool on short-term reading scores. Using the large-scale National Longitudinal Survey of Youth for 5- and 6-year-old children in the United States, researchers found that children

in poverty impacted contexts benefitted from preschool. Following the progress of these children longitudinally, however, the effects of preschool were unaccounted for by the time children reached second grade. Researchers also found a significant interaction between reading achievement and home environment rather than income, suggesting that children with higher scores on home environment were likely to demonstrate higher reading scores.

Importantly, early literacy characteristics focus on the learning environment at home. Examining a series of these characteristics, Leseman and Jong (1998) ran a multivariate analysis on the opportunities, instructional quality, cooperation and socio-emotional quality of children to predict early reading achievement. Researchers conducted interviews with 89 families who had 4-year-old children in inner city Netherlands. These interviews were coupled with observations on parent-child book reading interactions at the ages of 4, 5, and 6 years old. Findings revealed that home literacy was multifaceted and significantly impacted by background factors such as SES, ethnicity, and parent literacy practices. Interestingly, after controlling for vocabulary learning and home language, there was still a significant effect for opportunity, instruction quality, and cooperation quality on home literacy.

Besides literature on the language minority status and early literacy characteristics of children, there is also a body of research on the effects of SES on academic achievement. Although this relationship varies across cultures and contexts (OECD, 2006), both parental education and income are consistently associated with academic achievement. Sammons, Elliot, Sylva, Melhuish, Siraj-Blatchford and Taggart (2004) conducted a large-scale study looking at pre-school education, SES, and cognitive attainment. The group of researchers investigated a randomized control group of children who attended 141 pre-schools in the UK with a home sample of children who did not attend pre-school. Running a multilevel analysis on the home environment, children attainment, and pre-school attendance, Sammons et. al. (2004) found that SES, income, mother's education level, ethnic background, and language background all played a role in academic achievement. They concluded that pre-school is beneficial to young children, particularly if their environments are impacted by SES. In line with the Sammons et. al. (2004) findings, the current study will hone in on parental education and the number of books at home to represent income as variables that affect fourth grade literacy performance in Indonesia.

Although there is less research in the Indonesian context with regard to the influence of language background status, early literacy characteristics, and SES on literacy achievement, a few studies do illuminate the inequities of schooling by gender (Oey-Gardiner, 1991) where school availability appears to predict the enrollment ratios for males and females in Indonesian schools. Examining the relationship between this ratio and school availability, formal sector employment, drop-out patterns, and marriage patterns, Oey-Gardiner (1991) found that school availability was a stronger predictor for females than for males. Also in the Indonesian context, scholars have utilized PISA (Program for International Student Assessment) problems to examine the mathematical literacy of Grade VIII students, finding that using a Pendidikan Matematika Realistik Indonesia

approach allowed students to construct their mathematical knowledge to help with large-scale international assessments like PISA (Larasati & Rianasari, 2017) and PIRLS (Progress in International Reading Literacy Study).

While much of the literature has been conducted in international contexts, few studies examine how home characteristics might affect literacy outcomes in the Indonesian context. As researchers identify different factors that influence reading achievement, the present study seeks to explore the effects of language background status (NDL or DL status), early literacy characteristics (including kindergarten attendance and home literacy practices), and SES (focusing on parental education and books at home) on literacy achievement in Indonesia. Thus, the research question guiding this study is: How does language background status (DL), early literacy characteristics, and socioeconomic status (SES) affect literacy achievement of 4th grade students in the PIRLS 2011 assessment in Indonesia? Moreover, can early literacy characteristics and SES help explain the relationship between DL status and literacy achievement?

Method

Dataset

The dataset was used as a secondary analysis from the Progress in International Reading Literacy Study (PIRLS) assessment – an international assessment that is administered every year from the International Association for the Evaluation of Educational Achievement (IEA). The dataset of interest was taken from Indonesian fourth grade students who took the test in 2011. This was the last time Indonesia participated in the PIRLS assessment as they opted not to participate in 2016. In addition to reading assessment results, this study will draw on data from the student questionnaire that students completed after the assessment, answering questions about their home and school life, as well as a home questionnaire titled the "Learning to Read Survey" that was completed by parents, asking questions about language use at home, early literacy characteristics and home resources.

In the home questionnaire, both the early literacy tasks (Q6) and early reading activities (Q2) are indices composed of five and nine questions, respectively. The data from these indices were compiled according to Rasch modeling with an international mean of 10 and an international standard deviation of 2. Through Rasch modeling, each scaled score was divided into three categories: the most desirable (high), the least desirable (low), and the remaining score in the middle. For early literacy tasks, a scaled score of <8.9 was considered not well, 8.9-11.5 was moderately well, and >11.5 was very well. Similarly, for the frequency of early reading activities, a scaled score of <6.2 described never to almost never, 6.2-10.7 was sometimes, and >10.7 was often (see Table 2). From the dataset, literacy achievement (reading score) of 4th graders on the PIRLS 2011 assessment served as the dependent variable. A series of independent variables are included in Table 2. Moreover, to capture language use at home, the survey asks (Q21) "When talking at home with your child, what language does the child's father (or stepfather or male guardian) use? What language does the child's mother (or stepmother or female guardian) use?

Among early literacy characteristics, kindergarten attendance, early literacy tasks and early reading activities were chosen because of the literature that substantiates their influence on literacy achievement. In addition, SES factors like the number of children books at home and parents' levels of education were selected because of the established association between SES and literacy achievement in recent literature (Sammons, et. al, 2004).

Importantly, the language of the assessment and questionnaires was translated to Bahasa Indonesian. While Bahasa Indonesian is the official language of schools and the education sector with 22.8 million L1 speakers, Javanese is the language with most L1 speakers (84.3 million). There are also many other dialects that are not accounted for in the translation, including major dialects like Banjar (3.5 million), Bugis (5 million) and Musi (3.1 million; Lewis, Simons & Fennig, 2015). This diversity of language varieties may account for a large portion of the original sample who did not answer this question in the home survey as it was not offered in their language (see Table 2 Notes). Still, the IEA translates all home surveys and student assessments through two of the following methods: multiple-forward translation, back-translation, translation review by bilingual judges, and statistical review (Maxwell, 1996).

Analytical strategy

The quantitative analysis of this study proceeds with a multiple regression analysis because the study involves models that have two or more predictor variables and a single, continuous dependent variable. A regression analysis will also demonstrate how variables are related to one another, the strength of these relations, and the relative predictive power of the independent variables on the dependent variable. The models use OLS regression between literacy achievement and: (1) DL status; (2) DL status and early literacy characteristics; (3) DL status and SES; and (4) all variables. In addition, a series of independent t-tests and one-way ANOVAs are used to compare language majority and minority students on literacy achievement, testing whether each variable in the sample is significantly correlated with literacy achievement and can be extrapolated to the general population.

Findings and Discussion

Descriptive Patterns

The analytic sample in Table 2 consists of 2,725 4th grade students in Indonesia who sat the PIRLS assessment in 2011. After listwise deletion of missing, omitted and invalid variables, the 2,725 in this sample represents 59% of the original sample. The largest number of deletions were taken from the DL variables where 918 surveys had omitted the language(s) spoken by the father, and 1,164 surveys had omitted the language(s) spoken by the mothers. After isolating this sample population, the mean score of reading achievement was 436.13 (SD=76.50), and language minority (or NDL) students, defined as those with both parents who did not speak the majority language, accounted for 49% of the analytic sample. With almost equal representation between the DL and NDL groups, we are also able to explore the impact of DL on literacy achievement.

