DESIGNING ENGLISH INSTRUCTIONAL MODEL: AN INTEGRATED TECHNOLOGY IN ESP FOR BIOLOGICAL STUDENTS

Rahmatullah Syaripuddin[1], Salasiah Ammade[2]
STAI DDI Pinrang, Indonesia[1]
Universitas Muhammadiyah Parepare, Indonesia[2]
Email: rahmatullah.syaripuddin@gmail.com[1]
Email: evisalasiah@gmail.com[2]

Abstract: Designing an English instructional model is essential for educators before teaching in class. It is done by first analyzing the students' needs. This study was based on the students' needs regarding the instructional model of English teaching in the Biology Department. The objective of this study was to design English materials by combining YouTube and ABA (American and British Academy) Applications based on the students' needs and the result was an English instructional model for ESP instruction. The study was mixed-method research and the subject of the research was Biological students of Universitas Muhammadiyah Parepare, Indonesia. The result of the study shows the instructional model focused on input, process, and output. The input stage consists of goals and skills. In the process, there are learning activities and places. Finally, in the output, there are learning outcomes. Every skill consists of five activities. Every skill consists of five activities. There are five activities in Listening skills, namely hearing, understanding, remembering, responding, and evaluating. Speaking consists of apprehending, synthesizing, analyzing, and evaluating while reading skill focuses on generating, comprehending, discussing, and evaluating. In writing skills, the activities are pre-writing, composing, feedbacking, revising, and evaluating. There were two venues of the model. They were indoor and outdoor. Besides, the learning outcomes focused on cognitive, affective, and psychomotor. The instructional model was done by analyzing the students' needs of the questionnaires while the lecturer's interview result was used to strengthen the lack of learning process.

Keywords: *English instructional model, integrated technology, ESP*

1. INTRODUCTION

Learning and teaching are the main aspects of education, especially in English teaching (Hanafiah et al. 2022). It is related to historical, social, cultural, and political issues (Dehghayedi and Bagheri 2018). Besides, it can be defined as a change in attitude that is influenced by experience which occurs from time to time (Wallace, Wallace, and Benson 2016). Additionally, Zhao (2017) states that learning subject knowledge requires knowledge that is first recognized, then internalized and reproduced in and through the second language. It can also be

103

caused by the result of acquiring new knowledge, skills, principles, perceptions, facts, information, etc (Wallace, Wallace, and Benson 2016). Thus, learning and teaching can be defined as an activity related to historical, social, cultural, and political issues that are brought about by experience, which involves knowledge in it.

Designing an instructional model is important because it can lead teachers to develop instructional materials and empower the learning process(Sewang and Aswad 2021). It gives a very significant role to the success of learning (Mangila 2018). It is because the Instructional materials provide teaching and learning activities and consequently, achieve the lesson objectives (Wallace, Wallace, and Benson 2016). In line with it, (Irawan, Padmadewi, and Artini 2018) claim that having good and appropriate materials will make a positive contribution to the student's learning process. They also add that it could help the students to learn English easier. It is because they are learning useful materials that are related to their future demands. In addition, Safdari et al. (2018) state that teaching is the ability to explain knowledge, methodology, and the use of technology by combining and applying it in the learning process to create the best learning opportunities for students. Thus, designing a good instructional model is a consideration for the teacher before carrying out the learning process.

One of the instructional models which are very important to develop is English instruction for academic purposes. According to (Mangila 2018), most of the studies in language education, especially in the English language, focus on textbook analysis.

A textbook is like an e-book, where an e-book is one of the media that involves the use of technology for EAP students that must be understood and considered by all EAP authorities and teachers (Alavi and Dashtestani, 2014). The instructional material like a textbook is the primary resource for the students to gain much more information and become the first phase for the teacher to guide the students. Merkuri and Boboli (2012) state that in the learning process, giving focus to students is carried out in the early phase of learning and this is done gradually. Giving focus to learning will help students become more independent in carrying out learning activities in class.

The use of instructional materials like textbooks in teaching English made the students easier to improve their English language skills. Alavi and Dashtestani (2014) argue that students need skills in reading comprehension as well as in improving their English language skills by studying e-books consistently both inside and outside of learning activities. Moreover, they have also researched and found that e-books have a positive impact on students' learning experiences. In conclusion, one of the English instructional material forms that is very useful to use in the classroom is a textbook, it is because an instructional textbook provides many information and guidance for the students (Alavi and Dashtestani, 2014; (Merkuri and Boboli 2012)).

