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## **Abstracts of Asia-Pacific Conference on Advances in Education, Teaching & Technology 2019**

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**Learning beyond the classroom: Using place-based learning experiences to develop pre-service teachers' cultural knowledge and practice.**

Dr Anne Drabble

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To effectively support pre-service teachers' Indigenous cultural knowledge and practice during their professional experiences, it is important to consider interactions that connect pre-service teachers with authentic and meaningful Indigenous experiences. This case study examined the engagement of four pre-service teachers in an Indigenous community school to understand their developing cultural knowledge and practice through place-based learning. Results from the pre-service teachers' autobiographical reflections indicated pre-service teachers were concerned by their limited cultural knowledge and preparedness to teach Indigenous students. However, their place-based experience had provided quality experiential learning that allowed them to develop cultural confidence and cultural competence. In addition, they acknowledged a better understanding of local Indigenous community members outside the school environment. Pre-service teachers identified the collaborative opportunities they engaged in, as a means of strengthening the connection between the knowledge they had acquired during their university coursework, and the practice they engaged in during their place-based experiences. The findings of this case study have implications for teaching and pre-service teacher education because pre-service teachers are expected to demonstrate their knowledge and understanding of Indigenous culture in their curriculum planning, teaching and community interactions.

*Keywords: pre-service teachers; place-based learning; Indigenous; culture*

## **Untold Stories of Japanese Educators in The Philippines: Instructional Concerns in Context**

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The internationalization of higher education in the Philippines and in other countries has resulted in an increased number of foreign teachers in higher education classrooms. While considerable attention has been given to exploring the implications of internationalization on students in university or college context, there is paucity of research concerning the effect on teachers in higher education and in particular, those employed in to teach in countries culturally foreign to their own. This study explored the experiences of Japanese educators teaching in the Philippines as well as the concerns which molded their instructional practice. This is a qualitative research employing multiple case studies of five Japanese educators teaching in the Philippine schools which demonstrated unique teaching experiences noteworthy of academic and pedagogical implications. This study made use of thematic and cross-case analysis in analyzing and evaluating the data collected. Using participant observation, personal journals and in-depth interviews, it strengthened claims that fulfillment and happiness in teaching, cultural and social distance and connection with and learning from students were the notable teaching experiences. The language barrier, sociocultural differences, student attitude and personality and lack of teaching materials and resources were the concerns that molded their instructional practice. Other relative concerns like low compensation package, lack of teacher training, frustration and anxiety over shortcomings likewise shaped the teaching practice of these Japanese educators.

*Keywords: Instructional Concerns, Japanese Educators*



## **Evaluation of Analytical Thinking Ability in Biological Aspect of Grade 11 Students Using the analytical Thinking Ability Test Which Invented according to Bloom's taxonomy**

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The objective of this research was to evaluate the analytical thinking ability in the biological aspect of grade 11 students. The evaluation approach was an analytical thinking ability test that invented according to Bloom's taxonomy with 15 multiple choice items which consisted of 3 components – Principles analysis, Component analysis and Correlation analysis with 5 items in each part. The sample group was 46 grade 11 students from Phadungnaree School, Kantharawichai District, Mahasarakham province in 2018 academic year. The research instruments were an analytical thinking ability in the biological aspect test altogether offering 15 multiple choice items within half an hour. The research method of this study was a survey research model comprising observe, testing, evaluation and reflect. The data were analyzed by using mean, percentage and standard deviation. The results presented that the analytical thinking ability in the biological aspect of these participants had the lowest average score with 7.33 which less than 70% of all 3 components of analytical thinking. Correlation analysis had the highest average score at 3.17, whereas principle analysis and component analysis were in middle and lowest average score with 2.37 and 1.78 respectively. Correlation analysis, component analysis and principle analysis had a standard deviation of 0.95, 1.11 and 1.14 respectively. This result had pointed out that grade 11 students from Phadungnaree School could not analyse circumstances in biology subject as it ought to be. The value of this study can help teachers to develop their pupils' analytical thinking ability by using the appropriate lesson plans. the majority learning problem of grade 11 students can be solved by efficient teachers who have experimented in this point. Therefore, the next research might be searching for eligible innovations to solve these disadvantages.

