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English for Geotourism Speaking Achievement of the Youth Guides at Khorat Geopark Area in Nakhon Ratchasima via Language Instruction Innovation

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ABSTRACT

This study aims to compare the youth guides' speaking scores before and after learning through English for Geotourism Instruction Innovation at Khorat Geopark Area in Nakhon Ratchasima, investigate the differences among their tasks' mean scores and their speaking components. The sample group consists of 109 youth guides who are Grade 11 English-major students from, Mueang Nakhon Ratchasima, Sung Noen and Chaloem Phrakiat Districts. The instruments include lesson plans for English for Geotourism Youth Guides, Students Manual, English Instruction Innovation for Geotourism Communication at Khorat Geopark Area Nakhon Ratchasima, and Pre-post speaking tests for English for Geotourism Youth Guides. Paired-samples t-test, One-Way ANOVA, descriptive statistics including minimum, maximum, means and standard deviations are used in data analysis. Results showed that the youth guides had a significant difference between pre-and post-test scores at.00 level in English for Geotourism. They gained significantly higher post-test scores than that of the pre-test scores. A significant difference indicates that learning through English for Geotourism Instruction resulted in higher post-test tasks scores. The significant differences are also found in pre- and post-task scores and the speaking components' scores at.00 level. These findings confirm that this language innovation instruction is an effective open learning resource that can facilitate self-regulated learning and languages used in English for Geotourism. The findings can be applied to construct language innovation instruction to exclusively develop speaking skill in other English for specific purposes field.

INTRODUCTION

Geotourism visits attractions concerning ecology, geology and culture in the area of geoparks. This type of tourism generates the income for the community in the form of cultural performances, community products and trips. All of these tourism activities preserve local culture and tradition (Provincial Office of Nakhon Ratchasima Rajabhat. 2018). Khorat Geopark is a world renowned Geotourism destination. It is to become a Global Geopark and will be recognized as a UNESCO Triple Crown-1 of the 3 sites in the world along with South Korea and China.

Khorat Geopark is significant as a Paleontopolis with diverse Geotourism routes that cover all aspects of tourism that relate to both the national and provincial development plans. The National Strategic Development Plan for 20 years (2017-2036) on Strategy 2 aims to create competitiveness and support research and innovation. The plan also plans to solve both social problems and strengthen the communities which are similar to the Nakhon Ratchasima Development Plan in 4 years (2018-2021). The plan hopes to empower the province's economic competitiveness. The goal of the latter plan is to strengthen government sectors to have high capacity, efficiency and effectiveness in management.

The national and provincial plans both support the tourism industry as it is a major source of income at both the national and provincial levels. The tourism industry is thus significant to the Thai Economy. The recent statistics show that this industry solely contributed to the Thai total Gross Domestic Product (GDP) from the year 2017 to 2019 was 18.79, 18.70 and 18.31 percent respectively (Office of the National Economic and Development Council, 2021). This results in the approximate number of tourists travelling to Thailand at 3,810,155 people. Due to its significance to the national economy, the Thai government strongly promotes Geotourism at Khorat, in Nakhon Ratchasima, Thailand. It especially recognizes the importance of developing the English speaking ability of key personnel, such as tour guides who that are required to communicate effectively with diverse range of foreign tourists.

Tour guides are required to be proficient in the English language to escort all the tourists visiting Khorat Geopark

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areas. It is urgent to develop the English for Geotourism of these key personnel. The youth guides are purposively selected in this study for their potential in both giving a guided tour and preserving their community's culture and tradition. They act as ambassadors for their community. English Instruction Innovation for Geotourism Communication at Khorat Geopark Area Nakhon Ratchasima is constructed and employed to exclusively train this target group to practically and effectively use the English language in this Geotourism context. At the same time, they will be facilitated and equipped for self-study and managing their own study, with the flexibility to do it anytime and anyplace. They will learn beyond the classroom walls and acquire knowledge from both their instructors and authentic online resources.

This research therefore aims to compare the youth guides' speaking scores, before and after learning through English for Geotourism Instruction Innovation at Khorat Geopark Area in Nakhon Ratchasima, investigate the differences among their tasks' mean scores, and explore the differences among their speaking components' scores. The ultimate goal of this study is to prepare these youth guides for Geotourism and develop English for Geotourism in this area. Following are research questions.

1. Are there any significant differences between the youth guides' speaking scores before and after learning through English for Geotourism Instruction Innovation at Khorat Geopark Area in Nakhon Ratchasima?
2. Are there any significant differences among their tasks' mean scores?
3. Are there any significant differences among their speaking components' scores?

LITERATURE REVIEW

Significance of Geotourism at Khorat Geopark Area in Nakhon Ratchasima

Khorat Geopark is located in the north-east of Thailand with a total area of 3,167.38 square kilometers, covering 5 districts in Nakhon Ratchasima: Sikhio, Sung Noen, Kham Thale So, Mueang Nakhon Ratchasima and Chaloem Phra Kiat. Khorat Geopark has 25 geosites with 10 natural and cultural sites. A geological feature is the sandstone Cuesta in the south-west, the rolling plains in the north, central and south and plain in north-east with Lam Takhong as the major river that is a confluent of the Mun river in Chaloem Phra Kiat District. It is the location of a pre-historic community and contains the largest variety of genera of ancient elephant fossils in the world (Khorat Geopark Office 2020).

It is not only famous for unique Cuesta, but also distinctive genera of both ancient elephants and dinosaur fossils. The most diverse genera of Iguanodon dinosaurs in ASEAN is found here and ancient elephants fossils of 10 genera from a total of 55 genera in the world. For these reasons, Khorat Geopark is given the name as Khorat: World Paleontopolis/Fossils City. New world genus and species of ape, mammal and reptile fossils were found in this area. Khorat Geopark is becoming a Global Geopark and will be recognized as a UNESCO Triple Crown; 1 of only 3 sites in the World following South Korea and China.