The remaining independent variables were divided into two categories: early literacy characteristics and SES. These variables were used to explore how these factors might explain the relationship between DL and literacy achievement. Most students experienced favorable early literacy characteristics (see Table 2). About 72% of 4th grade students in the sample attended kindergarten. While this is an unexpectedly large percentage of students attending kindergarten, which causes us to question who the sample consists of in this dataset, the original sample of 4,644 students before listwise deletion reveals a similar 71.27% of students in Indonesia who attended kindergarten.

Besides kindergarten attendance, children were reported by parents to have a 'moderate level' of literacy prior to entering school with an average of 10.05 (SD=1.84). This was calculated from Rasch modeling between the transformed scaled cutoff values of 8.9 and 11.5. Most students appeared to be 'sometimes engaged' in early reading activities (mean = 9.40, SD = 1.73). This was calculated from Rasch modeling between the transformed scaled cutoff values of 6.2 and 10.7. Finally, the socioeconomic factors varied among Indonesian families in the analytic sample. The number of children books at home was relatively low (mean = .49 out of 3, SD=.67). Meanwhile, both fathers and mothers had similarly moderate levels of education (mean = 1.74, SD=.81 and mean = 1.71, SD=.79, respectively).

Dominant Language Status, Early Literacy, and SES

The first variable that we are trying to explain is the influence of DL status on literacy achievement. A two-tailed independent t-test was run on DL (Table 3) and yielded a statistically significant relationship ($t=-8.3$, $DF=2,273$, $p<.001$), suggesting that DL speakers are statistically more likely to have a higher literacy score than NDL speakers.

Among early literacy characteristics (kindergarten attendance, early literacy tasks and early reading activities) in Indonesia, each of variable as statistically significant through a two-way independent t-test for kindergarten attendance ($t=-10.96$, $DF=2,723$, $p<.001$). A simple correlation revealed a medium, positive relationship for early literacy tasks ($r=.33$, $p<.001$) and a weak, and positive relationship for early reading activities to literacy achievement ($r=.17$, $p<.001$). For the latter two variables, this means that as early literacy tasks and early reading activities increases, so does the reading score, and vice versa.

Lastly, SES factors like the number of children books at home and parents' levels of education were used as categorical variables in a one-way ANOVA test. Findings revealed a significant positive relationship between literacy achievement and books at home ($F=28.67$, $DF=3$, $p<.001$), father's level of education ($F=123.89$, $DF=3$, $p<.001$), and mother's level of education ($F=145.70$, $DF=3$, $p<.001$), and vice versa. Since all the factors for early literacy characteristics and SES had significant relationships with literacy achievement, they were included in this study to see if they could help explain the influence of DL status on literacy achievement.

OLS Regression

From the OLS regression analysis in Table 4, there is a discrepancy between DL and literacy achievement in the 2011 4th grade PIRLS assessment (Model 1). Findings reveal that the reading score is expected to be 24.04 points higher for students with NDL status ($p<.001$). Since this is a binary variable, non-NDL students score an average of 424.46 while NDL students score an average of 448.50. As such, we accept the alternate hypothesis and reject the null hypothesis because there is a significant association between DL and reading achievement in Indonesia.

To better understand this discrepancy, three additional models were run to see how student early characteristics and socioeconomic status affected literacy achievement and DL status. The OLS regression analysis reveals that both student early characteristics (Model 2) and SES (Model 3) affect literacy achievement. As expected, kindergarten attendance and early literacy tasks were strongly associated with reading achievement, predicting an increase of 14.56 and 11.14 points in literacy achievement, respectively, with each unit of increase ($p<.001$). Surprisingly, early reading activities were not correlated with literacy achievement in this model ($p>.05$), suggesting it does not explain reading achievement as well as the other variables. This leads us to question how accurately the index of sub-questions was able to capture early reading activities. Interestingly, DL status in Model 2 remains very significant ($p<.001$) suggesting that DL, kindergarten attendance and early literacy tasks play a similar role in the influence of literacy achievement. This also suggests that early literacy characteristics do not necessarily explain the relationship between DL and reading achievement. Yet it is important to note that this model accounts for 12% of the variation in literacy achievement ($R2=.12$). Findings from this model suggest that families who send their children to kindergarten and focus on the five literacy skills measured in the PIRLS home survey (reading the alphabet, words and sentences, writing letters and words) have an increased likelihood of improving their children's level of literacy.

The number of books at home in Model 3 predicts an increase of 8.71 points ($p<.001$) per increase of books. In conjunction with this economic factor, both father's and mother's levels of education predict an increase of 12.43 and 25.50 points in literacy achievement, respectively, for every unit of increase ($p<.001$). It is important to note the very high coefficient for mother's level of education which is more than double that of father's education level and triple that of the amount of children books at home. Interestingly, DL status is not significant ($p>.05$) when the regression model includes SES ($p>.05$), suggesting SES explains the influence of literacy achievement much more than DL status. In this model, SES is able to explain 15% of the variation in literacy achievement ($R2=.15$). This model reveals that there are noteworthy issues of inequality and impact of SES on literacy attainment. This suggests that children from low SES families are not given access to the same opportunities or resources as those from high SES families, which calls attention to the need for policymakers to address and protect the education (and linguistic) trajectories of these children.

These findings are all corroborated in the last model where the OLS regression includes DL status, student early characteristics and SES. Early literacy tasks and the amount of children books at home remain significantly correlated with literacy achievement, though the parents' levels of education have the strongest influence on literacy achievement – and in particular, the mother's level of education which predicts an increase of 20.67 points in literacy achievement per increase in level of education ($p<.001$). In addition, DL is not significant in this model suggesting that the language of parents at home may not explain literacy attainment as much as the other factors. Furthermore, this final model accounts for almost one fifth ($R2=.19$) of the variation in literacy attainment, which is quite substantial. Looking ahead, it may be valuable for future studies to tease out other factors that help explain the effect of DL, such as parent expectations, the sociolinguistic effects of linguistic capital in society, and school efforts to assimilate language speakers to the dominant language. Unfortunately, because this was a secondary analysis, variables were limited in scope according to the questions asked by the survey.

Overall, the four models show a stepwise decrease in the AIC, suggesting all factors in the last model are important and contribute to literacy achievement. Therefore, this study suggests that there is an association between DL status, early literacy characteristics, and SES on literacy achievement. Furthermore, SES accounts for the largest explanation for literacy achievement among 4th grade students in Indonesia.

Conclusion

Findings from this study are aligned with the literature that emphasize the influence of parent education and family income on academic achievement (Haveman & Wolfe, 1995; Klebanov, Brooks-Gunn, & Duncan, 1994; Smith, Brooks-Gunn, & Klebanov, 1997). While the literature shows that the language(s) spoken by parents are an important factor in academic achievement, the current study reveals that other factors like parent education have a stronger influence on literacy attainment in Indonesia. Moving forward, it would be interesting to unpack why it is that parent education influences academic attainment in Indonesia and whether there is a correlation between the language(s) spoken by parents and their levels of education. Davis-Kean (2005) found that parents' beliefs and behaviors had a significant influence on child achievement because of the expectations that educated parents placed on their children. Davis-Kean (2005) also found that these expectations differed by racial group, which could suggest potential discrepancies bewteen dominant and non-dominant linguistic groups in Indonesia.