Based on the observation conducted in Universitas Muhammadiyah Parepare at Biological Department, it was found that the student's English skills were in poor classification. After giving the questionnaire to the students, most of the students

stated that they need a good method, media, and learning facilities to support their study. Moreover, the students did not have any English instructional books referred to as Biological materials. Thus, the study was conducted to design an appropriate English Language Teaching model for Biological Students at Muhammadiyah University of Parepare so that it would be used by the lecturer to develop English for Biology Instruction. English instructional model was designed by noticing the students' needs for English. The data were collected through questionnaires and interviews. The questionnaire was given to students to know their potential needs while the interview was given to the English lecturer of the Biological department to explore the existing material given to the students.

2. LITERATURE REVIEW
Language Curriculum Design

The curriculum refers to a detailed description of learning that is formulated from the results obtained which have good content and performance standards (Merc, 2017). It is created through a writing process that involves reviewing, gathering, linking, and editing ideas into text which results will be used as guides and teaching materials in the classroom (Nation and Macalister, 2011). There are several steps introduced by Nation and Macalister (2010) in designing a language curriculum. They are environmental analysis, needs analysis, principles, objectives, content and sequence, format and presentation, monitoring and assessment, and evaluation.

ESP Course Design and the Integration of ICT

English for Specific Purposes (ESP) aims to make teachers easier to teach languages, provides teaching components, and develops their skills as desired in a profession, discipline, or workplace (Basturkmen, 2008). He also adds that ESP teaching provides a stimulus to teachers and curriculum designers in analyzing the needs of students and designs the learning process in both a short and long time duration. According to Luna and Taillefer (2018), ESP and technology cannot be separated because it has become a combination that seems very suitable for each other: ESP courses are made based on a needs analysis that summarizes all the needs of the educative agents involved (for example, teachers, students, and materials). The use of information and communication technology (ICT) in learning is needed by teachers and language professionals. At the same time, they need the training to improve their skills continuously (Luna and Taillefer, 2018). Therefore, the integration of technology is very necessary for teaching ESP, especially in designing ESP courses. Thus, in the millennial era, students are faced with the use of technology. Because the existence of technology is very massive, students are more interested in learning by utilizing technology in the classroom. Integrating technology into the learning process is something that all components of educators need to look at to have an impact on education globally, and English language teaching has been influenced by this movement (Li, 2018).

Teaching English for academic purposes at the university level requires students to work in groups

of the same language level (Navas, et al. 2018). They also add that to overcome this phenomenon, technology has been equipped with virtual spaces and blended learning which aims to facilitate the collective learning process. Ease of using technology can be defined as the potential benefits derived from the technology itself in the learning process (Li, 2018). He also argues that the development of digital and web materials has enriched learners' experience in obtaining authentic materials and proving how language is used in certain situations. Stimulating creativity and critical thinking are skills that direct students to understand learning materials more deeply and guide them to the right goals (Ozieblo, 2018).

The use of technology in teaching ESP can be the answer. ESP aims to ensure students are successful in communicating using a second language in a variety of professional contexts, and this can be realized through the integration of technology in language learning. Consequently, students would be easy to get much more knowledge. Thus, in developing an ESP material by integrating the technology, teachers need to determine the type of material that will be discussed in face-to-face learning and what material will be taught through online teaching, the rest will be the responsibility of students to study it more intensively (Ozieblo, 2018).

YouTube as an Authentic Material

YouTube can be in the form of an application and website that provides a lot of videos. It contains many videos that allow people to learn informally by watching them (Cayari, 2011), and it has been developed to be an online video-sharing destination (Alias et al. 2013). Thus, today, it can also be in the form of an application that can be downloaded via the App Store and play store. According to Boyaci and Guner (2018), authentic visual materials include pictures, slides, photographs, children's drawings, skylines, non-verbal street signs, nonverbal picture books, magazine pictures, postcards, and stamps. He also adds that authentic written materials are movies, newspaper articles, astrology columns, recommendation columns, sports news reports, lyrics, street signs, restaurant menus, etc. Besides, authentic learning is determined based on authentic material and tasks given to students. Daily life-based tasks, Student-centered, intriguing, and interactive are authentic learning (Boyaci and Guner, 2018). Thus, YouTube which provides a video with audio and visual elements, as well as social media can be used for teaching purposes (DeWitt et al., 2013). They also found that arts can be promoted by YouTube that is integrating it into the learning and teaching process.