Due to the global significance of Khorat Geopark as the World Paleontopolis/Fossils City, Cuesta Land with diverse in Geoutourism routes, the area covers all aspects of tourism and relates to both the national and provincial development plans. The National Strategic Development Plan for 20 years (2017-2036) on Strategy 2 focuses on creating competitiveness and supporting research and innovation. The goal of the plan is to solve both social problems and strengthen the community where it relates to The Nakhon Ratchasima Development Plan in 4 years (2018-2021), the plan to empower the province's economic competitiveness. The goal of the latter plan is to strengthen government sectors to have high capacity, efficiency and effectiveness in management. The national and provincial plans both support the tourism industry from its significance. The data shows the Thai total Gross Domestic Product (GDP) from the year 2017 to 2019 at 18.79, 18.70 and 18.31percent respectively (Office of the National Economic and Development Council, 2021). The results are supported with the total of 3,810,155 tourists travelling to Thailand.

Geotourism at Khorat Geopark features significant and distinctive geographical characteristics, resulting in two main routes with additional selective routes through the park. Geotourism is defined as a type of tourism that can either sustain or enhance the distinctive geographical character of a place. This includes its environment, geology, heritage, aesthetics, culture and well-being of its residents (UNESCO, 2011; National Geographic, 2011; Geoworldtravel, 2011 cited in Khorat Geopark Office, 2020). Geotourism is a significant economic tool to develop the economy and community, alleviate ways of living and increase income. Consequently, Geotourism has a positive impact on the national economy and society as a whole. It helps to teach local people about earth science as it encourages their awareness for environmental conservation.

Geotourism can also create a large number of job opportunities for locals and these examples are cultural performance shows, increase in the volume of local products for sale, lectures and services. It assists in cultural and traditional preservation (Provincial Office of Nakhon Ratchasima. 2018). From this definition, Geotourism involves a visit to attractions about ecology, geology and culture in the area of geoparks. Khorat Geopark is one of prominent areas that provides potential Geotourism with the goal to develop the economy at both the local and national levels. Khorat Geopark encompasses distinctive geological features with, culture, history and tradition. There are two main routes representing distinctive nature and history at Khorat Geopark: Four-Tusker Route and Cuesta Route. Additional routes include the Khorat Khmer Civilization, the Khong Dee Khee Kta Wisdom, the Sri Janasa Dvaravati, the Tai-Yaun and Khu Rak-Bu Kha Escarpment, the Khoa Yai Thiang Cuesta and the Pha Sung Cuesta Route.

Learning English for Specific Purposes through Language Innovation

English for specific purposes and social constructivism

English for Specific Purposes (ESP) is used in a particular context. ESP differs in the context of use (Douglas, 2000). English for Geotourism has specific characteristics in types of genre, technical terms and structures. ESP ability is the result of an interaction between specific background knowledge and language knowledge combined with the strategic competence of the mediator to relate both knowledge. This ESP ability is measured by simulated tests reflecting authentic scenarios (Douglas, 2000 p. 40). ESP has precise characteristics with specific background knowledge and language knowledge needed to formulate the language through strategic competence. This competence is cognitive processes that are made of metacognitive and communication strategies.

The notion of ESP corresponds with social constructivism on the concept of context of target language use that has to be adopted by the learners through language use and specific background knowledge. In Social constructivism, English language learning occurs through the interaction of language in a social context (Lantolf & Appel, 1994). Without action, learning would not be achieved. This notion corresponds with ESP. Collaboration is a key element in social constructivism with the focus on co-creation of the knowledge using the language within the environment. Learners would internalize the language and its structure. Vygotsky (1978) stated that language learning occurs through Inter-communication, between persons and Intra-communication by reflecting on the language knowledge through communication (Schcolnik, Kol & Abarbanel, 2006).

Another significant notion in Social constructivism is Zone of Proximal Development (ZPD). Vygotsky (1978) indicated that learning through interaction today affects tomorrow's ability. ZDP is in line with scaffolding in facilitating learning through resources: human, media, especially electronic media and innovation. Barhoumi & Hamza Kabli (2013) claimed that E-learning with social constructivism could facilitate English language learning. The results showed a significant difference between pre- and pos-test at the.05 level. Learners gained significantly higher scores than that of the pre-test. This result corresponds with Churcher et al. (2014) that using online social media with social constructivism promoted in-depth learning and facilitated learners' self-responsibility.

English language learning under social constructivism places emphasis on a learners' interaction with learning. This notion is integrated with the use of technology to create innovative means of language learning. Recent results show that this innovation facilitates and effectively promotes language learning. Learning through social constructivism with technology allowing each individual learner to control, plan and evaluate their learning through in-depth and meaningful interaction. Both the individual and group learning environments support learners to set, and achieve their own goals.

Gunduz and Hursen (2015) stated that learning is a social activity and new knowledge is gained from previous experience. Self-regulated learning is a fundamental and significant element of social constructivism. Learners acquire knowledge by themselves and instructors act as facilitators to provide learners with a meaningful learning environment. Experience eventually leads to learning from online open resources.

Collaborative group work and social interaction is prominent practice in social constructivism. Learners develop language through communication. Wang (2014) employed a Wiki as the online learning resource with 42 undergraduate students. Results showed that students had positive opinions towards this learning environment (*M*= 4.09*, S.D.*=.67). They stated that they can exchange knowledge, communicate with their peers and improve their English at the end. The activity motivates them to have meaningful communication with authentic tasks.

Wang's (2014) results correspond with the recent studies of Phaiboonnugulkij et al. (2019) from the positive impact social constructivism and English language innovation has facilitating English language learning. Phaiboonnugulkij et al. (2019) compare the students' scores before and after learning through English for Domestic blended learning lessons with 30 third year English-major undergraduate students. The blended learning lessons underpinned by ESP learning and social constructivist theories in both online and face-to-face modalities. Scaffolding was integrated into the learning activity according to the students' proficiency level. Students self-studied the lessons to understand the concept and contents of each unit. They then collaborated on group work both online and face-to-face. They created a group project through a simulated role play of a tour guide giving a guided tour to foreign tourists, and submitted in a video clip. They were facilitated by suggestions to search for more information from online lessons.