Secondly, it would be useful to triangulate data from this study with other quantitative datasets (international or national data) that measure literacy, particularly with data more recent than the 2011 PIRLS assessment. Moreover, the current study excluded 41% of the original population due to missing data. This poses a limitation to the generalizability of results from the analytic sample to the broader population, especially because those who omitted this answer are likely to speak a language other than the language of the survey. It would also be valuable

to include qualitative interviews of parents and students to better understand how language is used at home and better capture variation within DL status. In some countries, speaking a non-dominant language does not necessarily equate to less linguistic capital (Bourdieu, 1991), nor does it inform us of the status of speakers, whether they be immigrants, Indigenous groups, 3rd generation residents or simply members of a plurilingual country. Qualitative interviews may help address the limitations of this study.

Finally, future studies may look into analyzing literacy achievement in countries that are similarly multilingual and diverse like Papua New Guinea, or contrast them with monolingual countries like South Korea and Hong Kong. Findings from such comparative studies may reveal the different needs of countries, and inform policymakers from these countries about how resources might be allocated to best support the linguistic and educational needs of non-dominant speaking students.

References

Benson, C. & Kosonen, K. (2013). *Language issues in comparative education: Inclusive teaching and learning in non-dominant languages and cultures.* Rotterdam: Sense Publishers.

Bourdieu, P. (1977). The economics of linguistic exchanges. *Social Science Information, 16*(6), 645-668.

Caughy, M., DiPietro, J. & Strobine, D. M. (1994). Day care participation as a protective factor in the cognitive development of low income children. *Child Development, 65*(2), 457-471.

Center for Public Education [CPE]. PIRLS of wisdom: Full report. Retrieved on March 15, 2019 from http://www.centerforpubliceducation.org/Main-Menu/Evaluating-performance/PIRLS-of-wisdom-At-a-glance/PIRLS-of-wisdom-Full-report.html

CIA World Factbook. (2014). Indonesia: People and society. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/id.html

Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19*(2), 294.

Fearon, J. D. (2003). Ethnic and cultural diversity by country. *Journal of Economic Growth, 8*(2), 195-222.

Goldberg, C., Rueda, R. S., & August, D. (2006). Sociocultural influences on the literacy attainment of language-minority children and youth. In August, D. & Shanahan, T. (Eds.) Developing Literacy in Second-Language Learners: Report of the National Literacy Panel on Language-Minority Children and Youth (pp. 269-318). Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Greenberg, J. H. (1956). The measurement of linguistic diversity. *Language, 32*(1), 109-115.

Haveman, R., & Wolfe, B. (1995). The determinants of children's attainments: A review of methods and findings. *Journal of Economic Literature, 33*(4), 1829–1878.

Klebanov, P. K., Brooks-Gunn, J., & Duncan, G. J. (1994). Does neighborhood and family poverty affect mothers' parenting, mental health, and social support? *Journal of Marriage and the Family, 56*(2), 441–455.

Larasati, S. R. & Rianasari, V. F. (2017). Mathematical literacy profile of grade VIII students of SMP Pangudi Luthur 1 Yogyakarta using Pendidikan Matematika Realistik Indonesia approach. *International Journal of Indonesian Education and Teaching, 1*(1), 63-72.

Leseman, P. P., & Jong, P. F. (1998). Home literacy: Opportunity, instruction, cooperation and social-emotional quality predicting early reading achievement. *Reading Research Quarterly, 33*(3), 294-318.

Lewis, M. P., Simons, G. F. & Fennig, C. D. (2015). Ethnologue: Languages of the World, Eighteenth edition. Dallas, Texas: SIL International. Online version: http://www.ethnologue.com

Maxwell, B. (1996). "Translation and cultural adaptation of the survey instruments" in M.O. Martin and D.L. Kelly (eds.), Third International Mathematics and Science Study (TIMSS) Technical Report, Volume I: Design and Development. Chestnut Hill, MA: Boston College.

Oey-Gardiner, M. (1991). Gender differences in schooling in Indonesia. *Bulletin of Indonesian Economic Studies, 27*(1), 57–79.

Ogle, T. O., Begnum, A. C. & Scott, E. (2008). Comparisons of Home and School Characteristics of Language Minority and Language Majority Fourth-graders: PIRLS Results from Three Nordic Countries. Paper presented at Comparative and International Education Society Conference, New York.

Ogle, L. T., Miller, D. C. & Malley, L. B. (2006). Characteristics of United States Grade 4 language minority students in an international context: Findings from PIRLS 2001. Presented at the International Education Assessment Conference Proceedings.

Organisation for Economic Cooperation and Development (OECD). (2006). *Where immigrants students succeed: A comparative review of performance and engagement in PISA 2003*. Paris: OECD.

Sammons, P., Elliot, K., Sylva, K., Melhuish, E., Siraj-Blatchford, I., & Taggart, B. (2004). The impact of pre-school on young children's cognitive attainments at entry to reception. *British Educational Research Journal, 30*(5), 691-712.

Smith, J. R., Brooks-Gunn, J., & Klebanov, P. K. (1997). Consequences of living in poverty for young children's cognitive and verbal ability and early school achievement. In G. J. Duncan & J. Brooks-Gunn (Eds.), Consequences of Growing Up Poor (pp.132–189). New York: Russell Sage Foundation.

United Nations Department of Economic and Social Affairs (UNDESA). The number of international migrants worldwide reaches 232 million. Retrieved on April 6, 2015 from: http://esa.un.org/unmigration/documents/The_number_of_international _migrants.pdf

Widjaja, H. (1989). Praktek-praktek asuhan anak di kecamatan Cikerah [Child rearing practicesin the area of Cikeruh]. Unpublished manuscript, Padjadjaran University, Bandung, Indonesia.

Appendix

Table 1. Primary ethnicities in Indonesia

Ethnic groups	Population (million)	Percentage	Main Regions
Javanese	95.217	42.00	Central Java, East Java, Yogyakarta, Jakarta, North Sumatra, South Sumatra, Bengkulu, Lampung
Sundanese	30.978	15.41	West Java, Banten, Jakarta, Lampung
Malay	6.946	3.45	North Sumatra, Riau, Riau Islands, Jambi, South Sumatra, Bangka–Belitung Islands, West Kalimantan
Madurese	6.772	3.37	Madura Island, East Java
Batak	6.076	3.02	North Sumatra, Riau, Jakarta
Minangkabau	5.475	2.72	West Sumatra, Riau
Betawi	5.042	2.51	Jakarta, Banten, West Java
Bugis	5.010	2.49	South Sulawesi, South East Sulawesi, Central Sulawesi, East Kalimantan
Acehnese	4.419	2.05	Aceh
Bantenese	4.113	2.05	Banten
Banjarese	3.496	1.74	South Kalimantan, East Kalimantan
Balinese	3.028	1.51	Bali
Tionghoa	2.832	1.20	North Sumatra, Riau, Riau Islands, West Kalimantan, Jakarta, Bangka–Belitung Islands
Sasak	2.611	1.17	West Nusa Tenggara
Makassarese	1.982	0.99	South Sulawesi
Minahasan	1.900	0.96	North Sulawesi
Cirebonese	1.890	0.94	West Java, Central Java

Table 2: Definitions and Descriptive Statistics of Variables (N=2,725)