Advantages of YouTube Application

There are some advantages of using YouTube in the instructional process. They are, (1) allowing people to discuss ideas, art, and songs, (2) sharing video clips and news, (3) recording and disseminating course lectures, (4) utilizing knowledge generation through observation and social interactions, and (5) enhancing the knowledge base in performing arts (DeWitt et al. 2013).

American and British Academy (ABA) Application

ABA English is an online learning platform that provides English language materials based on students' English level. This application can be downloaded via the app store and play store. According to Seiz (2016), ABA English is a language learning application that can be used via smartphones developed by the American and British Academy. The application has been designed by adjusting the characteristics possessed by Mobile Assisted Language Learning (MALL). ABA contains complete interactive English material for adults consisting of 144 modules or didactic units consisting of 6 levels according to the Common European Framework of Reference for Languages (CEFRL): Beginner (A1), Lower Intermediate (A2), Intermediate (B1), Upper Intermediate (B2), Advanced (B2-C1) and Business (C1). Each level includes 24 units.

From the definition explained by Seiz (2016), ABA is included in Contextual Teaching and Learning (CTL) where CTL aims to display content through many active learning techniques that are made to help students understand learning to achieve their desired goals. Other than that, CTL also aims to build new knowledge from the analysis and synthesis of this learning process (Hudson and Wishler, 2001). It should be emphasized that CTL involves a communication process, not language acquisition. In addition, Surdin (2018) adds that CTL is a learning system designed according to the work function or performance of the human brain. It is intended that students can build meaningful ideas by connecting academic content with the context of everyday life. What is more important is that ABA

English is an authentic material that can be integrated as a learning material because the structure of the material presented relates to current life issues and is designed for learning purposes (Ochoa et al., 2016).

3. METHOD

The study was mixed-method research conducted at Universitas Muhammadiyah Parepare. In this study, the researchers analyzed students' needs for English. Based on the analysis, the researchers designed the instructional model by combining YouTube and ABA English applications. The goal of this study was to design the models of English materials through the combination of YouTube and ABA English applications. The research was conducted in three main phases, namely, research, analysis, and design phase. In the research phase, the researcher analyzed the potential problem that the subjects possess. Based on the potential problems, the researcher analyzed the learning needs. Need analysis has an important role in getting brief and transparent information about what needs to do (Ammang et al., 2018). After analyzing the learning needs, the researcher designed the instructional model for Biological students. Then, the researcher conducted expert validation. The expert subject is the subject who reviewed, judged, evaluated or validated the model. The subject is an expert in English language teaching and learning. For the need analysis, the subjects were the students of the Biology department of Universitas Muhammadiyah Parepare. There were five classes of students involved in the Biology department. The subjects consist of 46 students.

In obtaining the data, the researcher used the questionnaire to gain much more information about

potential needs and problems from the students and lecturers. The questionnaire was used to obtain the students' needs while the interview was used to gain data from the lecturer. It was done to achieve the target of need assessment and analysis. The questionnaire was also used to get the data from experts to know the validity level of the model. Since this research is mixed-method, therefore, the researcher analyzed the data qualitatively and quantitatively.

4. FINDINGS

1. The Students Questionnaire Result

Table 1. Course level percentages

No	Course Level	Frequency	Percentage (%)
1	Elementary	24	52.17
2	Intermediate	9	19.57
3	Advanced	1	2.17
4	TOEFL/IELTS preparation	0	0.00
5	Never join any English course	12	26.09
Total		**46**	**100**

Table 1 shows that more than 50 % of students ever took an elementary English course and some of them are at the intermediate level. Besides, several students never took any English courses. In conclusion, most of the research samples need to improve their English language.

Table 2. The percentages of English skills needed

No	English skills required	Frequency	Percentage (%)
1	Listening	5	9.62
2	Speaking	35	67.31
3	Reading	9	17.31
4	Writing	3	5.77
Total		**52**	**100**

Table 2 shows that the most needed skill chosen by the students is speaking skill. But, it does not mean other skills are not important. Because the data also portrays that some students also point out other skills to be important skills.