Results from the comparison between students' pre- and post-test scores using Paired sample *t*-test through blended learning lessons showed a significant difference, t (29) =-15.95, p>.05. The post-test scores (*M*= 40.93, *S.D.*= 8.98) were significantly higher than that of the pre-test scores (*M*= 27, *S.D.*= 8.72) showing students' improvement after learning through these blended learning lessons. They had highly positive opinions towards the lessons (*M*= 4.7, *S.D.*=.60). The highest means were in self-responsibility in learning (*M*= 4.4, *S.D.*=.57). The improvement of students' speaking skill was evident in this study. It may be due to the nature of this type of learning environment that fosters the process of learning and provides students with active roles and responsibility for learning at their own pace and time. Phaiboonugulkij & Prapphal (2012) reconfirmed that students had better speaking performances after learning through technology integrated lessons. These results were varied from their proficiency level. Their speaking components differed based on the specific nature of ESP and test task characteristic in English for Domestic tourism field.

The results from online instruction with social constructivism show that English communication skills are developed through scaffolding and feedback that eventually motivates learners to learn and communicate using English via online channel. They had chances to exchange knowledge, collabo-

rate in group work and co-construct their knowledge that led to language learning and acquisition.

English for specific purposes and language innovation

A number of studies indicate positive effects of learning ESP through language innovation in blended learning environments on English skill (Simonova, 2019; Barrett & Liu, 2019, Phaiboonnugulkij et al., 2019; Phiaboonnugulkij, 2018, 2016, Yang and Hsieh, 2015, Wang, 2014).

Simonova (2019) claims that blended learning is effective in supporting English language skill. The effect varies on each individual student's English language proficiency. This research was conducted with 173 undergraduate students and measured their improvement in grammar when using this learning environment. This result agrees with Barrett & Liu (2019) that blended learning in Academic English for oral presentation purposes helped students gain significantly higher scores. However, their summary and linking idea in the oral presentation were still problematic.

Students also had positive opinions towards blended learning through social constructivism. Their positive opinions towards blended learning with social constructivism are supported with the previous studies (Phaiboonnugulkij et al., 2019; 2015). The students believed that blended learning promoted and enabled them to control and be responsible for their own learning. They had more responsibility and chances to use English which helped them develop their English skill.

As mentioned above, social constructivism places an emphasis on facilitating learners to co-construct their own knowledge and actively learn to acquire the language as seen from the work of Yang and Hsieh (2015). In this study, blended learning underpinned by social constructivism was employed with 50 undergraduate students, majoring in English. The focus was on using a peer questioning technique through a 12-week course of lessons using the TOEIC reading exam to evaluate their progress.

Results showed that high proficiency students learning through a peer questioning technique did not have any significant difference in mid-term scores (t=.06,p≥.05). However, a significant difference was found in the low proficiency group (t= -2.6,p≥.05), they had significantly higher scores than the pre-test scores. After 12 weeks, both groups had higher and significantly different scores (t= -3.82,p≥.05). The size of the effect was at 0.48 for the high proficiency group and a larger effect was found in the low proficiency group at 0.82, (t= -4.93,p≥.00. Peer questioning technique was more effective with the low group than the high proficiency group. The reasons for this may be attributable to the low proficiency group having had to acquire and search more information to answer questions, which helped them have more practice in using English.

Godwin-Jones (2020) states that blended learning in language puts emphasis on connecting the classroom to the real world through language and community. A number of researchers claim that self-learning effectively promotes language learning. The roles of teachers are as facilitators, supporting learners to use all beneficial resources outside of the classroom. The focus is on being active learners, gaining knowledge through inquiry. In a blended classroom, knowledge occurs anytime and anywhere. Learners must be ready for this type of learning and expect that knowledge is no longer passively received from the teacher.

Activities are the key element that lecturers use apart from the content of the core textbook. They can use activities to promote self-learning from all available online and offline resources. The blended classroom facilitates learners to learn through media, interact with peers to develop the language and social skills through culture, feedback and reflection. Bagheri and Zenouzagh (2021) adds that effective technology-integrated language learning innovation, connects learners through collaborative activities and allows learners to learn through discussing and exchanging their ideas. Learners had more chances to participate in these active actives in blended classroom than in the traditional classroom. Meskill, Anthony and Sadykova (2020) also investigate learning English through blended learning. Results from online questionnaires show that lecturers who had more than 10 years of teaching English experience identified 3 major aspects of blended learning about the foundation in teaching and learning, teaching quality and laws to access online resources. These three aspects should be included in a good quality blended learning.

In summary, success in blended learning corresponds with the theory of social constructivism, they both motivate learners to learn the language and promote their learning through simulated resources. Interaction between the language and learning activities through both face-to-face and online modality is increased and supports learners to use the language in a real-world context, particularly in Geotourism.

METHODOLOGY

Participants

The population in this study was a group of grade 11, high school students studying in the second semester of an academic year 2020. All of the participants were youth guides at, Khorat Geopark Area in Nakhon Ratchasima. The sample group was 109 grade 11, English major students from, Mueang Nakhon Ratchasima, Sung Noen and Chaloem Phra Kiat Districts using a purposive sampling technique, 42 participants were from Suranaree Witthaya School, 32 from Sung Noen School and 35 from Ta Chang Ratchbamrung School. These districts and schools were purposively selected from the criteria that they had used the Khorat Geopark Curriculum and participated in Khorat Global Geopark Program with distinctive Geotourism routes. Students were willing to participate in a variety of training and had passed English Foundation Course from Grade 10.

Instrumentations

There are 5 instrumentations in this study, as follows:

Needs-analysis questionnaire to investigate the target language use for geotourism at khorat geopark area

Needs-analysis questionnaires were constructed to identify the target language used by guides while working for

Geotourism at Khorat Geopark Area. The results from the need analysis questionnaire were used in English for Geotourism Instruction Innovation at Khorat Geopark Area in Nakhon Ratchasima and English for Geotourism youth guides at Khorat Geopark Speaking test.

The questionnaires were validated by the four experts in the field using Item-Objective-Congruence index (IOC) and the values ranged from.75 to 1 for four parts of the questionnaire: Demographic information, Geotourism's content knowledge and Target Language Use (TLU) tasks, speaking components in English for Geotourism, criteria for the youth guide speech assessment and open-ended questions. It was revised following the experts' recommendations and converted into an online version using Google Forms and piloted with 10 samples. Then it was administered by the 59 subject specialist informants who were Geotourism lecturers, tourists and tour guides. They had lived in Geopark area from 1 to 6 years.

