IMPROVING SECONDARY SCHOOL STUDENTS' HIGHER ORDER THINKING SKILLS THROUGH LESSON STUDY RESULTS

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Abstract. Nowadays Kazakhstani education is experiencing changes aimed at achieving global standards. Critical thinking, creative thinking and problem solving have become the most required skills of the 21st century. This study attempted to understand whether or not the results of Lesson Study can help to develop Kazakhstani secondary schools students' Higher Order Thinking skills. Due to this fact many schools are concerned with bringing 21st century skills, particularly HOTS into the classrooms. However, not all the teachers are aware of the importance of HOTS and those who are aware in most cases do not know how to promote HOTS in the classroom. Lesson study model is very helpful in this case for understanding and catering for students' needs, which in turn may help develop students' HOTS.

In order to achieve this goal, two research questions were created such as the ways of responding to educational needs of mixed ability EFL learners when providing HOTS activities; and to what extent Lesson Study approach influences HOTS integrated English language classrooms. The theoretical framework was based on the works of major researchers in HOTS and LS spheres such as Bloom, Anderson & Krathwohl and P. Dudley. Qualitative data collection methods such as observation and interview were selected to conduct the research. The results showed that Lesson Study has a positive effect on learners' HOT skills, as well as having a positive effect on pre-service teachers' professional development. The research paper is one of the few that were conducted in Kazakhstan concerning the Lesson Study approach and can contribute to other pre-service or in-service teachers' investigations in this field by providing some insights on how to conduct HOTS integrated lessons driven by Lesson Study results.

Keywords: secondary school, students, higher order thinking skills, lesson study, HOTS, English language, observation, interview

Basic provisions

Improvement of teaching quality in classrooms is considered to be the most direct way of achieving developed educational standards due to the various reforms in education that are getting more and more significant due to the recent upgrades in technology and science. The realization and accomplishment of educational reforms are inevitably connected with the professionalism of educators, so the teachers play a crucial role in a reform adaptation process in Kazakhstan. Nevertheless, the quality of teaching is considered as one of the main issues in the country that makes educators think about the effectiveness of teacher training programs and activities that are given to teachers. Mainly educators are dissatisfied with the design and delivery of professional development courses and therefore they tend not to participate in them. The promotional activities of professional qualifications offered to teachers are mainly likely to be in forms of seminars, lectures, and training.

However, researchers claim that such practices are not effective enough for the teaching quality in the classroom [1].

Teachers need to enhance their professional development when they finish their pre-service education. Traditional teaching development programs have little or no positive impact on promoting teaching quality focusing on top-down methods, and therefore there is a need for a cooperative model that stimulates working collaboratively and sharing teaching experiences. Even though there are different traditional methods for the progress of teaching quality, the use of inquiry-focused ways is highly preferable in "constructivist theory" in education [2, p.152]. Lesson Study (LS) is one of the examples that is based on an inquiry approach that promotes collaboration and active teacher participation, and classroom practice. Lamb and Ko highlight that the LS approach provides pre-service and in- service teachers an opportunity to enhance their lesson design and classroom management systems in many countries [3, p.80]. Contrary to lack of usage of LS, Higher Order Thinking skills (HOTS) are highly acknowledged in Kazakhstani education and the government promotes use of Bloom's Taxonomy in forming the curriculum and educational objectives. Nevertheless, research conducted by OECD revealed that most educators lack knowledge on how to integrate various thinking skills into their lessons [4]. In addition, "the evidence from international assessments is that learning and teaching in Kazakhstan are quite strong in the lowest two, knowledge and comprehension, but weak in all four thinking skills from "application" upwards."(OECD). Therefore, alternative ways to improve HOTS integrated EFL lessons should be sought, and LS is one of the means to achieve this goal.

Introduction

As we go deeper with the Kazakhstani educational system, the Lesson Study approach was introduced only seven years ago and nowadays is being just practiced only at NIS, one of the pilot schools in the country [5]. Nevertheless, studies show that teachers are more isolated from each other and practice more individualistic approaches in many secondary Kazakhstani schools [5-6]. There are different ways of self-reflection practices for teachers such as getting students' opinions, lesson recording, and conducting demo lessons; however, these kinds of practices are not free of subjectivity. Teachers may not notice the flaws in the lesson, make self-correction and mainly do not get feedback from other teachers or work collaboratively.

Moreover, the LS model is preferred mainly among science and math teachers' professional development at NIS and secondary schools [5]. However, the approach is rarely used in Foreign Language Teaching field. Thus, LS is viewed as a new model for Kazakhstan, there is a lack of research works on exploration to what extent the LS approach can influence in-service and pre-service teacher professional development as well as student learning outcomes. Beside the lack of LS usage in Kazakhstani education, there is a lack of understanding and application of higher order thinking skills. Even though teachers in most schools are required to create lesson plans based on the Bloom's Taxonomy levels, most teachers fail to use Bloom's Taxonomy to the fullest extent and according to statistics by OECD (2014),

Kazakhstani students score less in higher order thinking skills. Moreover, school teachers receive training and seminars on how to include HOTS in their lessons but this also does not have a significant effect on their teaching. Therefore, different ways to improve EFL students' HOTS should be tested and analyzed.

Aim and Significance of the Study

The research aims to investigate how analyzing and applying the results of Lesson Study can help to improve Kazakhstani secondary school EFL students' Higher Order Thinking skills. This paper intends to raise awareness that could serve as a guide for future large-scale-studies.