Variable	Definition and metrics	Mean	SD	Min	Max
Reading Achievement	First plausible value of achievement in reading	436.13	76.50	108.74	672.94
Language Majority Student (NDL)	Scale: 0 = no parents speak majority language to 1 = one or both parents speak majority language	.49	-	-	-
Early Literacy Characteristics					
Kindergarten Attendance	Scale: 0 = did not attend kindergarten to 1 = attended kindergarten	.72	-	-	-
Early Literacy Tasks	Mean of 5 items describing early literacy ability. Scale: <8.9 = not well 8.9-11.5 = moderately well >11.5 = very well Reliability (alpha) = .91	10.05	1.84	4.84	13.18
Early Reading Activities	Mean of 9 items describing frequency of early reading activities. Scale: <6.2 = never to almost never 6.2-10.7 = sometimes >10.7 = often Reliability (alpha) = .75	9.40	1.73	2.14	14.71
Socioeconomic Status					
Amount of Children Books at Home	Scale: 0 = very few books to 3 = many books	.49	.67	0	3
Father's Level of Education	Scale: 0 = no school to 3 = tertiary education or higher	1.68	.78	0	3
Mother's Level of Education	Scale: 0 = no school to 3 = tertiary education or higher	1.63	.77	0	3

Source: [PIRLS 2011 International Dataset, 4th grade Indonesian student sample]
Note: A total of 41% of the sample was omitted due to missing data, which has implications for the generalizability of the findings. Home characteristics are adapted from Ogle, Begnum and Scott (2008) study.

Table 3: Independent t-test results comparing language majority and minority students on literacy achievement

Group	n	Mean	SD	t	Df	p
Language Minority Students	1,402	424.46	74.04	-8.30	2,723	<0.001
Language Majority Students	1,323	448.49	77.14			

Source: [PIRLS 2011 International Dataset, 4th grade Indonesian student sample]

International Journal of Indonesian Education and Teaching
http://e-journal.usd.ac.id/index.php/IJIET
Sanata Dharma University, Yogyakarta, Indonesia

BENEFITS AND CHALLENGES OF TEACHER PROFESSIONAL DEVELOPMENT PROGRAM IMPLEMENTATION: ENGLISH TEACHERS' PERSPECTIVES

Santa Monica and Paulus Kuswandono
English Education Master's Program, Sanata Dharma University
santamonica16@gmail.com and kuspbi@gmail.com
DOI: https://doi.org/10.24071/ijiet.2019.030212
received 21 May 2019; revised 10 June 2019; accepted 30 June 2019

Abstract
This paper aims to discover benefits and challenges faced by English teachers along their involvement in Teacher Professional Development (TPD) programs in Yogyakarta. There were 73 senior high school English teachers in Yogyakarta city and Sleman regency as the participants in this research. The data were obtained through both quantitative and qualitative methods, distributed questionnaires and followed by in-depth interviews to five participants. The results of this paper firstly showed that some TPD programs were found to be beneficial perceived by the English teachers. Secondly, there were two major challenges faced by the participants, namely teachers' workload & time management and also the lack of effective follow up programs.

Keywords: teacher professional development, challenges, English teacher

Introduction

Teacher professional development is one of significant phases of teachers to function in the educational field. According to Bredeson and Johansson (2000) teacher professional development is an essential part to enhance education through advancing the quality and expertise of teachers. The quality of teachers, however, can be examined by the process of teacher professional development program in educational institutions.

Teacher professional development program is not only growing into educational focus of government, public and private schools, but also education faculty in university. Liu (2012) states that along this period, university teacher education programs have long been focus on teacher professional development, particularly in providing graduates and continuing education credit that are used for maintaining the quality (p. 709). This teacher professional development concern is related to some purposes, which are to improve teachers' knowledge, classroom practice, and students' learning outcomes (Murphy, Smith, Varley & Razi, 2015). Besides, Guskey (2002) also argues that the main goal of

professional development is to generate significant transformation in teachers' attitudes and beliefs, their teaching learning practice, and the learning outcomes, students.

Nevertheless, teachers' journey on professional development program may generate particular challenges. Hence, this paper is focusing the research on benefits and challenges faced by the teachers and possible solutions to overcome the challenges as proposed by the teachers that are involved in TPD programs. This paper aims to answer the following research questions: 1. What are the benefits of TPD programs perceived by English teachers? 2. What are major TPD challenges experienced by English teachers? The discussion on research results will be provided in findings and discussion part.

Various understandings or perceptions from scholars on professional development are prevalent mainly in educational field. Murphy et al. (2015) define professional development as a process of improving teachers' knowledge, classroom practice, and students' learning outcomes. However, sustainability of the program is primarily related to characteristics of the school organization (Gaikhorst, et al., 2016). Murphy et al. (2015) also emphasize that the objective of professional development is to generate transformation in teachers' classroom practice, teachers' attitudes and beliefs, and the learning outcomes (p. 4).

Willemse, Boeil, and Pillen (2016, p.90) argue that there are two significant ideas on professional development concerns: the focus is on the educators' development as professional occupation and individual development. Some studies revealed that professional development interventions positively affected the teachers' quality in knowledge and competences aspects of teaching. Professional development programs help teachers to improve knowledge in their subjects and also can contribute to teachers' self-efficacy (Gaikhorst et al., 2016). Gaikhorst et al. (2016) also argue that teachers, who are being involved and participated in teacher professional development program, indicated that they were more involved in the process of school development, more engaged in theory and educational transformation, and collaborated more with colleagues after joining the program (p. 136).

Guskey (2002) suggests three fundamental principles to formulate effective professional development programs: (a) acknowledge that change is a continuing and intricate process, (b) ensure that teachers collect frequent feedback on students' learning progress and (c) provide continued follow-up and support (referred from Murphy et al., 2015). Besides, in the context of teacher-centered, lecture-based instruction, interactive, and constructivist learning, the combination of teacher professional development and the use of technology is the best way to be introduced (Hennessy, Dragovic, & Warwick, 2017, p. 4).

In real situation of education, teacher professional development communities are influenced by internal and external politics (Liu, 2012). Kosnik, Menna, Dharamshi, Miyata, Cleovoulou & Beck (2015) also highlight that educators' professional development is mostly fostered by informal forms such as communities of practice. Along with communities of practice, they are indicated as groups of people who share the same concern, a set of problems, or a passion about an issue, and who deepen their knowledge and expertise.

There are some models of TPD proposed or introduced by researchers. Guskey (2000) as referred from Shabani (2016) categorizes the models of professional development into seven types, which are training, observation/assessment, mentoring, inquiry/action research, individually guided activities, involvement in a development process and study groups. These types of professional development consider the school setting as community of learning in which teachers and students are simultaneously involved in the learning process (pp. 4-5). Other forms of collaborative professional development are teachers give demonstrations and teachers observe other teachers. These forms can be used to improve teachers' teaching practice and students' performance (Chien, 2017).

There are three steps of teaching implementation that can be used as part of continuous professional development program: pre-observation conferences, observation, and post-observation conferences. Those steps could provide a great opportunity for teachers to share effective teaching practice, to share learning and collaborative improvement, to develop particular or innovative teaching techniques and methods, or to construct capabilities together with other teachers within professional learning community. Therefore, observations can be used as effective professional development for teachers when they are implemented with the skills of classroom observation and competence in giving professional and effective feedback on those observation (Chien, 2017, p. 17).