Results from the Need analysis questionnaires showed that Geotourism content knowledge and TLU tasks were integrated into 5 units of the lesson plans for English for Geotourism and later into English for Geotourism Instruction Innovation at Khorat Geopark Area in Nakhon Ratchasima.

Lesson plans for english for geotourism at khorat geopark

Lesson plans teaching English for Geotourism at, Khorat Geopark were written to be used in the training and online lessons. Content was obtained from previous literature reviews and the Need analysis questionnaires from the subject specialist informants to ensure the authenticity, validity and practicality of the contents and task in the context of Geotourism. The lesson plans were used in this study as a Teacher's Manual to provide teaching methodology and determine the roles of the teachers in the training course. The lesson plans consisted of 5 units as follows:

Unit 1 English for Geotourism and Geopark attractions in Nakhon Ratchasima
Unit 2 Geopark Attractions in Mueang District Nakhon Ratchasima
Unit 3 Geopark Attractions in Sung Noen District Nakhon Ratchasima
Unit 4 Geopark Attractions in Chaloem Phra Kiat District Nakhon Ratchasima and
Unit 5 Do's and Don'ts at Khorat Geopark Attractions

The teaching methodology in each unit underpins ESP and social constructivism in English language teaching with different tasks based on unit's objectives and contents. Youth guides acquired the knowledge and acted as active learners throughout a series of activities and tasks to co-construct and internalize the knowledge. Lecturers were facilitators who supported and provided guidance and learning resources with their needs using scaffolding technique. A sample technique was the use of guided-questions to give background knowledge for them.

Youth guides would actively use English to communicate in pairs, through didactic learning, in a variety of scenarios and had collaborative group work in a simulated task as a youth guide giving a guided tour at Khorat Geopark in the form of role play and submitted in a video clip via www.khoratgeoparkguide.com, an online platform for lessons in this course. The example was in Unit 1, youth guides would submit final group project presenting Cuesta formation and Fossil land of Khorat Geopark in their video clip. Youth guides were trained in class and required to self-study from an online lesson. Blended learning was thus integrated into this study.

Results from the four experts validated the procedure which showed high content and construct validity with the mean scores of 4.23 (M=4.23, $S.D.$=0.75). The content of Unit 1 plans were revised accordingly. Specifically distinctive features of Khorat Geopark, community products and Geo-residence were added based on experts' suggestions. The lesson plans were translated into English and checked by the native speakers. They were piloted with 15 samples and revised before the main study.

Student's manual for english for geotourism at khorat geopark

Student's Manual for English for Geotourism at Khorat Geopark was used as the course book along with the instruction innovation. The manual consisted an orientation of how to use the online lessons with the same content and tasks as mentioned in the lesson plan. The difference was that the teaching methodology was not included. Results from the four experts validation procedure showed high content and construct validity with the mean scores of 4.23 (M=4.23, $S.D.$=0.75). The manual was revised and translated into English and checked by the native speakers. It was piloted with 15 samples and revised before the main study.

English for geotourism at khorat geopark instruction innovation

English for Geotourism at Khorat Geopark Instruction Innovation is the online lessons with the url: www.khoratgeoparkguide.com. It was constructed as part of this research project funded by the Thailand Research and Innovation (TSRI). The instruction innovation consisted of 5 units with similar content to the lesson plans. Each unit of the instruction innovation consisted of an administrative plan, interactive and automated exercises with an online work submission channel and tutorial clips from the lecturer. Youth guides self-studied the online lessons and the lecturer would facilitate and support them when needed. Ratio of learning in this research was Face-to-Face: Online at 70:30. Youth guides were trained face-to-face during class time, self-studied the online resources at home and assessed on their speaking achievement at the end of the training.

Youth guides logged into the online lessons using username and password. They would look for the button "Lesson" to view all the content with the Language use that contained technical terms and useful phrases in each unit. They can listen to native speaker's pronunciation from the software and study all the lesson from the tutorial clips of the lecturers. Lecturers can keep a record of all the submitted work from the administrative mode in this online platform.

Results from the four experts validation showed high content and construct validity of this instruction innovation with the mean scores of 4.23 (*M*=4.23, *S.D.*=0.75) in 6 aspects: accuracy and up to date content, Geotourism learning activities, text organization, assessment and evaluation, web design and networking. In other words, English for Geotourism at Khorat Geopark Instruction Innovation was a high-quality learning resource.

Results from an individual aspect showed that the highest mean scores were in accuracy and up to date relevance of the content at 4.25 (*M*= 4.25, *S.D.*=0.75), reflecting high content and construct validity. It was followed by assessment and evaluation and networking at 4.23 (*M*= 4.23, *S.D.*=0.75). The web design had a mean of 4.22 (*M*= 4.22, *S.D.*=0.76) and Geotourism learning activities at 4.22 (*M* =4.22, *S.D.*=0.78) respectively. Similar to the previous two instruments, English for Geotourism at Khorat Geopark Instruction Innovation, were piloted with 15 samples and then revised before the main study.

English for geotourism at khorat geopark speaking test and rubric scoring

English for Geotourism at Khorat Geopark Speaking Test was used as a pre-and post-test to assess the achievement of youth guides' English for Geotourism speaking ability at Khorat Geopark area. It was a performance-based test assessed with the rubric scoring. This test was administered online and the youth guides' responses were stored on the website.

The test and rubric scoring underpins ESP ability assessment in tourism context with technology integrated test from the previous literatures of Douglas (2000), Fulcher (2003) and Phaiboonnugulkij and Prapphal (2013, 2012) and results from the needs analysis from the subject specialist informants. The tests were made of 5 tasks with a total possible score of 300 as follows.

Task 1 was introducing oneself to orient students to the test. There was no scoring in this task.

Task 2 was Giving General information about Khorat Geopark. Youth guides were required to give general information about the distinctive features of Khorat Geopark. They should talk about: Cuesta formation, Fossil land and Significance of Khorat Geopark as a UNESCO Global Geopark. They were required to talk about these topics for 2 minutes. They can use the 2 pictures about Cuesta formation and Fossil Land to generate and recall for the information. The total score was 100.