**Keywords:** *Analytical Thinking Ability, Biology, Bloom's taxonomy, Principle Analysis, Component Analysis, Correlation Analysis, Grade 11 Students*

## **Preliminary Study on Problem Solving Skill of Grade 10 Students in Physics**

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Problem solving is one of the most important skills in terms of learning, working, and way of life. This research aimed to preliminary study on problem solving skill in physics of grade 10 students. The purposive sampling was forty students who studied in science and mathematics program in academic year 2018 from high school located in North East of Thailand. In this study, the 20 items with four multiple-choice contain of five situations related with physics content were used as an instrument of the research. Based on Weir (1974), the problem- solving skill consist to four processes including 1) statement of the problem, 2) defining the problem or distinguishing essential features, 3) search for and formulating a hypothesis, and 4) verifying the solution. In addition, Data were collected by researcher and were analyzed by using derivative statistics in order to study students' problem-solving skill. The result of this study revealed that 92.5 percent of all students in this classroom received scores lower than 70 percent of total scores. Furthermore, the mean score of problem-solving skill of all students was 9.32 of 20. The mean score in terms of statement of the problem, defining the problem or distinguishing essential features, search for and formulating a hypothesis, and verifying the solution were 3.05, 1.8, 2.18, and 2.3 out of 5, respectively. The lowest mean score was shown in defining the problem or distinguishing essential features and the highest mean score was shown in statement of the problem. Although it was only 61 percent of full scores which mean it still showed in low criteria. In preliminary studying revealed that 37 students cannot reach the minimum requirement for problem solving score; therefore, the problem-solving skill need to be solved and developed in the future, in order to promote scientific learning for students and conduct the classroom action research as well.

*Keywords: problem solving skill, preliminary study, grade 10 students.*

## **Understanding Quality in Philippine Private Non-Sectarian Higher Education**

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An inverse relationship exists between the growing number of Private Non-Sectarian Higher Education Institutions (PNSHEI) and diminishing student performance in terms of graduate employment and passing rates in the national board examinations. The purpose of this multiple case study was to describe how three Philippine PNSHEIs that operate as both education providers and business ventures understood Quality. A multiple case study methodology and two-level sampling were conducted. Three PNSHEIs that represent the vertical typology of *Autonomous*, *Deregulated*, and *Regulated* private colleges or universities in the Philippines were selected and within each site, an administrator, a faculty member, a student, and a parent of an enrolled student were interviewed. Documents, observations and extant literature were used for data triangulation. A within- case, and cross-case analysis were performed. Seven themes emerged: Philippine private non-sectarian higher education Quality is understood as the (a) Success of Graduates; and (b) Surpassing Standards. Structures and Procedures in (c) Instructional Leadership and (d) Leadership and Governance promoted Quality. Finally, Quality is manifested in (e) Performance in National Board Exams; (f) Positive School Culture and (g) Stakeholder Satisfaction. Findings of the study suggest that Quality within each institution was predicated on accreditation but understood by the individual participants as stakeholder satisfaction. Results suggest that mandatory accreditation and demographic specific strategies to promote stakeholder satisfaction are essential for Quality in Philippine PNSHEIs.