Two main *research questions* that address the problems stated above:

1. What are the ways to respond to the educational needs of mixed ability EFL learners through adapting HOT activities?
2. How does the Lesson Study approach influence HOT integrated EFL classrooms?

Considering the lack of research works and literature on Lesson Study in Kazakhstan and its positive influence on teacher professional development around the world, there is a need to investigate the LS model in Kazakhstani English Language Teaching context. Research works on LS mainly focus on in-service teacher practices, thus, this paper is one of the few academic sources written from the perspective of pre-service teachers. The research results could be used by educational policymakers and school principals as a source on how to beneficially construct the professional development of teachers, by teachers to enhance their HOT integrated lessons as well as by researchers as a point for further investigations in a similar context.

Literature review

Advancements in the 21st century that took place in various aspects of human life changed the approach to everything rapidly and one of the most significant impacts was noted in the education sphere. Nowadays, we face a transition from an information-based setting to an innovation-based setting and success is not measured anymore by just what a person knows but how this knowledge is used to solve problems, innovate new ideas and to use imagination to accomplish different tasks [7]. According to Pogrow, HOTS are crucial today as they are key to both successful academic life and adult life [8, p. 68]. Lewis & Smith state that HOTS occur when new information is taken and it is combined with the already stored information in the brain to achieve a purpose or find a solution in complex situations [9, p.133]. Saul & Wuttke further develop this idea saying that "These skills are activated when students encounter unfamiliar problems, uncertainties, questions or dilemmas." [10, p. 426]. The most widely used taxonomy which was translated into many languages and is currently being implemented in many countries around the world is Bloom's Taxonomy (BT). As Forehand states "While it should be noted that other educational taxonomies and hierarchical systems have been developed, it is Bloom's taxonomy which remains, even after nearly fifty years, the de facto standard." [11, p.125].

Bloom's Taxonomy that was published in 1956 was named, Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook I: Cognitive Domain as the leading resource that influenced education systems around

the world. Bloom describes his taxonomy as a tool which was designed to provide for classification of educational goals, to help various parties involved in the education sphere such as teachers, administrators, professional specialists and researchers to handle problems with curriculum and evaluation problems better [12, p.10]. "Bloom's taxonomy is a multi-tiered model of classifying thinking according to six cognitive levels of complexity." [11, p.125]. They are: 1. Knowledge, 2. Comprehension, 3. Application, 4. Analysis, 5. Synthesis, and 6. Evaluation (Bloom, et.al). However, after nearly 50 years since the original taxonomy was released Lorin, a former student of Bloom, with a group of researchers updated the original taxonomy to adapt it to 21st century learning and teaching [11, p.125].

One of the most significant changes in the revised taxonomy was a transition from one dimension to two dimensions. As a result, objectives can be formulated in terms of a noun-verb relationship [12, p. 227].
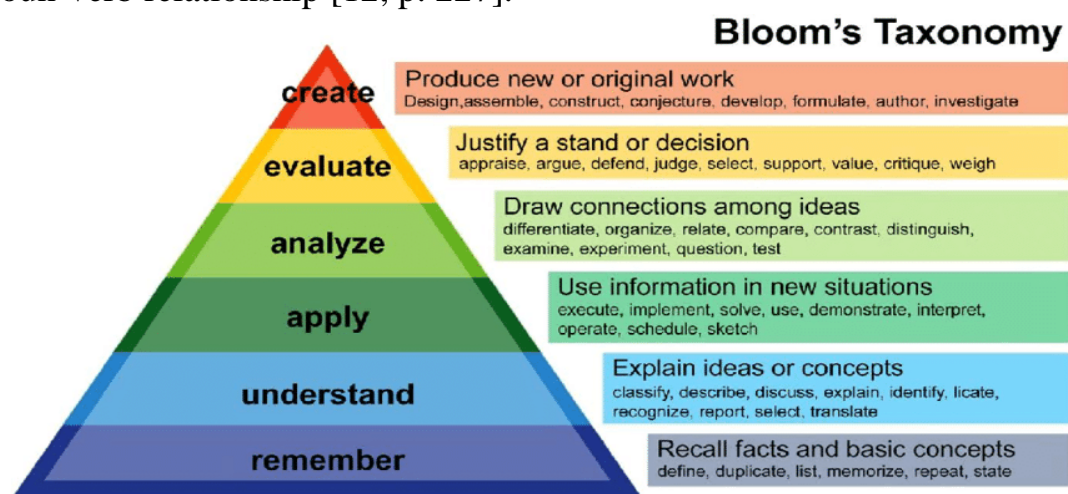

Figure 1. Revised Bloom's Taxonomy pyramid. From (Vanderbilt, 2016).

The number of levels did not change; however, each level was exchanged with a verb instead of a noun. Moreover, names of some levels were changed, for instance knowledge was replaced by remember, comprehension was renamed as understand, and synthesis changed to create. Furthermore, places of synthesis and evaluation changed in the revised taxonomy and create (synthesis) became the highest level in the taxonomy [12, p. 230].

The revised taxonomy emphasizes teacher usage and the strict hierarchy of the original taxonomy has been eliminated, as a result, allowing teachers to formulate lesson objectives that allow combination of different levels. Even though the revised taxonomy is less bound to the hierarchy, in a case of locating center point of the taxonomy it reminds a hierarchy with three levels, remember, understand, and apply falling under the lower order thinking skills category and analyze, evaluate, and create being part of the higher order thinking skills [14]. Therefore, a relaxed taxonomy, which still maintains to some extent the hierarchy was used in this research as it is understood by many pre-service and in-service EFL teachers.