Task 3 was Presenting Khorat Geopark attractions. Youth guides saw a picture of an attraction on their screen. They then gave a guided tour with full details of this attraction. They should talk about: name of the place; location, history, background and related stories with Khorat Geopark; distinguishing features of the place; function of the place, and important things to see; and specific information of the place. They were required to talk about these topics for 3 minutes. The total score was 100.

Task 4 was Presenting Khorat Geopark community products. Youth guides saw a picture of a product on their screen. They presented this product with full details. They were expected to talk about: the name of the product; the products location; background and related stories with Khorat Geopark; materials/ingredients; and highlight of this product. They were required to talk about these topics for 1 minute. The total score was 50.

Task 5 was Giving suggestions about do's and don'ts at Khorat Geopark attractions. Youth guides saw a picture on their screen. They were expected to give polite suggestions to the tourists based on this picture. You should talk about: what the tourists should or should not do and reasons for this suggestion. They were required to talk about these topics for 1 minute. The total score was 50. They would give responses after they saw the prompts on the screen. Their responses were video recorded and uploaded on the website to be graded using the rubric scoring.

The rubric scoring

A rubric was used to assess the English for Geotourism at Khorat Geopark speaking ability. It was made up of six domains of speaking components: vocabulary, grammar, pronunciation, fluency, content and gesture.

Vocabulary is the ability to use both generic and Geotourism-related technical terms to respond to the test tasks. It is measured by the accuracy and range of the vocabulary employed in the responses. Grammar is the ability to use standard English grammatical conventions to produce comprehensible responses. It is measured by the accuracy, range, complexity and appropriateness of the structures in the speech produced.

Pronunciation is the ability to use the appropriate sounds, stress and intonation to convey the intended meaning of responses. It is measured by accuracy in the use of sound, stress and intonation in the responses. Fluency is the ability to use the required tempo and pauses in spoken responses. It is assessed by the appropriate use of both the tempo and pauses with natural speed in the responses.

Content is the ability to present Geotourism-related content. It is measured by the accuracy and completion of the information given by the test takers to respond to the test tasks. Gesture is the ability to use eye contact and body movement to respond to the test tasks. It is assessed by appropriate use of these gestures to communicate with the intended audiences.

The sum scores from 2 raters represent the participants speaking ability to communicate in the context of Geotourism. Vocabulary, grammar, pronunciation and fluency contained 15 marks whereas Content contained 30 marks and gesture 10 marks totaling 100 marks. A full 100 marks were for Task 2 and 3 whereas half of that score was applied with the total of 50 for Tasks 4 and 5.

To ensure both intra- and inter-reliability and consistency of the scores, rater training was conducted before the main study. 2 raters were used to assess youth guides' speaking ability and the third rater would initiate when there was a large discrepancy of scoring. The 2 raters were selected based on their experience in teaching English for tourism with a minimum of 8 years and one had Master of Arts degree and another one holding a doctoral degree in English.

Results from the experts' validation showed high content and construct ability of the speaking test and the rubric scoring with the IOC value ranged from 0.75-1.00. Both the speaking test and the rubric scoring was piloted with five samples and inter-rater reliability was measured using the Pearson's Correlation Coefficient. The value was at.00, $r(5) = .93$, $p = .00$, indicating highest reliability of the scoring. Similar to previous instruments, they were revised and adjusted before being used in the main study.

Criteria for the experts' selection was collected from their expertise in working for Khorat Geopark and participating in the project of UNESCO assessment for Khorat Geopark as a Global Geopark. This included the experience in teaching English for tourism and Thai Culture and their expertise in language innovation. All of the experts hold a doctoral degree with assistant professor title. Two of them were the key persons in Global Geopark Project and had been working as the Director of Petrified Wood Museum, Nakhon Ratchasima Rajabhat University. Two others have been teaching in English for Tourism and Thai culture and language innovation for more than 20 years.

Data Collection

The data were collected as follows.

All the youth guides were firstly administered with the online pre-speaking test in English for Geotourism at Khorat Geopark. Their responses were video recorded and uploaded on the online platform. Then they were trained on how to use the instruction innovation with the Student's Manual.

They were trained for a duration of 3 weeks totaling 20 hours in a blended learning environment both in class and in their free time. They were trained face-to-face, through collaborative group work, and later self-study with the online lessons in class to do the interactive exercises. They would self-study the lessons from the instruction innovation and online resources.

After they had completed all the training, they were administered with the post-speaking test in English for Geotourism at Khorat Geopark. As with the pre-test, the post-test responses were recorded and uploaded to be graded by the two raters.

Data Analysis

The data are analyzed as follows.

To compare the youth guides' speaking scores before and after learning through English for Geotourism Instruction Innovation at Khorat Geopark Area in Nakhon Ratchasima, Paired samples *t*-test and descriptive statistics were employed to explore the differences.

To investigate the differences among their tasks' mean scores and differences among speaking components, One-Way ANOA with Scheffe post-hoc test were used to find the differences. Content analysis from speech samples was also used to show insightful details of the differences in tasks and speaking components in the context of youth guides giving a guided tour at Khorat Geopark.

RESULTS AND DISCUSSIONS

Results of the study are presented along with the research questions as follows.

Research Question 1: Are there any Significant Differences between the Youth Guides' Speaking Scores Before and After Learning Through English for Geotourism Instruction Innovation at Khorat Geopark Area in Nakhon Ratchasima?

Results from the dependent samples *t*-test indicate that there is a significant difference between the youth guides' pre- and post-test mean scores at.00 level, $t(108) = -33.98$, $p = .00$. This illustrates that their speaking achievements were different before and after learning through this instruction innovation. To be precise, their post-test speaking scores ($M = 178.82$, $S.D. = 40.52$) are significantly higher than that of the pre-test scores ($M = 48$, $S.D. = 29.37$) meaning that their speaking was improved after learning. Mean differences among tasks' score are presented in Table 2.

Research Question 2: Are There any Significant Differences among their Pre- and Post-tasks' Mean Scores?