*Keywords: Quality, Private Higher Education*

## **A Study on Abilities of Analytical Thinking and Achievement Motivation in Physics of Mathayomsuksa 5 Students**

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The purposes of this research were to study abilities of analytical thinking which include 3 sections that were analysis of element, analysis of relationship and analysis of organization principles, and to explore achievement motivation of physics subject of Mathayomsuksa 5 students. Participants consisted of 25 Mathayomsuksa five students in the academic year 2018, Phadungnaree School, Mahasarakham, Thailand. The research instruments were referred from previous researches in the similar cases (Rungrawee Siribunnam (2556), Sukhumman Saengkla (2551)). The data collection instruments were divided into two parts as follows. First of all, there were 10 items of analytical thinking test (a 4-choice selective test) which separated to 3 sections as 3 items for the analysis of elemental section, 3 items for the analysis of organizational principle section and 4 items for the analysis of relationship section. Secondly, we used 10 items of achievement motivation questionnaire in this research. The data of analytical thinking test were analyzed by using basic statistic of percentage and the data of achievement motivation questionnaire were analyzed by using Rubrics score. This research found that 96 percent of students could reach the minimum requirement of the analysis of organizational principle and the analysis of relationship section. There were 60 percent of them could reach the minimum requirement of the analysis of elemental section. However, in general, there were only 60 percent of students could reach the minimum requirement (50 percent) of the abilities of analytical thinking test. In addition, students had good achievement motivation.

**Keywords:** Analytical thinking, Achievement motivation, Phadungnaree School

## **Self-managed Development for Sustainable Assessment**

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Evaluative judgement is gaining significant attention in higher education institutions around the globe. It is seen of prime importance for students as it offers them opportunities to improve their life-long learning by allowing them to make decisions over the quality of their work and others. Yet, it is rarely employed as a method of improving assessment among teacher educators in Sultan Qaboos University in Oman. This paper investigates the impact of students' evaluative judgment on their own work for self-managed development. Through a qualitative methodological approach, reflections and guided narrations are used to gain a deep understanding of how 8 Master students from the Instructional and Learning Technologies Department judge their own work on a collaborative project to develop evaluation plans for assessing the quality of alternative learning environments. Results indicate that students are capable of developing evaluative judgements in determining the quality of their work and others. Students rely on criteria and standards, rubrics for self-assessment and peer-assessment as well as scaffolding and timely feedback from the instructor. Inquiry and reflective practice can help students to make sound judgements by using good evidence as a matter of habits ensuring sustainable assessment.

*Keywords: Self-managed development, evaluative judgement, sustainable assessment*

## **A Study of Learning Achievement and Critical Thinking in Biology**

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The purposes of this research were 1) to study the students' learning achievement in Biology on nervous system and 2) to evaluate the competencies on critical thinking. The sample used in this study was 46 students of Matthayomsueksa 5/4 students in Phadungnaree School, Mahasarakham Province, Thailand in the first semester of the academic year of 2018, obtained using the Purposive Sampling technique. The instruments used in this research were (1) a 15-item test of learning achievement in Biology with discriminating powers (B) ranging more 0.02 and a reliability ( $r_{cc}$ ) of 0.81 and (2) a 15-item test of critical thinking with difficulties (p) ranging 0.31-0.71, discriminating powers (r) ranging 0.33-0.69, and a reliability (KR-20) of 0.87. The statistics used for data analysis were mean, percentage and standard deviation. The findings were as follows: 1) The mean score of students' learning achievement test in Biology was 6.13 or 40.86 percent. The standard deviation of learning achievement was 2.57. From the mean score of students' learning achievement test of the students, it can be interpreted that the ability of students in Phadungnaree School, Mahasarakham Province on levels of blooms taxonomy test was at a significantly low level and) The results of assessment in critical thinking of the students found that the efficacies on critical thinking was at a significantly low level, which had mean score at 6.03 or 40.26 percent. The standard deviation of critical thinking was 4.02. The findings revealed students (N=46) scored dissatisfactory mean value in learning achievement in Biology on nervous system and critical thinking. Research database can used to improve education quality and students' critical thinking.