The way the teachers examine their teaching through lesson study is defined by research lesson cycles. The lesson study focuses on cyclical processes created to improve lesson instructions that are conducted by collaborative groups of at least three teachers and can include other members of the school community as additional colleagues, experts, and advisers [15, p. 89]. The teachers participate in the process

that is well-defined and involving discussion of the lessons that they have created and planned together.

Dudley (2012, 2014, 2015), one of the bright representatives of LS models in the UK, articulates the process of LS in detail. The process of lesson study is split into cycles that have several stages which might be repeated twice or thrice until the purpose is achieved.
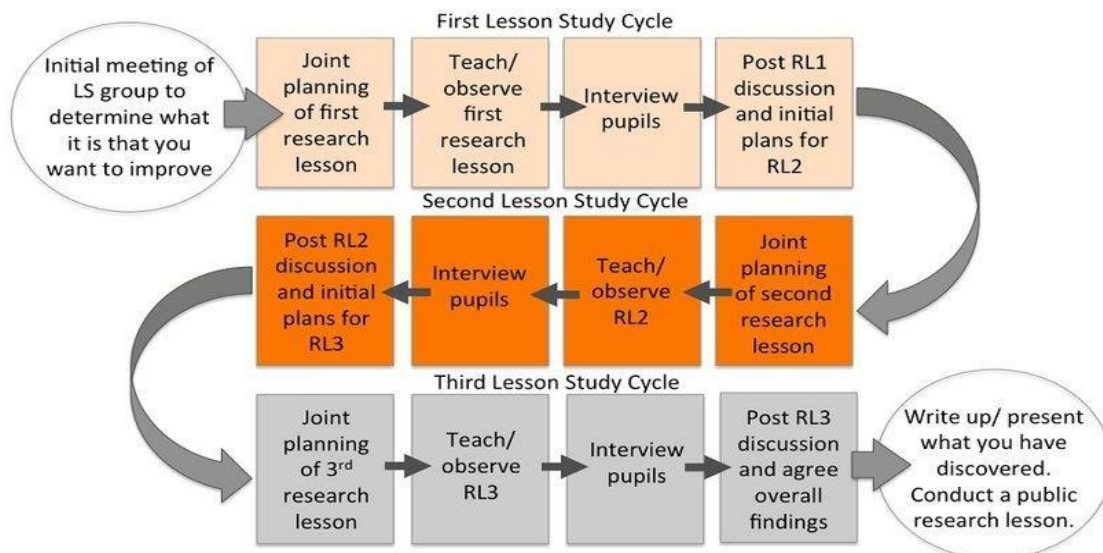

Figure 2. Lesson Study Process. From: lessonstudy.co.uk (Dudley, 2014)

Lesson Study in Kazakhstani educational context

Research work conducted by Kokhotva was the first in academic source within the Kazakhstani context that focuses on LS approach. According to Khokhotva, Lesson Study was first introduced in Kazakhstan in 2012 as an element of an educational platform for the transformation of curriculum and instructional and professional development for teachers. She asserts that almost ninety percent of Kazakhstani teachers were accustomed to the concept of Lesson Study in 2017. The study program on the Lesson Study approach began to develop in Kazakhstan by joining the World Association of Lesson Studies lead by Pete Dudley in 2016 that was a significant start in advancing the Lesson Study approach in all regions. Moreover, it has begun to be widely used by local areas in 2018 with the aim of promoting the professional development of in-service teachers [6, p. 259]. She investigated the barriers of implementing LS approach in Kazakhstani schools from the perspective of in-service teachers.

The result analyzed by the interviews with sixteen teachers from various schools who are familiar with the LS approach no less than half a year. She concludes that LS is a developing phenomenon in the country that has great potential in changing teachers' beliefs about beneficial pedagogical approaches that are required in the twenty-first century.

Balgabekova (2019) examines Lesson Study practices in one of the pilot schools in Kazakhstan. She asserts that teachers perceive Lesson Study practices at NIS as a platform for collaboration with other teachers that influence on teaching practice and student learning. On the other hand, the practice of Lesson Study was influenced by internal and external factors including educator's personal

characteristics, socio-cultural characteristics and a few organizational aspects in Kazakhstan. The data was collected through interviews with 16 teacher participants from four focus group discussions. The study aimed to gain teachers' individual and collective views. It was found that the LS approach appreciated in NIS teaching practice is improving pedagogical knowledge as well as student engagement.

Lesson Study in ELT context

The investigation conducted by Bayram and Bikmaz (2018) presents the study of LS approach implementation in one of the Turkish university foundation courses with the involvement of three volunteer EFL educators. This research points to the main problems of LS as model conceptualization and performing research related aspects of the approach, feeling of anxiety, timeframe for educators and students. On the other hand, results were also positive which could enhance the personal and professional skills of teachers related to collaboration, conducting more student-centered lessons, designing a well-constructed lesson plan, developing classroom-management. The researchers suggest that support from colleagues and administration is the key element that helps teachers to cope with the challenges while conducting research lessons. The result showed that LS has a beneficial effect on student learning if educators participate in the LS process over a long period that enables them to better understand the student learning process as well as reflective teaching practices.

Similarly, Coskun (2017) explores the application of LS approach in the Turkish educational context. In his study, 18 students and English language teachers were interviewed and recorded. He investigated how LS models influence the promotion of teacher learning in their working context. Instructors involved in three cyclical processes of LS that resulted in developing such aspects like critically analyzing, reflecting, being more aware of student voice and needs.