Method

Researchers used both quantitative and qualitative methods (mixed-method) as data gathering technique. Mixed-method in this paper enabled researchers conducted two phases of research. First, the researchers prepared questionnaires to the participants. Second, the answers from the questionnaires were followed up with in-depth interviews to certain participants, purposive sampling. As explained by Mills, Harrison, Franklin and Birks (2017), mixed-method used to collect and analyze data since it was found to be mutually informative in qualitative research and they are synergistic each other giving a comprehensive perspective of the topic. Questionnaire used in this paper provided empirical basis to the background and the core of information needed. As stated by Schedler and Mudde (2010), the significant part in quantitative method is data driven. In practical terms, it could be said that questionnaire provides empirical works of the study.

Furthermore, qualitative method had important role in this paper since it provided broader understanding on the participants' contexts and experiences. Migliorini and Rana (2016) pointed out the form of social relation could be seen from qualitative approach. They stated qualitative approach is concerning on social intricacy by understanding the process of individuals and communities build a harmony, know the priorities, and create the resources to face the phenomena in society. It encourages a long-term involvement in building a significant view in society.

There were two research areas used in this paper, though this paper will not be going to compare the topic in both areas. Moreover, the two areas were chosen and described separately in which they are enriching data and research results. These areas are Yogyakarta city and Sleman regency, where researchers could

find two communities of English teachers called English Teacher Network (Musyawarah Guru Mata Pelajaran Bahasa Inggris).

Research Participants

In order to understand the personal experiences, opinions, and beliefs of the participants, the researchers used purposive sampling in determining the participant groups who might be the most suitable sampling that enables researchers to answer the research questions (Kuswandono, 2013). Purposive sampling or non-random sampling determined specific groups of participants since they are considered more suitable to provide certain information needed for this paper, e.g., experiences, beliefs, and opinion which appeared during teaching in schools. Researchers considered purposive as the appropriate sampling in this paper because according to Neuman (2000) purposive sampling can be implemented in three situations of action: selecting unique cases that are informative, selecting specialized population or difficult-to-reach members, and willing to identify particular cases for in-depth investigation. This paper, however, meets those three categories of situations.

Participants' privacy is kept by using pseudonyms in this research especially for participants who were being interviewed. Reminded by Neuman (2000), social researchers should take precautions to protect participants' privacy. By this way, researchers were not disclosing participant's identity after the information is gathered. The given names that is called pseudonyms in this chapter and further chapters for interview part are Bowo, Hastuti, Indah, Kemal, Gita, and Sari. Researchers intentionally gave pseudonyms as a way to ease the process of coding, analyzing, and writing the data analysis results. However, the table 2 below is a short description of participants' information and number in total.

Table 2: Group of Participants

Category	Participant	Number	Note
Group 1	MGMP English teachers in Yogyakarta City	32	Participating in questionnaires distribution.
Group 2	MGMP English teachers in Sleman Regency	41	Participating in questionnaires distribution.
Group 3	Senior high school English teachers in Yogyakarta (Bowo, Hastuti, Indah and Kemal).	4	Participating in in-depth interviews.
Group 4	Senior high school English teachers in Sleman (Sari and Gita).	2	Participating in in-depth interviews.

Researchers divided participants' classification into four groups: two groups are from quantitative research and two other groups are from qualitative research. This classification was based on research areas and also the instrument of data gathering technique. Group 1 and group 2 consist of 73 participants from both Yogyakarta City and Sleman Regency in which they participated in answering the questionnaires at different times. Whereas, group 3 and group 4 consisted of 6

participants also from both research areas that participated in in-depth interviews at different times.

Research Instruments

Since survey gives researchers a picture of people's perception and action, this paper was using survey as data gathering technique. Neuman (2000) stated that in the survey researchers begin the research with theoretical or particular problem and ends with empirical data basis. In survey, researchers conceptualized theories or variables into questions.

The questionnaire was adapted from Teaching and Learning International Survey (TALIS) by the Organization for Economic Cooperation and Development (OECD). In the questionnaire, researchers used eleven closed-ended questions that consist of general information about teachers' backgrounds and teacher professional development programs implementation. There were also two open-ended questions that dig out the information related to challenges faced by the participants and suggestions for the government in implementing further professional development programs.

Data Analysis Technique

Data analysis techniques were divided into two separated parts: quantitative and qualitative. Providing questionnaire as quantitative technique engaged researchers to involve in technical procedures of analyzing data. When all the data were collected in form of questionnaires, researchers input the answers from every question into separated tables in Microsoft Excel and categorized them based on main topic of questions. After that, researchers combined general information and created charts from tables. Answers from open-ended questions were also formulated in general summary of teachers' challenges and suggestions on professional development programs. At last, researchers input those data both charts and brief description from open-ended questions into results and discussion part in chapter 4.

In qualitative method, researchers conducted interview first to participants. The interviews were recorded and researchers directly transcribed the conversation from the recording. The process of transcription took some periods of time because the interview could spend two hours per participant or even more. After got all the transcriptions, researchers encoded the answers based on theoretical framework about teacher agency. The process of encoding data invited researchers to categorize the answers based on coding from framework, input them in most suitable places. At last, researchers translated the coding from Bahasa Indonesia to English and input them in results and discussion part as descriptive account.

Results and Discussion

Participants Background

This section consists of two significant categories to describe teachers' background, namely gender and teaching experience. The explanation will also be

categorized into two different areas of study in Yogyakarta: Yogyakarta city and Sleman regency.

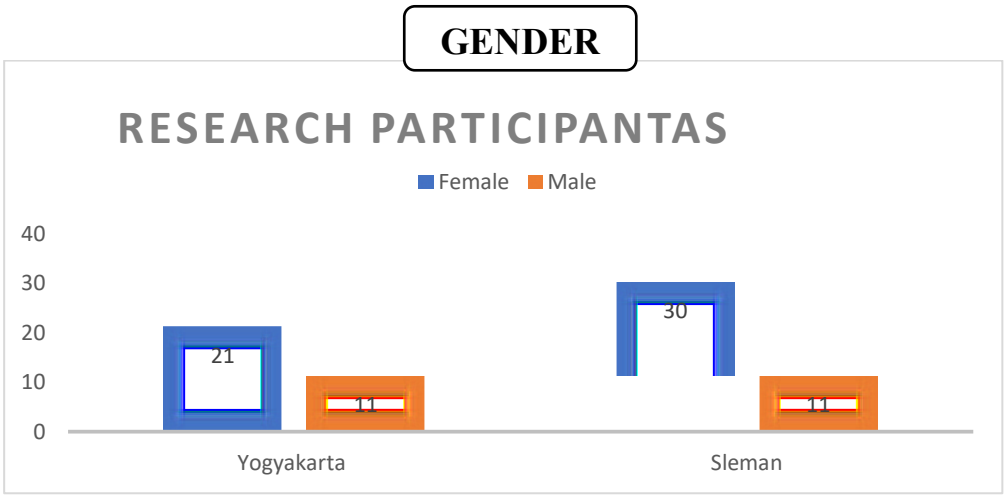


Figure 1. Research participant gender

As the preliminary data, gender was found to be constructive to enrich researchers' knowledge and interpretation. The chart above shows that female is the dominant gender of English teachers in both Yogyakarta City and Sleman Regency. This phenomenon, however, could bring us to some understanding that women hold important role in TPD programs implementation process. Culturally, the majority of female teachers in Indonesia hold double jobs: as professional teachers and as mothers or even housewives in the family. Generally, female teachers are still working on mothers' duties in their houses. So, they should work on professional duties in the morning and continue work on family matters in the afternoon. Like it or not, this condition brings significant impact to TPD implementation process. Female teachers are already tired of some responsibilities they should do. It may influence their performance in compulsory TPD programs conducted by the government and also, they become reluctant to join TPD programs suggested by the school to improve skills and knowledge.