Table 3. The mean score of environmental analysis

No	Environmental analysis	SA (%)	A (%)	U (%)	D (%)	SD (%)	Total (%)
1	Students' perspective toward English learning	245.65	569.57	197.83	78.26	8.70	1100
2	Students' perspective toward the lecturer	84.78	310.87	78.26	26.09	0.00	500
3	Students› perspectives toward the situation	182.61	350.00	108.70	54.35	4.35	700
Total score		**513.04**	**1230.43**	**384.78**	**158.70**	**13.04**	**2300**
Mean score		**22.31**	**53.50**	**16.73**	**6.90**	**0.57**	**100**

Table 3 shows that many students agree that the environmental situation in the English classroom had been good to get students' attention. On the other hand, there were some students who also uncertain, disagree, and strongly disagree with the environmental situation in the English classroom. Therefore, the researchers focused on decreasing the lack of environmental situations happening during the learning process so that most students felt good when receiving the English material.

Table 4. The mean score of the principles analysis

No	Principles	SA (%)	A (%)	U (%)	D (%)	SD (%)	Total (%)
1	Content and sequencing	17.39	66.85	13.04	2.72	0.00	100
2	Format and presentation	14.03	62.65	19.96	2.96	0.40	100
3	Monitoring and assessment	10.87	77.17	11.96	0.00	0.00	100
Total score		42.29	206.67	44.96	5.68	0.40	300
Mean score		14.10	68.89	14.99	1.89	0.13	100

Table 4 indicates that most of the students strongly agree and agree with the principles that would be adopted in the materials. Only a few of them stated disagree and strongly disagree with it. In conclusion, most students agree to the content and sequencing, format and presentation, and monitoring and assessment.

The Lecturer Interview Result

In teaching English courses, English lecturers in the Biology department taught students English for Specific Purposes (ESP) materials. Student-centered learning is a learning model applied by the lecturer. Where this learning model triggers students to be more active in collecting information and doing the given assignments. In giving assignments, lecturers divided the class into two categories, namely giving assignments in groups and individually. The goal was to build togetherness among students. Besides, giving assignments individually and in groups made them easier to complete assignments because working in a group could make communication among students effective. The individual assignments were intended to stimulate students' ability to complete assignments independently. In this case, they already have a basic knowledge of what to do.
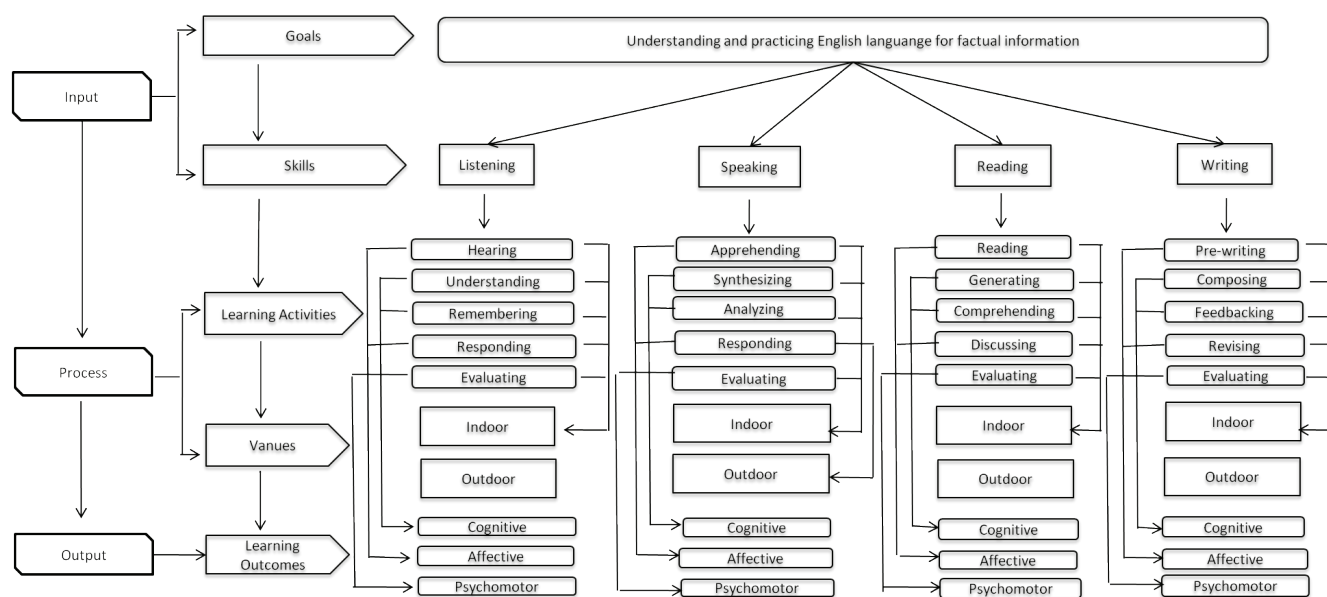
Figure 1. Instructional Model of English for Biology