However, teachers dealt with an issue of extra workload and time management.

In another study, Lamb and Ko (2016) examines the impact of the implementation of LS on pre- service teacher practices. She compares the differences and experiences of the LS model concerning pre-service teacher practices and teacher training programs in research articles of six different countries. Pre-service teachers, by observing and participating in classes of more experienced in-service teachers, learn how to teach (Lamb and Ko, 2016). The study shows that those who just started the professional teaching career need to improve pedagogical knowledge with the help of a mentor guided LS model, stressing the importance of this practice for all stakeholders regardless of their age and year of teaching. She concludes that collaboration and good pedagogical practice for pre-service teachers should be estimated as it is crucial for their professional socialization.

Year by year traditional teaching approaches are replaced by innovative models. The new educational reforms are being implemented in the Kazakhstani secondary school system and LS approach is a new concept that is just being explored. The world practice of LS shows its positive impact on both teachers' and learners' development.

Description of materials and methods

The research conducted is an action research, which included various types of materials, participants, and data collection methods.

Participants

Pete Dudley (2015), one of the developers of the LS approach, pointed out the importance of "case pupils" in research lessons. In order to explore whether the Lesson Study method contributes to the development of Higher order thinking skills of students, there were 11 participants of 7th grade involved in the current study, 4 males and 7 females aged 12-13, who were selected due to their level of English and activeness during English lessons. The mother tongue of all of them is Kazakh. There were no other reasons for selecting the participants of the study.

Materials and tools

With the purpose of reaching unbiased, valid and accurate results, both qualitative and quantitative methods were selected to carry the study. Data from secondary sources such as research papers were used in order to organize the design of the procedure. Especially, British researcher Pete Dudley's handbook served as a foundation for the research design. The material is presented in the "Literature review" section. All the sources were checked for relevance.

Moreover, during the lesson, an observation was conducted by pre-service teachers to receive relevant data. Also, in order to identify the attitudes of the participants toward the activities, which could support already collected information, a structured interview was constructed, which consists of 4 questions, and which was recorded, because interviews are seen as the most appropriate tool of data collection in case study.

Procedure

First, an appropriate group of students was selected. Then, in order to prevent the students from feeling anxious during the experimental lessons, the researchers spent some time participating in the group's English classes. Next, students were explained the details of the study. After that, in order to maintain and guarantee anonymity and confidentiality, consent letters were sent to students' parents to get familiar with the research, since all of them were aged under 18. The document included a description of the study, information concerning confidentiality, and the reason why the student was selected. Those, whose parents gave permission to participate in the study then became the target group.
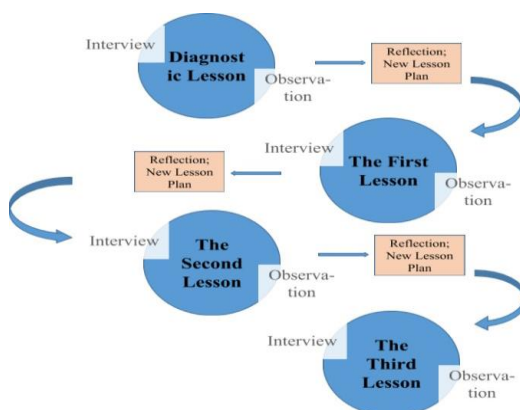

Figure 3. Research procedure

Secondly, a lesson plan was constructed for the first lesson, which included activities designed for the higher four stages of Bloom's Taxonomy: applying, analyzing, evaluation and creation. One pre-service teacher had to conduct the lesson. Since the levels of students were not still identified, this lesson was mainly dedicated to finding out their levels. The other three pre- service teachers' task was to observe the students according to factors such as how many of them were engaged, and whether they were able to finish the task in a given time. Then, taking the observation results into consideration, students were divided into three groups according to their proficiency levels: high, medium, and low. After that, the observation data was discussed and the lesson plan was altered for the next lesson.

During the next English lesson, students were divided into groups and seated next to peers at the same level. This was made with the intention to simplify the process of observation. Moreover, it also helped to prevent stronger students from dominating those weaker ones. High leveled group of students included 4 people, medium leveled included 3, and low leveled included 4. Whereas one pre-service teacher kept taking the role of the teacher, each of the other three observers focused on only one group of students that were decided beforehand. Again, observation notes were made and at the end of the lesson, each observer interviewed their focus groups about the previously mentioned aspects. However, this time, all the students were asked one more question about whether it became easier for them to accomplish the tasks compared to the previous lesson or nothing changed. After the lesson, all the data was analyzed and a new lesson plan was constructed.

The process was repeated during and after the next lesson. Overall, there were four such lessons. The reason why students were asked these interview questions all over again after each lesson was that it enabled the researchers to accurately track the changes in students' abilities to complete the prepared types of tasks and to compare the answers of each interview. The interview results showed how much students themselves felt they improved by accomplishing similar tasks over again. Also, all the observation notes were analyzed by comparing them regarding previously mentioned aspects such as how many of students were engaged and whether or not they had difficulties finishing the task in time, and this showed whether or not at the end they struggled less with the tasks they found challenging at the beginning of the experiment. This way, the conclusions were made if the Lesson Study method does have an effect on students' Higher Order Thinking skills or not.

All lessons were planned depending on the school's schedule, curriculum and English textbooks students studied with and included the highest levels of Bloom's Taxonomy.

Results and discussion
Part I
In the second part of the findings section the ways which were used to respond to the needs of mixed ability learners for adapting HOT activities in the class are discussed.