Table 2 shows that there is a significant difference between pre-and post-task mean scores at.00 level. The difference is evident in task 2, $t(108) = -30.85$, $p = .00$ showing that youth guides have the most different speaking achievement in giving general information about Khorat Geopark. Their post-task mean scores are 58.28 ($M = 58.28$, $S.D.13.43$) whereas that of the pre-task mean scores are 6.79 ($M = 6.79$, $S.D. = 11.33$). The least difference is found in Task 5, $t(108) = -21.75$, $p = .00$ meaning that youth guides have the least improvement in speaking achievement when giving suggestions about Do's and Don'ts at Khorat Geopark. They have post-task means at 60.44 ($M = 60.44$, S.D.13.94) and pre-task means at 25.22 ($M = 25.22$, $S.D.15.96$).

Table 1. Differences between pre- and post-test mean scores of speaking achievement

	Paired Differences					t	df	*p*-value
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre – post test scores	-130.82	40.19	3.84	-138.45	-123.19	-33.98	108	.00*

Table 2. Differences between pre- and post-task mean scores

Pre-post task mean scores	Paired Differences					t	df	*p*-value
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Task 2	-51.48	17.42	1.66	-54.79	-48.17	-30.85	108	.00*
Task 3	-41.32	14.80	1.41	-44.13	-38.51	-29.13	108	.00*
Task 4	-40.80	15.90	1.52	-43.82	-37.78	-26.78	108	.00*
Task 5	-35.22	16.90	1.61	-38.42	-32.01	-21.75	108	.00*

It is followed by task 3, t (108)=-29.813, p=.00 and task 4, t (108)=-26.78, p=.00 respectively. This demonstrates that youth guides also have different speaking achievement scores in giving information about Khorat Geopark attractions and community products. They have pre-Task 3 mean scores at 19.09 (M =19.09, $S.D.$=14.04) and that of post-task mean scores at 60.41(M =60.41, $S.D.$14.24). The youth guides also have pre-Task 4 mean scores at 18.99 (M =18.99, $S.D.$13.64) and that of post-task mean scores at 59.79 (M =59.79,$S.D.$=14.05). The differences among speaking components' mean scores are illustrated in Table 3.

Table 3. The differences among speaking components' mean scores

	Sum of Squares	df	Mean Square	F	*p*-value
Between Groups	1471.51	5	294.30	12.86	.00
Within Groups	59691.65	2610	22.87		
Total	61163.16	2615			

DISCUSSION

The results show a significant difference between the pre- and post-speaking test scores and pre-and post-task means scores and correspond with Phaiboonnugulkij et al. (2019) Simonova (2019), Barrett & Liu (2019) and Bagheri and Zenouzagh (2021) proving that social constructivism with the use of technology-integrated lessons, significantly promoted English learning achievement. Phaiboonnugulkij et al. (2019) found that 30 third year English major students taking the English for Domestic Tourism course, using blended learning and Social Constructivism with the online lessons had significantly higher post-speaking test scores (M =40.93, $S.D.$=8.98) than that of the pre-test (M =27, $S.D.$=8.72) scores with the significant level at.00, (t (29) =-15.95, p>.05). This result agrees with Simonova (2019) who found that blended learning effectively supported learners' English skill. He indicated that the level of development depended on English proficiency level.

Results from Yang and Hsieh (2015)'s study with 30 English major students reconfirmed Simonova (2019)'s study that blended learning promoted English skill with the difference at a development level. Barrett & Liu (2019)'s results supported previous studies that blended learning supported students' academic English in oral presentation. They gained significantly higher post-test scores than that of the pre-test scores. However, they still needed support when summarizing and linking their ideas in the oral presentation.

The results of English for Geotourism speaking indicate that the improvement of the youth guides may be due to the learning environment of social constructivism that strongly promotes them to control and be responsible for their own learning. They had more chances to practice English skills through online and interactive exercises with this language instruction innovation at their own pace and in free time. They can review the lessons as many times as they wanted. Bagheri and Zenouzagh (2021) states that this online environment effectively connects learners through collaborative activities. They can exchange and discuss their ideas within this learning environment. To be precise, youth guides learned and develop their speaking through series of collaborative group work in this study. Collaborative group work simulated a tour guide giving a guided tour at Khorat Geopark, providing the opportunity for youth guides to have intercommunication and later intracommunication to internalize the knowledge with English communication. They learned through dialectic and social communication in all the tasks. Self-study and responsibility is the key element that promote English learning, the concepts are supported by a recent study of Godwin-Jones (2020) which reconfirms that self-study is an effective means of knowledge improvement.

Their speaking improvement was evident in Task 2 when giving general information about Khorat Geopark that they had increased their scores which may be because the youth guides had the opportunity to acquire and search for content knowledge through authentic target language use tasks. They had chances to review their lessons and know how to formulate the language necessary to explain about the key features of Khorat Geopark. This task required very specific knowledge and language structures to formulate the script to present the key information. Learning through social constructivism and blended environments in line with authentic language use tasks, enable them to progress in their speaking performances.

Youth guides were responsible for their own learning through series of tasks, both via face-to-face and via online learning to study content, including technical terms and useful phrases in each unit. They would further attempt interactive and automated exercises and pre-study the lesson from the tutorial video clips which helped scaffold them. They could also review all the lessons from instruction innovation with the support from lecturers. The lecturers managed all the learning resources and tasks to meet with

their needs through careful selection and design of learning tasks (Meskill, Anthony and Sadykova, 2020). Youth guides acquired and searched for additional Geotourism content and knowledge from the online resources available by Geotourism instruction innovation. They internalized the knowledge and practiced English communication skills through simulated, collaborative group work, role playing a tour guide working at Khorat Geopark. This finding is supported by Gunduz and Hursen (2015) that self-regulated learning is a key factor in promoting learning. Learners acquired knowledge and gained experience by themselves with support from their instructors. This experience connects language learning with the community through Explorative English which supports the youth guides to develop their English skill as claims by Godwin-Jones (2020). The differences among their speaking components are presented in the following section.

Research Question 3: Are There any Significant Differences among their Speaking Components?

Table 3 shows that there is a statistically significant difference among speaking components as shown by one-way ANOVA, $F(5,2610)=12.86$, $p=.00$. This strongly indicates, youth guides have different speaking component scores. The difference of the means' among the components are calculated by Scheffé post-hoc test and the results are displayed in Table 4.