The instructional model focused on input, process, and output. In input, there were goals and skills. In the process, there were learning activities and venues, and in the output, there were learning outcomes. The skills were listening, speaking, reading, and writing. Additionally, the venues were designed indoors and outdoors with three learning outcomes namely cognitive, affective, and psychomotor.

5. DISCUSSION

In designing English instructional material for biological students, the lecturer needs the deepest analysis. It is because instructional materials require a detailed description of learning that is formulated from the results of students' needs which have good content and performance standards (Merc, 2017). On the other hand, instructional material provides teaching and learning activities so that it can help learners achieve the lesson objectives (Wallace, Wallace, and Benson 2016). Thus, the lecturer needs an understanding of what level their students are at. In analyzing the students' level of English, the researcher collected data about students' frequency of taking an international English test and previous English courses they ever joined. The function is to acquire new knowledge, skills, principles, perceptions, facts, and information, because, learning and teaching activity should be related to historical, social, cultural, and political issues that are brought by experiences (Wallace, Wallace, and Benson 2016). The result showed that most of the student's English level was at the elementary level, none of them ever took an international English test and many of them never joined an English course. Therefore, in designing the instructional material, the researcher gave a very Basic English material suited to authentic biology materials.

In studying all skills in English, most of the students stated that they are important to study. Thus, in designing instructional material, especially for ESP, the researcher integrated all skills of English to make teachers easier to teach languages, provide teaching components, and develop their skills as desired in a profession, discipline, or workplace (Basturkmen, 2008). Moreover, to boost the students' motivation, the researchers focused on decreasing the lack of environmental situations happening during the learning process so that most students felt good when receiving the English material. One of the ways to create a good learning environment is by facilitating the students with appropriate tools for learning for instance integrating technology into the process of learning. According to Luna and Taillefer (2018), ESP and technology cannot be separated because it has become a combination that seems very suitable for each other: ESP courses are made based on a needs analysis that summarizes all the needs of the educative agents involved (for example, teachers, students, and materials). Therefore, the use of information and communication technology (ICT) in learning is needed by teachers and language professionals.

Having a good analysis of students' English background and environmental analysis was not enough to design a good instructional model for biological students. Thus, the researcher analyzed the students' learning principles such as content and sequencing, format and presentation, and monitoring and assessment. Most students agree to implement content and sequencing, format and presentation, and monitoring and assessment in their learning process. The learning principle used in content and sequencing was the use of authentic material from YouTube and ABA English Applications. YouTube contains authentic visual materials while ABA English Application contains English language materials based on the student's English level. Authentic visual materials include pictures, slides, photographs, children's drawings, skylines, non-verbal street signs, nonverbal picture books, magazine pictures, postcards, and stamps (Boyaci and Guner, 2018). He also adds that authentic written materials are movies, newspaper articles, astrology columns, recommendation columns, sports news reports, lyrics, street signs, restaurant menus, etc. Besides, authentic learning is determined based on authentic material and tasks given to students. Daily life-based tasks are student-centered, intriguing, and interactive and are authentic learning (Boyaci and Guner, 2018). Thus, YouTube which provides a video with audio and visual elements, as well as social media can be used for teaching purposes (DeWitt et al., 2013).

Based on the students' needs, the ESP instructional design for Biological students consisted of input, process, and output. In input, there were goals and skills; in the process, there were learning activities and venues, and in the output, there were learning outcomes. The goal of English for Biology instruction is to make the students understand and practice English skills in the form of factual information. The skills were listening, speaking, reading, and writing. In the learning activities of listening, the students need to complete five activities, namely hearing, understanding, remembering, responding, and evaluating (Tyagi, 2013). While in speaking skills, the students should also complete five activities of learning, namely apprehending,

synthesizing, analyzing, and evaluating (Castillo, 2015). In reading skills, the students completed five learning activities, namely reading, generating, comprehending, discussing, and evaluating (Merkuri and Boboli, 2012). In writing skills, the activities are pre-writing, composing, feedbacking, revising, and evaluating. The venues required indoor and outdoor. Besides, learning outcomes consisted of cognitive, affective, and psychomotor.