Firstly, it is necessary to discuss the findings of the diagnostic lesson. The diagnostic lesson served as the first step in identifying needs of the 11 students involved in the research. During the following lessons, the lesson plan, which emphasized HOT activities, was adapted according to the needs of learners. At this stage observer pre-service teachers were not involved in the course of lesson planning. As the teacher was not familiar enough with the class, HOT activities were rather simple and were allocated less time to. First HOT activity of the diagnostic lesson asked students to guess the topic of the lesson, which was natural disasters, from the video and draw a mind map to show what they associate with this topic. The HOT activity was chosen because it was a warm-up that was supposed to respond to the needs of learners with different learning styles as videos appeal to both visual and auditory students' needs. However, because of the technical problems sound quality was low and students used their books to find the answers. The second activity, identifying countries prone to different natural disasters on the map, was chosen to develop students' analyzing skills. The issue observers noticed with this activity was that in most mixed level groups the stronger students were doing the work. In the third activity where students need to guess the title of the text a similar problem as in the first activity was faced. In the last HOT activity of the lesson students were asked to come up with another title for the story. Some low ability students struggled to come up with a title. By the end of the diagnostic lesson following learner needs were identified:

- Need to encourage self organization
- Need for different interaction patterns
- Need for extra scaffolding
- Learning styles

The first lesson was planned together with the observer pre-service teachers taking into consideration previously identified needs. Students were asked to create sentences using the new grammar point. As a response to their need for different interaction patterns this activity was done individually. However, according to the observation half of the class was still not engaged. Therefore, different interaction patterns were to be added in the next lesson plan. The students were most engaged in the last activity where they drew a picture for the title of the text. The engagement in the last activity showed that such kinds of HOT activities respond to the educational needs through considering different learning styles. The following lessons were planned in the way that took into account observations of the pre-service teacher researchers and allowed them to involve most students into HOT activities.

By the end of the series of observed lessons including HOT activities, we found out that the ways, which helped to involve most students into HOT activities responding to their learning needs were as follows:

Grouping students in the way that groups included the students with the same level of language command, which allowed us to scaffold struggling students more;

Using more HOT activities appealing to visual and kinesthetic learners, as in the process of observation it was found out that most students have these learning styles;

Allowing more thinking time for individual and discussion time for group work;

Scaffolding struggling students, for example supplying them with extra materials, such as options to choose from or reference materials, explaining the activity in a different way, or using L1.

Part II

The results will be presented in two main points addressing the main research questions.

Firstly, the influence of the LS model on HOT integrated EFL classrooms will be discussed.

Findings of the Diagnostic Lesson:

Observation

The observations were conducted according to two aspects. 11 students participated in the study.

Activities	Timing	Engaged	Finished the task on time
Task 1: Guessing the topic of the lesson	10 mins	11	0
Task 2: Analyzing the information and applying it	10 mins	9	9
Task 3: Guessing the topic of the text	1 min	11	11
Task 4: Coming up with another title for a story	2 mins	7	0

Table 1. The diagnostics lesson observation results

Despite the fact that all students were actively trying to find out the topic of the lesson, none of them succeeded. During the second activity, most students were engaged, except two students who were less active and also struggled to finish the task on time. Task 3 was the one students less struggled with, and, on the contrary, any student could not complete Task 4 on time.

During the observation, teachers used the checklist to take notes. The observation findings are divided into positive and negative comments:

The teacher was active and spent a lot of energy on keeping good classroom dynamics, explaining the tasks, and giving feedback for students. She monitored learners during the whole lesson. The warm up and starting the lesson with film were effective.

Nevertheless, the listening task was challenging for students that they could not complete it. Despite the activity being very engaging, the technical issues prevented it from being completed successfully. Some of the grammar points were unfamiliar to students that caused misunderstanding. Some students completed tasks really fast while others slowed-down and spent more time. Teacher talking time was more than student talking time.

Taking into consideration survey results from students and post-lesson discussions some changes and revisions were made. Except for the mentioned data, there were some more important moments that were necessary to take into consideration to foster better learning such as:

- asking students to close their books before giving tasks where they had to guess the topic in order to prevent them from resorting to help of the textbook;
- telling the students to listen attentively, while one group was presenting their

ideas, and then ask questions and give feedback, which corresponds to one of the highest stages of Bloom's Taxonomy-Evaluation;
- reducing teacher talking time/teacher domination as it puts students into a passive position;
- arranging students' seats so that students of similar levels could work together in order to prevent stronger students from dominating weaker ones;
- checking the materials and technical devices beforehand so there will not be a problem while conducting an activity;

Findings of the First Lesson: 1.Observation

Activities	Timing	Engaged			Finished the task on time		
		High/4	Medium/ 3	Low/ 4	High/ 4	Medium/ 3	Low/4
Task 1: Presenting the Project	10 mins	4	3	3	yes	no	no
Task 2: Creating sentences with the right tenses	5 mins	2	2	3	4	3	3
Task 3: Writing a story and evaluating the information	7 mins	3	3	3	4	2	2
Task 4: Drawing a picture	5 mins	4	3	4	no	yes	no

Table 2. The first research lesson observation results

Even if most students were engaged in the projects, Task 1 took a longer time than it was expected: teams of average and low-achieving students overused the time. On the contrary, making up sentences according to pictures appeared to be less engaging, but except one low- achieving student, everybody could finish it on time. During Task 3, the class dynamic was high, however, time was enough to accomplish the task for only 8 students. Similarly, in spite of the engaging activity, only one team finished Task 4 on time.