*Keywords: biology, critical thinking, learning achievement*

## **Attitudes toward Science Learning of Mattayomsuksa 4/4 Students at Phadungnaree School**

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This study aimed to observe the attitudes toward science leaning and the correlation between attitudes toward science leaning and chemistry achievement. The sample group was 45 mattayomsuksa 4/4 students at Padungnaree School, Mahasarakham, Thailand. The instrument for data collecting was a 20-item questionnaire from previous study with the Index of Item-Objective Congruence (IOC) value of 0.94. According to Likert Scale, each item possessed 5 scales ranging from 1 to 5. This questionnaire consisted of 3 aspects including complication of science content, importance of science learning, and satisfaction in science learning. Mean value and Standard Deviation (SD) value were employed to analyze the obtained data. The results of mean value in 3 aspects were 2.89, 3.85, and 2.91, respectively. After interpreting the data, the aspect in complication of science content and satisfaction in science learning were considered to be moderate level. Meanwhile, the aspect of importance of science learning was high level. Then, the data of chemistry achievement was taken from the actual final test score. The mean score of sample group was 5.89 out of 20. As a result, this group of students perceived that science learning is important. Since the complicated content, they did not feel satisfy about science learning related to their low chemistry achievement. The findings in this study can be the preliminary data for future study focusing on reducing the complicated content in science and enhancing the satisfaction in science learning in order to promote science achievement.

***Keywords:*** *Attitude toward science learning, Learning Achievement, Science Learning*

## **Defining the Philippine Entrepreneurial University**

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Higher Education Institutions (HEIs) are now facing unprecedented challenges toward becoming entrepreneurial which mean that they should have the attitude, skills and behaviour of a university necessary to arrive at creative, innovative and practical solutions to the emergent problems of the 21<sup>st</sup> century. While the Philippines slowly embraces the concept of globalization and internationalization in education, the concept of being an Entrepreneurial University is not totally accepted yet in the Philippines. This is due to a misconception that an Entrepreneurial University is tantamount to commodification of knowledge which translates education as pure business or money-making industry. Hence, the purpose of this study is to see how universities understand and practice entrepreneurial education. A single case study research was conducted in a purposively selected HEI in the Philippines. School administrators were interviewed; data collected were transcribed, coded and categorized into themes, and analyzed using a narrative approach. Results showed that the selected HEI defines entrepreneurial university based on its four-prong impact, i.e., academic, innovation, economic, and social. Results revealed several factors that propel a university in becoming entrepreneurial. Likewise, the results showed the issues that administrators need to face should they decide to work towards becoming one. The findings and implications of this study will provide a clearer understanding of entrepreneurial education to foster directions of Philippine HEIs in gearing towards an Entrepreneurial University

*Keywords: Entrepreneurial University, Globalization, Internationalization*



## **Exploring Analytical Thinking Abilities of 10<sup>th</sup>-Grade Students**

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This research aims to study the analytical thinking abilities by 10th-grade students at the Phadungnaree School, first semester of the academic year 2018, Mahasarakham, Thailand. The samples of this study are 33 10th-grade students in science and mathematics curriculum. They are selected by purposive sampling method. The assessment instrument was used to assess students' analytical thinking abilities; there is an analytical thinking abilities assessment form. An analytical thinking abilities assessment tool comprised of 20 items of multiple choices questions which are divided into 5 aspects of analytical thinking abilities according to Marzano's taxonomy (2001) including matching, Classifying, analyzing, Generalizing and specifying. Data analysis was used mean standard deviation and percentage. The results showed that the overall of average scores of 10th-grade students' analytical thinking abilities which are 10.15 accounted for 50.75 percent and average scores of 5 parts are 2.36, 2.18, 2.61, 1.61 and 1.39 accounted for 59.09, 54.55, 65.15, 40.15 and 46.46 percent of specifying, matching, analyzing, generalizing and specifying respectively. However, the data illustrate the scores which are both overall and each aspect not reach to minimum requirement at 70 percent, but there are 3 students have average scores which reach to minimum requirement in overall scores of analytical thinking abilities. This study can use to data base for developing students' analytical thinking abilities and use to be data base to study in future.