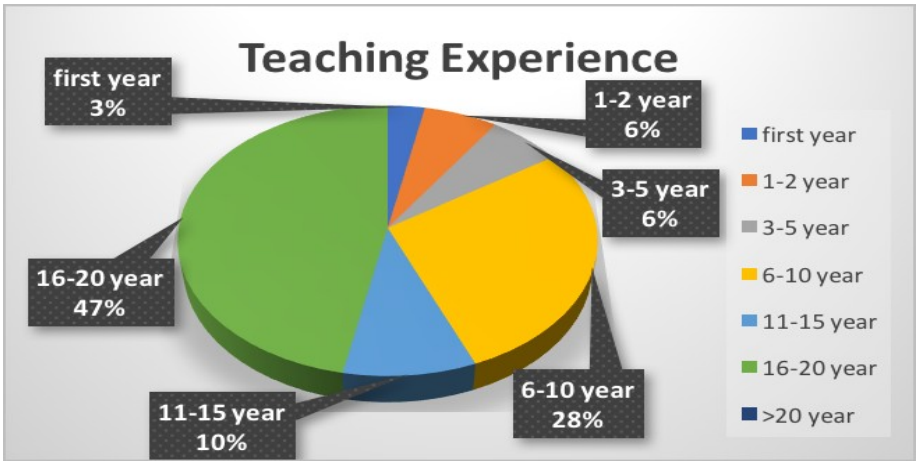


Figure 2. Teaching experience range in Yogyakarta

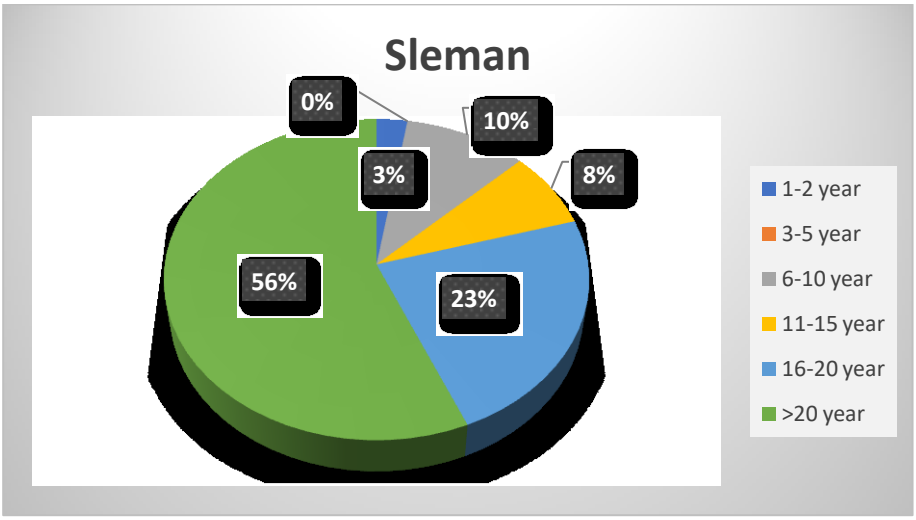


Figure 3. Teaching experience range in Sleman

The teaching experience duration is also influencing TPD journey. From the results of teaching experience duration from both Yogyakarta city and Sleman regency, they have shared similar results; the majority of teachers have experienced teaching for more than 16 (sixteen) years and some others even more than 20 (twenty) years. The long period of teaching impacts in some teachers' conditions related to personal and professional development. First, duration of teaching experience above ten years indicates teachers' identity construction relatively fixed. It means that teachers tend to feel comfortable or sufficient with all the methods they have, their capabilities tend to be fixed, and hold old-fashioned of teaching or drawing more past experiences rather than exploring new ideas from external factors. Besides, a growing body of research shows that the most significant moment for teacher development takes place within the first four or five years when new teachers were firstly recruited. So, teacher professional development is highly influenced by the accompaniment process in school from principal, peers, mentors and students.

Perceived Benefits by the English Teachers in Yogyakarta

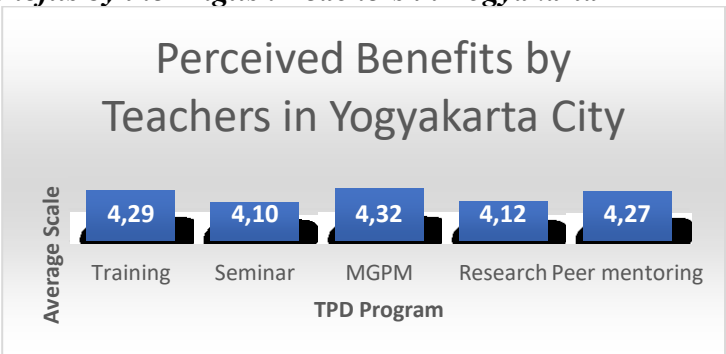


Figure 5. Perceived benefits in Yogyakarta

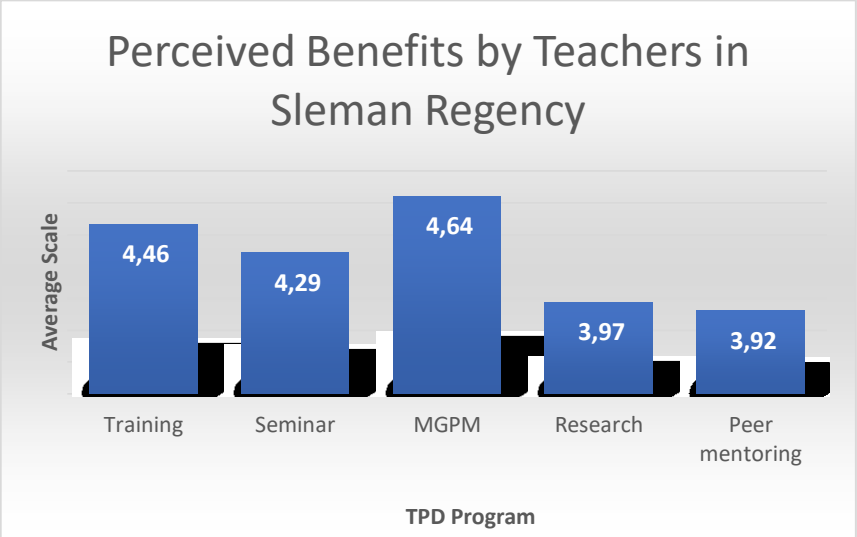


Figure 6. Perceived benefits in Sleman

This paper pointed out that there are at least five TPD programs conducted and experienced by senior high school English teachers in Yogyakarta City. Those programs are workshop, seminar, English Teacher Network (MGMP), research, and peer-mentoring. Specifically, MGMP is an organization consists of English teachers who usually work together in developing their professional learning. Indonesian Law Number 14, 2005 about Teacher and Lecturer has mandated that teacher should develop competence and academic qualification continuously. This regulation, thereupon, has supported teachers to establish a community namely English Teacher Network (MGMP) to help them share knowledge and challenges they faced on teaching English in schools.