After the lesson, observers discussed the raised issues and aspects that worked well during the diagnostic lesson. The comments and suggestions were considered in the first lesson. The teacher spent less time on explaining tasks and raised issues letting students talk more instead. The students were divided according to their levels which made the lesson observation process more available and convenient. There were not any technical problems as everything was checked beforehand. Almost all tasks were engaging enough for students as their ages and interests were taken into consideration. The teacher used gestures and demonstrated difficult tasks by scaffolding them. She tried to use an inductive way of teaching grammar by eliciting past tense forms from the learners. Moreover, she used different visual aids that made the lesson more colorful.

However, listening and reading skills were neglected. The time limit was not followed which resulted in not finishing all planned activities in the lesson plan. The time that is given for students to copy the new material and revision was not sufficient.

Interview

Q1: Which activity was the easiest/most difficult? Why?

Creating the sentences with the right tenses according to the pictures was the easiest task for many to complete as the teacher demonstrated the sample sentence

first. On the contrary, making up their own story with some false information about themselves was the most challenging. The reason was that some of the past forms were still unfamiliar for some students. Others replied that they did not fully understand the instructions of the task. Some learners claimed that there were many unknown words so it made it difficult to understand the meaning of the text.

Q2: Which activity was the most interesting/uninteresting? Why?

Task 4 along with Task 1 were the ones that students enjoyed the most. These tasks involved creativity so that students asked to present the result in the forms of pictures and videos.

S2: "Teacher used different visual materials in activities and it was fun to do them"

On the other hand, sentence creation with given pictures, and the right grammar points did not motivate learners as it did not require much thinking.

S3: "Sentence creation was boring because everything was ready, we just put words as the teacher showed us in the beginning."

Q3: What skill did you improve?

Some of them enjoyed an inductive method of teaching while others liked to speak in front of the class.

S4: "We usually do not guess the grammar forms as teachers explain it themselves, but finding it myself made me think deeper and understand it better".

S5: "I enjoyed standing up in front of my friends and presenting our project."
Q4: Compared to the previous lesson, was it easier to do such tasks?

Task 2 and Task 3 were easier to complete, as they did such tasks before. However, students admit that it was more difficult to do Task 1 and Task 4 as they did not have experience of doing group projects and reflecting on the story.

All the mentioned data above was considered by observers and the teacher then the following suggestions were given to improve the next lesson quality:

- following the time limit so to have time for all planned activities as students spent more time on Task 1, they could not do the last task;
- removing mobile phones from students during the lesson as it distracted the attention of some students;
- checking if each student fully understood the task instructions;
- giving more tasks on creating skills, like projects;
- using visual aids in all following lessons, as it motivates learners more;
- considering some simplification in some activities; Findings of the Second Lesson

Observation

All students successfully completed the first task on time and some of them even earlier. However, during writing a different ending to a story, although most proportion were actively participating in the group work, still one student in a medium levelled group and two low- levelled students were not engaged in the process. Nevertheless, two groups could still finish the task in the given time. The third task was pair work, and while high and low-levelled students were divided by two, medium-levelled three students worked together. Even though all pairs/groups

finished the task on time, one student was rather passive. The last task was to write a whole new story, and no group was able to complete it by the end of the lesson, so it was assigned as homework.

Activities	Timing	Engaged			Finished the task on time		
		High/4	Medium/3	Low/4	High/4	Medium/3	Low/4
Task 1: Guessing the meanings of new words from context	10 mins	4	3	4	yes	yes	yes
Task 2: Writing a different ending for a story	10 mins	4	2	2	yes	yes	no
Task 3: Preparing a roleplay	5 mins	4	3	3	4	3	4
Task 4: Writing a story	7 mins	3	3	4	no	no	no

Table 3. The second research lesson observation results

In the beginning of the lesson, taking into consideration the results of previous reflections, students were asked to remove their phones and it made them independent from their devices. Also, before students started working on their tasks, the teacher made sure they understood the instructions, and sometimes, there was a need to explain the instructions several times or translate into students' native language. Since most tasks were designed for creating, the lesson passed at a rushed pace, and students barely finished the activities on time, except the last task which they could not finish at all.

Compared to the First lesson, students had more fun and were more active. The teacher could organize group works and pair works effectively. The class dynamic was high and students were more motivated to complete tasks compared to previous lessons.

Interview

Q1: Which activity was the easiest/most difficult? Why?

Guessing the meanings of new words relying on the text seemed to be the easiest task for students, because they were already familiar with some of them. They did not find any activity to be difficult, but comparatively, they struggled the most with the last task:

S1A: "I didn't have any ideas and the given time was not enough."

S2L: "It was difficult to write it in English, because we didn't know the translations of some words."

Q2: Which activity was the most interesting/uninteresting? Why?

Even though they spend relatively more time on the second activity, some students found it the most interesting, while some of them told that they enjoyed all of them.

S3K: "Everything was good. I liked all the tasks."

Q3: What skill did you improve?

Generally, they felt that they improved their writing skills, as there were many tasks for writing.

Q4: Compared to the previous lesson, was it easier to do such a task?

Most of them said that they had done such tasks before, and there was little improvement. After analyzing the results of the third lesson following improvements were introduced:

- to vary the tasks;
- to give more time for activities, that include creating.
- to include whole class activities.