Table 4 shows the differences among speaking components' mean scores. Results from Scheffé post-hoc test show that youth guides have significantly different mean scores between vocabulary and pronunciation, vocabulary and fluency, vocabulary and content, and vocabulary and gesture at the.00 level. The mean differences are evident between vocabulary and content at 1.95. It is followed by gesture, fluency and pronunciation respectively (1.81, 1.30 and 1.09).

Table 4. Scheffé post-hoc test of the differences among speaking components' mean scores

(I) Speaking components	(J) Speaking components	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Vocabulary	Grammar	.16	.32	.99	-.91	1.23
	Pronunciation	1.09*	.32	.04	.01	2.17
	Fluency	1.30*	.32	.00	.22	2.38
	Content	1.95*	.32	.00	.88	3.03
	Gesture	1.81*	.32	.00	.73	2.89
Grammar	Vocabulary	-.16	.32	.99	-1.23	.91
	Pronunciation	.93	.32	.13	-.14	2.01
	Fluency	1.14*	.32	.02	.06	2.22
	Content	1.79*	.32	.00	.71	2.87
	Gesture	1.65*	.32	.00	.57	2.73
Pronunciation	Vocabulary	-1.09*	.32	.04	-2.17	-.01
	Grammar	-.93	.32	.13	-2.01	.14
	Fluency	.21	.32	.99	-.86	1.28
	Content	.86	.32	.21	-.21	1.94
	Gesture	.72	.32	.42	-.35	1.79
Fluency	Vocabulary	-1.30*	.32	.00	-2.38	-.22
	Grammar	-1.14*	.32	.02	-2.22	-.06
	Pronunciation	-.21	.32	.99	-1.28	.86
	Content	.65	.32	.54	-.42	1.72
	Gesture	.50	.32	.78	-.56	1.58
Content	Vocabulary	-1.95*	.32	.00	-3.03	-.88
	Grammar	-1.79*	.32	.00	-2.87	-.71
	Pronunciation	-.86	.32	.21	-1.94	.21
	Fluency	-.65	.32	.54	-1.72	.42
	Gesture	-.14	.32	.99	-1.22	.93
Gesture	Vocabulary	-1.81*	.32	.00	-2.89	-.73
	Grammar	-1.65*	.32	.00	-2.73	-.57
	Pronunciation	-.72	.32	.42	-1.79	.35
	Fluency	-.50	.32	.78	-1.58	.56
	Content	.14	.32	.99	-.93	1.22

The average scores of vocabulary are at 19.11(*M*=19.11, *SD*.=4.02) and higher than that of content (*M*=17.15, *SD*.=5.12), pronunciation (*M*=18.01, *SD*=4.82), fluency(*M*=17.80, *SD*.=4.36), and gesture (*M*=17.29, *SD*.=5.98).

Youth guides also have a statistically significant different in mean scores between grammar and fluency, (1.14, *p*=.02), grammar and content (1.79, *p*=.00), and grammar and gesture (1.65, *p*=.00) respectively. The average scores of grammar are at 18.95 (*M*=18.95, *SD*.=4.08) and higher than that of content (*M*=17.15, *SD*.=5.12) and gesture (*M*=17.29, *SD*.=5.98).

DISCUSSION

The results on differences among speaking components agrees with the previous study of Phaiboonnugulkij and Prapphal (2012) that students had significantly different speaking component scores, and this depended on their proficiency level and specific requirements of the test tasks, and specific language use in Geotourism context.

In the present study, the youth guides had different post-test scores of vocabulary, fluency, pronunciation and content. All three components were related. This is evident when the youth guides mispronounced the technical terms and used wrong grammatical structures, particularly when talking about fossils and Cuestas the fluency of their speech was frequently obstructed. They also had to refer to the content to respond to the test task in order to present specific information and stories in Geotourism. These differences were evident in Task2 and Task5 in giving information about Khorat Geopark and giving polite suggestions about Do's and Don'ts at Khorat Geopark that required a large amount of specific vocabulary, various types of grammatical structure and specific content knowledge related to history of both the Cuesta and fossils found at Khorat Geopark. This includes the requirement of cultural knowledge and geological knowledge to advise the tourists of what they should do and should not do in this area.

Youth guides also had different scores in vocabulary and gesture, and grammar and gesture. This may due to their need to recall the vocabulary and grammar to formulate the language necessary to present Geotourism information. The majority of them would look up, but did not make any eye contact with the interviewer. They neither used hands nor presented any facial expressions to convey the meaning of the content. These differences were evident in tasks 3 and 4 in presenting Khorat Geopark attractions and community products which allowed participants to look at the pictures to recall specific vocabulary and grammar to present both the attraction and products that had stories related to Khorat Geopark. The youth guides' sample speeches in the 4 test tasks are presented in the following section.

Content Analysis of Youth Guides' Speech Samples

This part presents the content analysis from the 20 youth guides' speech samples. Their identification is coded by letter A, representing the High proficiency group, and letter B, representing the Low proficiency group. The number indicates the number of the speaker. The brackets represent the information added by the researcher for explicit understanding of the speech. The '_' represents short pauses and the word 'pause' means a long pause.

The analyses are presented based on the six speaking components from speaking's constructs of English for Geotourism youth guides at Khorat Geopark. These six domains of speaking components are the use of vocabulary, grammar, pronunciation, fluency, content and gesture to respond to different speaking test tasks.

The analyses show that youth guides with high scores used a variety of vocabulary to give general information about Khorat Geopark, but they mispronounced some of the technical terms, for example the words "genera" and "petrified". Their speech was sometimes not connected since there were a few pauses and ellipsis "uh" and "ah". Many of them did not appropriately use eye contact to respond to the test task, which resulted in low scores in gesture. Following are some examples.