The survey data showed that the big majority of participants (87%) admitted to have attended various seminars. In addition, they claimed to have learned much from the seminar (4.10 of 5.0). After the researchers distributed questionnaires, the result reveals that majority of English teachers in Yogyakarta City have participated TPD programs. The data presents high significant numbers of the participation. Therefore, the result also shows that there are some numbers of the participants stated that they have never been experienced conducting research in schools (18,75%). One of participant, moreover, also stated that conducting research is burdening for teacher to be implemented.

"Never conduct a classroom action research before because it is so burdening and have to manage our time wisely, we have many things to do related to teaching activities and administrations" (Hastuti).

Hastuti emphasized that teacher research is burdening in the midst of instrumentality works as teacher. She was concerned more in administration works and teaching activities as the obligation from the government, so this made her never conducted any research in school. However, research is very important to teacher in developing professionalism. Zeichner (2003) stated that conducting research will help teachers to be better in teaching, develop the quality of learning for students, stimulate positive culture and productivity of schools, and teacher

necessarily will produce knowledge about teaching and learning that will be useful. By that phenomenon, it is necessary for teachers to have more opportunity in conducting research as a part of professional development in education but with less administration workload.

Majority of the participants got positive impact from workshop, seminar, and peer-mentoring. These data from questionnaires can present positive impact to teachers. However, data from the interviews reveal different perception. There are two categories of the involvement in English Teacher Network program based on researchers' findings: positive and negative perception. Hastuti was actively participating in English Teacher Network, she shared the activities and positive impact of it to her professional teaching.

> "When there is a need of discussion on certain topics, we will meet to discuss together. For example, in the previous meeting we discussed on writing and collecting lesson plans of Kurikulum 2013 to each English teacher because it is difficult to be made by ourselves" (Hastuti).

Hastuti mentioned programs organized by English teacher network. Her statements are indicating that the program like collecting lesson plan of the newest curriculum helps her reducing the workloads. Meanwhile, Indah and Bowo share different perspectives on English teacher network.

> "I have lack of information about the program, because there is no invitation that I got from English Teacher Network. I don't know what the problem is, whether in the technical procedures or others, I am not sure" (Indah).

> "For me English Teacher Network did not give any contribution at all to us as teachers, nothing" (Bowo).

Indah explained that she has very limited information about the programs, she did not receive any invitation from English teacher network, so she cannot participate in the programs. Besides, Bowo stated differently. He thought English teacher network did not provide any contribution to his teaching development. From the interview with Indah, she explained English teacher network cannot run the organization well, it has inconsistency in regular meeting.

Indah expected this organization can be a space for teachers to share knowledge and help each other in many ways. One of them is collecting lesson plan. She was excited with this program because collecting lesson plan will be useful for teachers to teach English in the classroom. However, she found that there was no follow up from this program, there was no result progress in collecting lesson plan between the members. She, then, questioned the commitment of this program and also this organization. Indah was disappointed to this organization as one of TPD program because he saw this program is far away from his expectation.

TPD Challenges in Indonesia

1. Workload and Time Management

Workload is one of the factors that affect TPD process. When teachers hold such workloads and burdens, they cannot participate actively and continuously in TPD because they have to manage the time and priority effectively. This is the challenge faced by the teachers when they have dual role in education system. As explained by Petrie and McGee (2012) the challenge faced by the teachers is how to negotiate this dual role, teachers as educators for the students and teachers as the learners in professional development. Besides, they are also challenged to deal with pressures related to workload, cover all the curriculum areas, and deal with constantly changing demands from the policy makers.

Furthermore, this paper revealed that majority of participants were burdened by the workload they dealt with as the obligation from the stakeholders or policy makers on education. Teacher workload directly impacted to time management they would handle as teachers and learners. These teachers had lack of time to administer their dual role. 56,5% of the participants stated time as the biggest challenge they faced in order to participate in TPD program. This result shared the similar idea with the previous study conducted by Thorpe and Tran (2015) who stated that time to undertake the task and complexity of teacher role carries a heavy burden to teachers and create dilemma for them on how they should relate to their surroundings.

2. The Absence of Follow Up Program

Teacher professional development programs are expected to develop teacher's skills and knowledge through particular content-based activities. These activities require instructors to adjust the content so it will be integrated with teacher's needs in their profession. Besides, it is necessary to also monitor the program implementation to know the impact to teachers through designing follow up program. Follow up will be useful to figure out the extent to which the program run and find its strengths and weaknesses. Willemse, Boei and Pillen (2015) emphasize that follow up program is needed to prevent the results of the activity become fading away. In addition, Sinha and Hanuscin (2017) also proclaim that feedback as part of follow up program offers teachers an access to suggestions and strategies to overcome difficulties. Therefore, aside from types of activities, TPD program implementation should have follow up activity to monitor the program from the beginning to the end as well as obtain new strategies and suggestions.

However, this paper exposed follow up program as one of the biggest challenges in implementing TPD. For instance, workshop on conducting classroom research done by teachers remained only workshop without any follow up or feedback to both teachers and instructors. This indicated that workshop as one of TPD program in Indonesia, was implemented as single program instead of continuous program. Whereas, single program particularly workshop has commonly little follow up, and as the consequence, it also has little effect on teacher growth and understanding (Loucks-Horsley & Matsumoto, 1999; Pianta, 2011; Spillane, 2002; Whitworth and Chiu (2015). Previous study conducted by

Whitworth and Chiu (2015) pointed out that TPD program which is typically delivered short in-service workshop has little or even no follow up at all. Compared to this research, researchers found the similarity with that previous study in terms of 'one-shot' or single program which affects to follow up. Hastuti shared her experience when she joined a single workshop on writing and conducting classroom research held by the government. She said there was no feedback and follow up after the program was successfully implemented.

> "My research was about reading text explanation for grade twelve in senior high school. There was no feedback or follow up, I got the certificate from this workshop was more than enough. To get the certificate, the officer had to ask my writing supervisor first whether I can get it or not because it was an uneasy process. Fortunately, I got the certificate because I was already in the second consultation stage, I finished chapter 2" (Hastuti).

As stated by Hastuti, there was no follow up program or feedback she got after the workshop primarily in monitoring further research, such as gathering data and analyzing them to attain research findings. Thus, TPD program implementation is assumed to be unready and not well managed by the authority when there is an absence of follow up program, especially feedback. In other words, this type of TPD is likely to be ineffective to teacher's growth. Bowo also shared the same opinion towards follow up program of TPD.

> "I think it was only a program, when I met the difficulties during the program, I asked the instructor about the solution and he had no idea. It turned out that the instructor only transferred the materials he got to teachers in Yogyakarta City" (Bowo).

Bowo emphasized that TPD program he experienced did not provide any follow up related to content mastery. It led the teachers face confusion during and after the program implemented because it was a 'one-shot deal' program. Therefore, it is considered that the program did not focus on content knowledge material as the main goal, instead, it accentuated the goal in instrumentality level. One-shot program tends to often address administrative, management, and discipline issues; so that the results will be ineffective and lack of coherence (Whitworth & Chiu, 2015). Otherwise, TPD of a longer duration is likely more effective in changing teacher's practices, especially in content mastery. Whitworth and Chiu (2015) also add the general characteristic of TPD lies on the content knowledge coherence. Additionally, effective TPD should not only help teachers develop content knowledge, but also help them integrate their learning, pedagogy, and students to teaching practice. Content focused in TPD program will generate positive effect to teaching and learning process in the classroom (Firestone, Mangin, Martinez & Polovsky, 2005).