Findings of the Third Lesson 1.Observation

Activities	Timing	Engaged			Finished the task on time		
		High/4	Medium/3	Low/4	High/4	Medium/3	Low/4
Task 1: Analyzing the events in the video and creating rules	10 mins	4	3	4	yes	yes	no
Task 2: Creating sentences with correct tenses	5 mins	3	3	3	yes	yes	yes
Task 3: Preparing a roleplay	10 mins	4	3	4	yes	yes	yes
Task 4: Creating stories based on pictures	6 mins	4	3	3	4	3	2
Task 5: Evaluating peers' works	3 mins	4	3	4	4	3	3

Table 4. The third research lesson observation results

In spite of a group of low-levelled students who could not finish the task on time, everybody in the class was engaged. Nevertheless, creating sentences with right tense forms was less interesting for learners, but all teams completed the task on time: a team of high-achieving students finished it even earlier. Task 3 was the most successful activity among others that students actively participated in and finished right on time. However, half of the low-achieving learners failed in creating a story based on pictures. Learners worked individually first and then in pairs. Finally, students evaluated peers' work: they found it engaging to listen to each other's stories and almost everybody could give feedback except one low-achieving student.

The lesson was better than the previous ones: all mistakes were corrected. Moreover, there were a variety of tasks and more activities for the whole class. The time limit was also strictly followed, and this enabled students to finish all the tasks by the end of the lesson.

Showing moments from the famous films engaged students and motivated them to study further. The starting activity was successful. The stories were funny so students listened to each other carefully. They mainly liked the teacher's support, explanations and monitoring the class. The tasks were not similar to what they do in their English classrooms. Many of them wanted to have such lessons again.

Interview

Q1: Which activity was the easiest/most difficult? Why?

The least challenging activity for students was assessing each other, because they had a rubric which they used to evaluate their peers. There was not any activity that they particularly struggled with.

Q2: Which activity was the most interesting/uninteresting? Why?

Most students believed watching a video and figuring out the grammar and writing a story were the most interesting tasks, since they included visuals. Nevertheless, the least enjoyable one was making examples with the new grammar:

S1: "I like it when there are pictures and videos rather than just a text."

Q3: What skill did you improve?

At the beginning, activities which required creativity and fantasy were not as welcomed as it was during the fourth lesson, because despite already existing experience, they still struggled to do such tasks. However, after doing it several times, most of them saw a little improvement.

S1: "I think now I can do it quicker, and when we have to create stories, I have more ideas." *Q4: Compared to the previous lesson, was it easier to do such a task?*

Since the types of tasks were quite repetitive, students felt it became a bit easier for them to complete them.

S2: "We did such tasks in previous lessons but in another context. It was easier to do them this time."

Q5: Do you feel that these activities are more helpful than traditional ones? (Retelling, repeating)

Most students (9/11) admitted that they enjoyed research lessons more than traditional lessons. They concluded that learning grammar rules and new vocabulary became easier and more fun, tasks were more engaging and lessons based on improving HOT skills motivate them to study more.

In this study, three LS cycles were conducted and analyzed. The results were concluded depending on observations of three pre-service teachers and students' opinions. To improve the study lessons presented throughout this paper, the main data was collected from observation and interview results.

The research aimed to answer two main questions such as the ways of responding to learner needs when providing HOTS activities; and how the results of Lesson Study approach affect the improvement of students' Higher Order Thinking Skills. The findings suggest that Lesson Study results influence students rather positively. It enables students to be aware of their own learning, since through doing HOT tasks which require critical thinking they explore and analyze how to complete similar tasks and what kinds of skills are needed in order to do that. In the beginning, students needed more time to finish the tasks, however after doing already familiar types of tasks they finished them with automatism. Also, the observation results helped pre-service teachers to understand nuances of conducting a lesson and reflect on them, since observing students' reactions helped to figure out better learning conditions, thus the factors that prevented students from using HOTS were eliminated. For example, after the diagnostic lesson, students were divided into groups according to their levels in order to prevent domination. Moreover, interview answers showed what kinds of activities are interesting for students, which contributed to better understanding of the types of tasks necessary to increase students' motivation. Except such comparatively major aspects, there were some details noted during the observation, which were exclusively helpful. These were the factors that were the most surprising, since despite its minority, had a significant effect on students' learning. Closing the books, making sure the technological devices were working well, and the teacher collecting students' phones can serve as an example.

Conclusion

As Dudley (2016) states, the Lesson Study model is beneficial for improving teaching quality and as a result fostering students' learning. Our research has also shown the positive effect of Lesson study on students' performance at English lessons, which shows that the use of this model is beneficial in Kazakhstani classrooms as well.

Nowadays Kazakhstani education is experiencing changes aimed at achieving global standards. Due to this fact many schools are concerned with bringing 21st century skills, particularly HOTS into the classrooms. However, not all the teachers are aware of the importance of HOTS and those who are aware in most cases do not know how to promote HOTS in the classroom. Lesson study model is very helpful in this case for understanding and catering for students' needs, which in turn may help develop students' HOTS.

According to our observations there is still a lot to be done in this respect in Kazakhstani schools, so that teachers would develop skills of analyzing their teaching and learners' learning to bring quality into the classroom and reach global standards in education. Our research is a humble contribution to this process.

A 40-minute time limit which was given to each lesson was not enough as a teacher was to conduct not only several HOTs activities but also include 'LOT' tasks from students' books. Besides, there was no freedom in choosing lesson topics, as teachers had to follow the topics from the handbook due to it being a part of the school policy. Furthermore, the language levels of the students were not enough to understand some of the classroom instructions that resulted in spending more time on explaining the tasks. Another challenge was to get all students to stay after the study lesson for giving feedback and taking an interview as sometimes they did not have free time because of the workload. Researchers of this study believe that support from in-service teachers is essential as they are more experienced, nevertheless, there was not an opportunity to get an interview/feedback from in-service English teachers.