*Key word: Analytical thinking, 10<sup>th</sup>-grade student, higher order thinking skills*

## **The Study of Mathematical Problem-Solving Ability and Mathematical Analytical Thinking Ability**

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The research aimed to study of the mathematical problem-solving ability and the mathematical analytical thinking ability of Matayomsuksa 5. The purposive sampling was used to select the sample. The sample was 45 students of Matayomsuksa 5/4 in Phaduangnaree School, Thailand, split to 22 females and 23 males. The research instrument was 2 items subjective test which divided into 4 steps, including the ability to understand problems or analyze problems, ability to plan to solve problems, ability to perform problem-solving and find answer, and ability to check answers and it was 10 items multiple choice examinations which divided to 5 aspects, including aspects of ability to solve unfamiliar problems, ability to discover relationships, ability to create proofs, ability to criticize proofs, and ability to create and express the reasonableness of generalization. The content validity of multiple choice and subjective test were examined using mean and standard deviations. The results of the mathematical problem-solving ability and the mathematical analytical thinking ability were revealed mean as follows 7.533 and 3.044 respectively and standard deviations as follows 0.676 and zero respectively out of 4 aspects of the mathematical problem-solving ability and 5 aspects of the mathematical analytical thinking ability. Hence, increasing of students' mathematical problem-solving ability and mathematical analytical thinking ability of Matayomsuksa 5/4 in Phaduangnaree School should be improved.

**Keywords:** *mathematical problem-solving ability, mathematical analytical thinking ability, Phaduangnaree School*

## **Looking to the Future: The Case for Intentional Succession Planning**

Dr. Clive Hickson

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Succession planning is normally categorized by the identification and nurturing of internal personnel to fill leadership roles in an organization (Witt/Kieffer, 2008). This is most often achieved through training programs or career ladders (Hanover Research Council, 2010). Although seen by the corporate business world as a critical element in sustainability and efficiency, higher education environments have been slow to embrace formal succession planning and it has only recently become a topic of consideration (American Council on Education, 2018). Few institutions have a formalized process (Hanover Research Council, 2010). When institutions do have a system, such planning tends to be conducted at only the highest levels of leadership such as at the board or president levels (Witt/Kieffer, 2008). However, it is somewhat uncommon at other levels of leadership in colleges and universities, and especially at the academic officer, dean and chair levels. Succession plans need to have a degree of flexibility and, most importantly, be linked to strategic plans. Higher education institutions are faced with needing to successfully navigate a fast-paced and wide-ranging educational world that requires continuous change, in order to address the ever-increasing demand of managing large scale environments, being efficient and financially creative, and ensuring high quality educational experiences (Hickson, 2015). Therefore, the need for the development of effective leadership models has likely never been greater.

*Keywords: Succession, planning for success*

## **Learning Space or Study Space?**

Prof. Fauzy M. Wan

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A learner when he or she is required to study or learn has to interact with an environment which encourages or facilitate the process. The characteristics of the environment are often influence by the learners' preferences and tend to be very personalized. This personalization is often based on each individual's preference and needs. This paper will offer the results of analyzing students' preferences and comments regarding their favourite places to study and learn. Patterns of several characteristics of the environments that students identify as a factor which influences their choice of locations have emerged. Sultan Qaboos University (SQU) has implemented a blended approach as the main approach for the teaching and learning process. As 21st century learners have different outlooks and perspectives for integrating the information that they receive or are exposed to, a blended approach for these digital natives have become a policy at SQU. These patterns or characteristics are very similar for both undergraduate and graduate college students as well as for instructors. If an organization or institution take into account of these patterns and needs, then the designs of future classrooms and lecture halls with these characteristics may encourage deeper learning among students.

*Keywords: Instructional Design, Learning Spaces, Blended Learning*

## **The Study of Students' Learning Achievement in Chemistry and Ability in Scientific Problems Solving of Matayomsuksa 4 Students**

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Science is a subject that focuses on the learning process. Besides knowledge which students should get from science learning, they should improve problem solving skill which is a crucial skill for students who experience learning and living in the 21<sup>st</sup> century by using scientific knowledge. Therefore, the success of Chemistry learning is not only student's learning achievement but also ability in problem solving using Chemistry knowledge. The purpose of this study was to investigate students' learning achievement and ability in scientific problem solving of Matayomsuksa 4 students using quantitative design to survey. The target group was 35 Matayomsuksa 4/3 students in the first semester of the academic year 2018, Phadungnaree School, Mahasarakham, Thailand. The purposive sampling was used to select the target group. The research instrument employed in the study was the test modified from the previous study. The data was collected using a test which consists of two parts: student's learning achievement in chemistry and problem solving ability in scientific. The collected data were analyzed using percentage and mean value. The results showed that all of the students had learning achievement score less than criterion 50% of full scores. In addition, it was found that 7 students had over 50% of the full score of ability in scientific problem solving. It indicated that this is a significant point that should be considered to develop in future research.