6. CONCLUSION

The ESP learning model for Biology students focuses on input, process, and output. The input stage consists of goals and skills. In the process, there are learning activities and places. Finally, in the output, there are learning outcomes. The goal of English for Biology instruction is to make the students understand and practice English skills in the form of factual information. The skills were listening, speaking, reading, and writing. Every skill consists of five activities. There are five activities in Listening skills, namely hearing, understanding, remembering, responding, and evaluating. Speaking consists of apprehending, synthesizing, analyzing, and evaluating while reading skill focuses on generating, comprehending, discussing, and evaluating. In writing skills, the activities are pre-writing, composing, feedbacking, revising, and evaluating. There are two venues for the design. They are indoor and outdoor. In learning outcomes, the instructional model consists of cognitive, affective, and psychomotor.

The English learning model for teaching ESP is expected to be a very useful learning model for students in improving English learning outcomes because this model includes all English language skills that assist students in achieving maximum learning outcomes in the cognitive, affective, and psychomotor domains. Besides, the design of authentic materials and the integration of technology in the instructional model allows teachers to teach effectively in the learning process.

REFERENCES

Alias, Norlidah, Siti Hajar Abd Razak, Ghada elHadad, Nurul Rabihah Mat Noh Kokila Kunjambu, and Parimaladevi Muniandy. 2013. "A Content Analysis in the Studies of YouTube in Selected Journals." *Procedia - Social and Behavioral Sciences* 103: 10–18. https://doi.org/10.1016/j.sbspro.2013.10.301.

Dehghayedi, Mehdi, and Mohammad Sadegh Bagheri. 2018. "EFL Teachers' Learning and Teaching Beliefs : Does Critical Thinking Make a Difference ?" *International Journal of Instruction* 11 (4): 223–40. https://doi.org/10.1097/00004583-199901000-00017.

DeWitt, Dorothy, Norlidah Alias, Saedah Siraj, Mohd Yusaini Yaakub, Juhara Ayob, and Rosman Ishak. 2013. "The Potential of Youtube for Teaching and Learning in the Performing Arts." *Procedia - Social and Behavioral Sciences* 103 (November): 1118–26. https://doi.org/10.1016/j.sbspro.2013.10.439.

Hanafiah, Waode, Muhammad Aswad, Harlinah Sahib, Abdul Hakim Yassi, and Movahede Sadat Mousavi. 2022. "The Impact of CALL on Vocabulary Learning, Speaking Skill, and Foreign Language Speaking Anxiety: The Case Study of Indonesian EFL Learners." *Education Research International* 2022 (January): e5500077. https://doi.org/10.1155/2022/5500077.

Irawan, Ade Gorbi, Ni Padmadewi, and Luh Putu Artini. 2018. "Instructional Materials Development through 4D Model" 00086: 1–4.

Mangila, Benjamin B. 2018. "Are IMs Culturally Relevan T ?" A Critical Analysis of the Instructional Materials Used in Mother Tongue-Based Multilingual Education Program" 6 (2): 53–60.

Merkuri, Zamira, and Aleksander Boboli. 2012. "Teaching Reading Strategies to Students Who Study Foreign Languages." *International Journal of Linguistics* 4 (2): 323–33. https://doi.org/10.5296/ijl.v4i2.1410.

Sewang, Anwar, and Muhammad Aswad. 2021. "The Readiness of Learning Processes during the New Normal Era of the Covid-19 Pandemic." *Indonesian Research Journal in Education |IRJE|* 5 (1): 279–92. https://doi.org/10.22437/irje.v5i1.12822.

Wallace, Igori, A Igori Wallace, and Egbodo Benson. 2016. "Effects of Instructional Materials on the Teaching and Learning of Social Studies In ...," no. July.

Zhao P. (2017). Chinese university students' negotiation of epistemic voices upon transitioning into an English-mediated Linguistics module: *The ASIAN EFL Journal.* 13(1), 7-33.

113