Supplementary studies on LS approach are needed to explore the benefits and barriers for pre- service teachers while conducting study lessons. In further researchers, participation and integration of pre-service and in-service teachers should be examined due to its positive impacts on the professional development of pre-service teachers. There is a need for investigating other HOT activities through the LS model for high and primary school students considering their educational needs.

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ОРТА МЕКТЕП ОҚУШЫЛАРЫНЫҢ ЖОҒАРЫ ДЕҢГЕЙДЕ ОЙЛАУ ДАҒДЫЛАРЫН LESSON STUDY НӘТИЖЕЛЕРІ АРҚЫЛЫ ДАМЫТУ

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Аңдатпа. Қазіргі таңда қазақстандық білім беруде әлемдік стандарттарға жетуге бағытталған өзгерістер орын алуда. Сыни тұрғыдан ойлау, шығармашылық ойлау және проблемаларды шешу XXI ғасырдың ең маңызды дағдыларына айналды. Бұл зерттеуде «сабақтарды зерттеу» нәтижелері қазақстандық орта мектеп оқушыларының жоғары деңгейлі ойлау дағдыларын дамытуға көмектесе ме, жоқ па, соны түсінуге әрекет жасалды. Осылайша, көптеген мектептер сыныпқа XXI ғасыр дағдыларын, әсіресе жоғары деңгейдегі ойлауды енгізуге мүдделі. Дегенмен, барлық мұғалімдер жоғары деңгейлі ойлаудың маңыздылығын түсінбейді, ал түсінетіндер көп жағдайда HOTS-ті сабақта қалай насихаттау

керектігін білмейді. Бұл жағдайда сабақты оқыту моделі оқушылардың қажеттіліктерін түсінуге және қанағаттандыруға өте көмектеседі, бұл өз кезегінде оқушылардың жоғары деңгейлі ойлауын дамытуға көмектеседі.

Мақсатқа жету үшін екі жоба сұрақтары құрылды. Біріншісі ағылшын тілін үйренуші оқушылардың біліми қажеттіліктерін жоғарғы деңгейде ойлау тапсырмаларымен қамтамасыз етудің жолдарын анықтауға бағытталса, ал екіншісі 'сабақ зерттеу' әдістемесінің қаншалықты жоғарғы деңгейде ойлау қабілеттеріне әсер ететіндігін зерттеуге бағытталған. Зерттеу жұмыстары барысында 'сапалық' мәліметтер жинау үшін сабақты бақылау және қатысушылардан сұхбат алу тәсілдері қолданылды. Нәтижелер бойынша 'сабақ зерттеу' тек оқушылардың жоғарғы деңгейде ойлау қабілеттерін дамытып қана қоймай, сонымен қатар ұстаздардың және келешек ұстаздардың кәсіби дамуына да септігін тигізетіндігі анықталды. Осы зерттеу жұмысы Қазақстанда 'сабақ зерттеу' әдістемесі арқылы жасалған санаулы жұмыстардың бірі болып табылады және де бола шақта мұғалімдерге оқушылардың жоғарғы деңгейде ойлау қабілеттерін жетілдіруге бағытталған сабақтарды дайындау жолдарын табуға көмектесе алады.

Тірек сөздер: орта мектеп, мектеп оқушылары, жоғары деңгейлі ойлау дағдылары, сабақты зерттеу, жоғары деңгейлі ойлау, ағылшын тілі, бақылау, сұхбат

РАЗВИТИЕ НАВЫКОВ МЫШЛЕНИЯ ВЫСШЕГО ПОРЯДКА У УЧАЩИХСЯ СРЕДНЕЙ ШКОЛЫ С ПОМОЩЬЮ РЕЗУЛЬТАТОВ LESSON STUDY

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Аннотация. В настоящее время в казахстанском образовании происходят изменения, направленные на достижение мировых стандартов. Критическое мышление, творческое мышление и решение проблем стали самыми необходимыми навыками XXI века. В этом исследовании была предпринята попытка понять, могут ли результаты «исследование уроков» помочь развить навыки мышления высшего порядка у казахстанских учащихся средних школ. В связи с этим многие школы заинтересованы в том, чтобы привнести в классы навыки XXI века, особенно мышления высокого уровня. Однако не все учителя осознают важность мышления высокого уровня, а те, кто осознает, в большинстве случаев не знают, как продвигать HOTS в классе. В этом случае модель изучения урока очень полезна для понимания и удовлетворения потребностей учащихся, что, в свою очередь, может помочь развить мышления высокого уровня учащихся.

Для достижения этой цели были поставлены два исследовательских вопроса. Первый заключается в определении способов удовлетворения потребностей учащихся при изучении английского языка для развития мышления высокого уровня, а второй – в том, как методология «исследование урока» влияет на развитие вышеупомянутых навыков. В исследовании использовались методы наблюдения за уроками и интервью для сбора «качественных» данных. Результаты показали, что «исследование уроков» не только развивает навыки мышления высокого порядка у учащихся, но также способствует профессиональному развитию учителей и будущих учителей. Это исследование является одним из немногих, которые проводились в Казахстане с использованием методологии «исследования уроков» и могут помочь учителям найти способы подготовки уроков, направленных на улучшение навыков мышления высокого уровня учащихся.