*Keywords: ability in scientific problems solving, purposive sampling, students' learning achievement*

## **Exploring Science Concepts and Attitude Towards Biology Learning of 10th Grade Students**

Natthawat Aikaew<sup>1</sup>, Somsong Sitti<sup>1</sup>, Kanyarat Sonsupap<sup>1</sup>, Kanyarat Cojorn<sup>1</sup>

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This study focused on three purposes. The first purpose of study was to explore science concepts in Science-Mathematics high school students at the Phadung Naree School, academic year 2018. The second purpose of study was to explore attitude towards biology learning in Science-Mathematics high school students at the Phadung Naree School, academic year 2018. The third purpose of study was to use as data base for study in future for develops quality of students. The study selected with the high school students attending 10<sup>th</sup> grade in Science-Mathematics students at the academic year 2018 at Phadung Naree School, Mahasarakham, Thailand. Therefore, total numbers of samples for this study are 33 students. The study instrument used in study were 15-items, multiple choice and explain reason science concepts test of biology focused on the cell and substance transport across the cell membrane and 12-items, 6-scale attitude towards biology learning test. In this attitude test is divide three parts are cognitive component, behavioral component and affective component. For this study, two parts in focused, the first part is the science concepts of Biology focused on the cell and substance transport across the cell membrane. The second part is the attitude towards Biology learning. The result found that Science-Mathematics student's science concepts focused on cell and substance transport across the cell found that student's science concepts mean score at the 11.12 from full marks of 45. In addition, Science-Mathematics student's Attitude towards biology learning found that attitude towards biology learning of student is at the very good level. This study can used to data base for develops quality of students and enhance the quality of education of high school students.

*Keywords: Science education, Science concepts, Attitude towards biology learning*

## **An Action Research on Blended Learning Instruction**

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The study aimed to determine if blended learning instruction positively affects students' academic performance. The study made use of a 10-point pre-test and post-test which are based on standardized tests. After asking permission from Xavier School at San Juan City, Metro Manila, Philippines, and upon the approval to conduct the study, the researchers personally conducted the study and collected the data. Data were checked and tallied. These were encoded and analysed in Strata. T-test was used to determine the difference between the pre-test and post-test score as well as the pre-test and post-test scores of the two classes. The study revealed that there is a significant difference between the pre-test and post-test scores of the classes. Furthermore, the findings show that there is a difference between the post-test scores of the experimental and controlled group. This implies that 60% blended learning plan is more effective than 20% blended learning plan.

*Keywords: Blended Learning, Educational Technology, Instructional Leadership*

## **Teacher's Training Program: How to teach English Listening with Universal Grammar**

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Teachers help learners to notice features of language. This paper opens with general discussions with the future teachers or is the current teachers who attending graduate school of education in Sungkyunkwan University, in Seoul, South Korea for a course design for developing listening skills. Linguists began to see that language was one factor of general development, one aspect of the cognitive and affective ability to deal with the world and with self. According to Krashen, language is acquired when people understand messages (he called these messages comprehensible input). The input hypothesis is consistent with what we know about children's L1 acquisition. The teachers need to know that the idea of input has been central in the elevation of listening to its recent status in language learning. Learner's cognitive and affective framework would be considered with making using of learner's peripheral knowledge. The Teachers' syllabus will contain target grammar and/or target vocabulary with listening materials. The teachers should know the Universal Grammar, especially phonological rules and then they explain their students to listen target language comparing to the Korean phonological rule.

*Key words: Krashen's Input hypothesis, phonological rule, universal grammar, listening skill,*