Conclusion

This paper pointed out that there are at least five TPD programs conducted and experienced by senior high school English teachers in Yogyakarta City. Those programs are workshop, seminar, English Teacher Network (MGMP), research, and peer-mentoring. Specifically, English teacher network (MGMP) is an organization consists of English teachers who usually work together in developing their professional learning. Indonesian Law Number 14, 2005 on Teachers and Lecturers has mandated that teacher should develop competence and academic qualification continuously. This regulation, thereupon, has supported teachers to establish a community namely English Teacher Network (MGMP) to help them share knowledge and challenges they faced on teaching English in schools. There were at least four factors affecting the challenges on TPD implementation, namely workload and time management, follow-up program, supervisory function, and lack of socialization.

References

Chien, C.W. (2017). Elementary school English teachers' professional learning from teaching demonstrations as professional development. *Cogent Education*, *4*(1), 1–20.

Firestone, W. A., Mangin, M. M., Martinez, M. C., & Polovsky, T. (2005). Leading coherent professional development: A comparison of three districts. *Educational Administration Quarterly*, *41*(3), 413-448.

Gaikhorst, L., Beishuizen, J. J., Zijlstra, B. J., & Volman, M. L. (2017). The sustainability of a teacher professional development programme for beginning urban teachers. *Cambridge Journal of Education*, *47*(1), 135-154.

Guskey, T. R. (2002). Professional development and teacher change. *Teachers and teaching*, *8*(3), 381-391.

Hennessy, S., Dragovic, T., & Warwick, P. (2017). A research-informed, school-based professional development workshop programme to promote dialogic teaching with interactive technologies. *Professional Development in Education*, 1-24.

Kosnik, C., Menna, L., Dharamshi, P., Miyata, C., Cleovoulou, Y., & Beck, C. (2015). Four spheres of knowledge required: An international study of the professional development of literacy/English teacher educators. *Journal of Education for Teaching*, *41*(1), 52-77.

Kuswandono, P. (2013). *The journey of becoming a teacher: Indonesian pre-service teachers reflecting on their professional learning* (Doctoral dissertation, Monash University).

Liu, K. Y. (2012). A design framework for online teacher professional development communities. *Asia Pacific Education Review*, *13*(4), 701-711.

Loucks-Horsley, S., & Matsumoto, C. (1999). Research on professional development for teachers of mathematics and science: The state of the scene. *School Science and Mathematics*, *99*(5), 258-271.

Migliorini, L., & Rania, N. (2017). A qualitative method to "make visible" the world of intercultural relationships: the photovoice in social psychology. *Qualitative Research in Psychology, 14*(2), 131-145.

Mills, J., Harrison, H., Franklin, R., & Birks, M. (2017). Case study research: Foundations and methodological orientations. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research, 18*(1), 17. DEU.

Murphy, C., Smith, G., Varley, J., & Razi, O. (2015). Changing practice: An evaluation of the impact of a nature of science inquiry-based professional development programme on primary teachers. *Cogent Education, 2*(1), 1–19.

Neuman, W.L. (2000). Social Research Methods: Qualitative and Quantitative Approaches. United States of America: Pearson Education Company.

Petrie, K., & McGee, C. (2012). Teacher Professional Development: Who Is the Learner? *Australian Journal of Teacher Education*, *37*(2), 59-72.

Pianta, R. C. (2011). Teaching Children Well: New Evidence-Based Approaches to Teacher Professional Development and Training. *Center for American Progress*.

Schedler, A., & Mudde, C. (2010). Data usage in quantitative comparative politics. *Political Research Quarterly*, *63*(2), 417-433.

Shabani, K. (2016). Applications of Vygotsky's sociocultural approach for teachers' professional development. *Cogent Education, 3*(1), 1–10.

Sinha, S., & Hanuscin, D. L. (2017). Development of teacher leadership identity: A multiple case study. *Teaching and Teacher Education*, *63*, 356-371.

Spillane, J. P. (2002). Local theories of teacher change: The pedagogy of district policies and programs. *Teachers college record*, *104*(3), 377-420.

Thorpe, A., & Tran, D. T. H. (2015). Understandings of the role of subject leaders in the professional development of beginning teachers within a school department: a Vietnamese perspective. *International Journal of Educational Research*, *71*, 108-117.

Whitworth, B. A., & Chiu, J. L. (2015). Professional development and teacher change: The missing leadership link. *Journal of Science Teacher Education*, *26*(2), 121-137.

Willemse, T. M., Boei, F., & Pillen, M. (2016). Fostering Teacher Educators' Professional Development on Practice-Based Research Through Communities of Inquiry. *Vocations and Learning*, *9*(1), 85–110.

Zeichner, K. M. (2003). Teacher research as professional development for P–12 educators in the USA [1]. *Educational Action Research*, *11*(2), 301-326.

Author Guidelines

The editors of ***International Journal of Indonesian Education and Teaching (IJIET)*** welcome authors to submit articles written **in English** in accordance with the following guidelines -- points 1-10:

1. Articles have not been published or accepted for publication, or are being considered for publication elsewhere.

2. In addition to the manuscript, a written statement should be attached which clarifies the originality and free of plagiarism.

3. Types of articles suitable for publication include research reports and conceptual ideas.

4. Each article should be between 2,500 and 4,500 words long and in form of essay written in English which includes:
a. Title (15-20 words) in bold type, upper case, and in 12- point size of Times New Roman font,
b. Author's name (without academic degree) with an e-mail address and institution's name.
c. Abstract in English (150-200 words) which includes research problems, methods, and results.
d. Keywords in English (3 - 5 words).
e. Introduction (without subsection) which includes the background and objectives. The introduction section ends with an emphasis on items to be discussed.
f. Theory (literature reviews/theoretical construct) of the research.
g. Method
h. Results (with sections)
i. Discussion (with sections) which includes data analysis, verification of hypothesis, findings, and the interpretation.
j. Conclusion (without sections) which includes the concluding remarks, research implications, and suggestions.
k. Reference list should appear at the end of the article and includes only literatures actually cited in the manuscripts. Reference list should contain at least 60% new primary literatures and at most 40% new secondary literatures. References are ordered alphabetically and chronologically. When writing a reference list, please use the APA style (the sixth edition).

5. Conceptual Idea
a. Introduction
b. Theory
c. Theory Application
d. Conclusion
e. Reference

6. Every section heading is in bold type and in upper case for the first letter, for example, Introduction, and every subheading is in bold type, in italics and in upper case for the first letter of each content word and in lower case for the first letter of each function word, except for the first letter of the function word which begins a subheading, for example, Data Analysis and Engaging Activities and Tasks.

7. Another suitable type of article is a book review. Please note the following requirements for submitting book reviews:
a. Books being reviewed should be newly published.
b. Book reviews should be between 2 – 4 pages in length.
c. A copy or scan of the book cover should be attached.

8. The editors appreciate if authors excerpt information from subsequent published articles in IJIET.

9. Articles should be uploaded onto IJIET website in soft-files using Microsoft Word application, double-spaced on A4-sized paper, using 12 size Times New Roman font. Each article, written in English, should be between 2,500 and 4,500 words long.

10. Authors will be sent notifications of the receipt of manuscripts and editorial decisions (whether the articles are accepted or not) by e-mail.

Article submissions and publications in IJIET are free of charge -- without any article submission charges or article processing charges.

Sanata Dharma University