A3 Task 2: Presenting general information about Khorat Geopark

> Questa in Korat Geopark was originated from sediment by the river from one hundred fifty million years old. uh Highlight_ highlight of Korat Geopark is that it is of_of the one the most diver[se] ancient elephant. We found ten general[s] out of fifty five were genera. Korat Geopark is significant because it has the most diverse it has the most diver[se] ancient elephant fossil in the world new genius and specie[s] were uh_sorry new genius and specie[s] dinosaur were discovered[ed] new genius and specie[s]. There_uh are were found in Muang Nakhon Ratchasima and this and Chaloem Phrakiat district. There are Siam raptor Suwati and Sirhinthorna they are there are three type[s] of perify[petrified] wood in Nakhon Ratchasima. they are palm wood, gemstone, virios[various] ages perify[petrified] wood.

Differences in the use of grammar and fluency, grammar and content, grammar and gesture were evident in Task 3 when presenting Khorat Geopark attractions. The youth guides used mostly accurate grammatical structure, but there were lots of pauses and ellipsis "uh" and "ah" which affected the fluency of their speech. The content was not as detailed as in Task 2. Following are some examples. Similar to the previous task, youth guides looked up to assist recall for their memory and did not use appropriate eye contact. Following are some examples.

A7 Task3: Presenting Khorat Geopark attractions

> Now we are standing at_ah_petrified_mew_wood museum. Yes. Let me give you some information about petrified wood museum. It is located at Nakhon Ratchasima. It was [pause] constructed in two thousand four. It was constructed an ac-hi-bition[exhibition] display of [pause] petrifie[d] woods found in this area. It was constructed by the high_ the_pri_the royal highness princess Maha Chakri Sirindhorn and highlight of petrified wood museum that is there are three type[s]. One is gemstone pet-

rified wood. Two is gemstone-Ah-two is petrified palm wood and the last one is petrified wood with valent[various] ages. Yes.

Youth guides also did not report much information regarding community products and that resulted in the third lowest post-test means among all the tasks. Following are some examples.

A5 Task 4**:** Presenting Khorat Geopark community product

Tha Chang grilled chicken. Tha Chang grilled chicken is made from Chaleom Phra Kiat district. This is made in Khorat Geopark area. This is made from chicken, Chinese spices, and paper[pepper]. Its highlight is the taste and the great flavor.

However, Task 5 has the highest means and is therefore the task that youth guides performed the best on out of all the tasks. It is evident that they could present full details with appropriate usage of grammar, pronunciation, fluency and content with good gestures. Following are some examples.

A10 Task 5: Giving suggestions about Do's and Don'ts at Khorat Geopark attractions

The first one is you should stand up when hearing Thai national an_them because to pay respect to the national. Second is you should pay respect to the Buddha image because Thai people is very serious about this and don't is you shouldn't disrespect to_wards the Thai royal family because Thailand has a law to punish who_who_disrespect the royal Thai family. And the last one is you shouldn't drink alcohol near the waterfall because it is dangerous.

Alternatively, youth guides with low scores did not report much of the contents in the 4 tasks. This is evident in tasks 2 and 4. Their vocabulary was limited and mispronounced with unconnected speech, particularly when using technical terms. They neither spoke in full sentences nor used appropriate gestures. Following are some examples.

B5 Task 2: Presenting general information about Khorat Geopark

Questa_in_Khorat_Geopark_was_originate[pause] form[from]_sediment[s] by_river[pause] for_ more_than_one hundred_and_fifty_million[pause] year[s] ago. Khorat_Geopark_is[pause] signif-icant[pause] it[pause] has most diver[diverse] an_cient fossil in the woe[world] and petrified wood[pause]. If_we[pause] have_three_program_ it_will_be_UNESCO_tri-ble crow[n].

B6 Task 3: Presenting Khorat Geopark attractions

Boat_trip_along_Mun_river. It_is_loca_ted_at_ Lan_sai_Ban_Mai.

Liver[River] for_sigh_ted [constructed] an_ edu_cation_not[educational] [pause]_trif[trip] exporing[exploring] [pause] _nater[nature]_and_ the_way_of_lie[life]_along_the_mae[bank]_of_ Mun_river[pause] The_ fuction_is_than[that] it_is_u[used]_form[for]_transport_good_food. Memorian[memorial] The memorian[memorial] [pause] to rester[restore] [pause] this_petrified wood was[pause] call-structed[constructed] [pause] and [pause] can be_vishit[visited] un_ti [pause] percent[present].

B7 Task 4: Presenting Khorat Geopark community product

The product is Cenozoic solar dried banana. It's made from Krok_Ban Phonsung, Muen Wai sub-district, Meung Nakhon Ratchasima. It's made from banana. It's so yummy.

B9 Task 5: Giving suggestions about Do's and Don'ts at Khorat Geopark attractions

You should dress politely and wear long sleeve shirts because it ou_nering[honoring] the place. You shouldn't sit by point your feet to_werd the Bhuddist image and don't climb to the Buddhist image to take a photo because it is be_it is disrespectful. Thank you.

CONCLUSIONS

This research aims to compare the youth guides' speaking scores before and after learning through English for Geotourism Instruction Innovation at Khorat Geopark Area in Nakhon Ratchasima, and investigate the differences among their tasks' mean scores and differences in their speaking components. The findings shows that the youth guides' speaking scores significantly differed at a.00 level. They gained significantly higher post-test scores than that of the pre-test scores. The research showed, they had improved their speaking performances after learning through this Geotourism language instruction innovation.

Their tasks pre- and post-test scores differed significantly. The reasons that they gained higher scores may be from the learning environment that focuses on active learning that promotes the control over their own learning by being a self-regulated learner. The youth guides were thus responsible for their own learning in this social constructivism with technology integrated language learning. This includes an explorative English learning that connects the community with the language learning allowing them to acquire and search for knowledge outside the classroom walls in an authentic context.

The authentic and meaningful target language uses tasks that are required in ensuring that youth guides were able to perform in the real life setting, particularly giving a guided tour at Khorat Geopark. This helps them see the importance of learning from practical and authentic scenarios. They also had different speaking components means scores which may be from the specific requirement of the test tasks and language use in Geotourism context. The findings reconfirm that this language instruction innovation is an effective online open learning resource and it can facilitate self-regulated learning with authentic target language use in Geotourism context. These findings thus can be applied to construct language instruction innovation and lesson plans in blended learning environment to develop speaking skill in other English for specific purposes field.

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