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APPLYING PROJECT-BASED LEARNING PRINCIPLES ON BLENDED LEARNING CLASSROOM: STUDENTS' PERCEPTION

Abstract. In recent years, there has been a push towards innovative methodologies of English language teaching including blended learning approach and project-based learning (PBL). However, there is a lack of both training of teachers and research on blended learning in Central Asian higher education institutions. This case study takes place in the department of Engineering with first and second-year students attending English for professional purposes at the University of Suleyman Demirel. "Schoology" was chosen as a platform for blended-learning (learning management system (LMS) and "WebEx" for online learning platforms. The aim of the study is to explore students' perceptions of blended learning and understand its effectiveness in employing project-based learning. Aspects of PBL were implemented as a methodological tool including challenging problems, sustained inquiry, authenticity, student voice and choice, reflection, critique and revision, and public product. The study is action research which includes a survey consisting of both Likert scale and open-ended questions; informal observation of students during face-to-face classes and group work activities and content analysis of students' reflections and self-reports were used to triangulate data.

Keywords: Blended Learning, Project-Based Learning (PBL), online education, educational platforms, students' perception, self-reflection.

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Аннотация. За последние годы наблюдается рост развития инновационных методологий в преподавании английского языка включая подход смешанного образования, а также проектного обучения. Однако, в Центрально-Азиатских высших учебных заведениях наблюдается недостаток практики в подготовке учителей в преподавании смешанного образования, а также недостаток исследований в смешанном обучении. Данное аргументационное исследование проводится на факультете инженерии, где студенты первого и второго курсов,изучают профессиональный английский в университете Сулейман Демирель. "Schoology" была выбрана в качестве платформы для смешанного обучения (система управления обучения (СУО)), а также WebEx для онлайн-платформ обучения. Целью данного исследования является изучение принятие студентов смешанного обучения и выявления

эффективности данного обучения в использовании проекта. Аспекты Проектного обучения были реализованы как методологический инструмент, включающий в себя сложные проблемы, устойчивые запросы, аутентичность, выбор и голос студента, критика, рефлексия, а также общественный продукт. Для триангуляции данных использовались открытые вопросы, неформальное наблюдение за студентами во время индивидуальных и групповых заданий, а также анализ размышлений и самоотчетов студентов.

Ключевые слова: смешанное обучение, проектное обучение, онлайн обучение, образовательные платформы, восприятие студентов.

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Аңдатпа. Соңғы жылдары ағылшын тілін оқытуда инновациялық әдістемелердің, оның ішінде аралас оқыту тәсілін, сонымен қатар жобалық оқытуды дамытудың өсуі байқалады. Сонымен қатар, Орта Азияның жоғары оқу орындарында аралас оқытуды мұғалімдерді даярлау тәжірибесінің жетіспеушілігі, сондай-ақ аралас оқыту бойынша зерттеулердің жоқтығы байқалады. Бұл зерттеу инженерия факультетінде өткізіледі, бірінші және екінші курс студенттері Сүлеймен Демирел университетінде кәсіби ағылшын тілін оқиды.

Бұл зерттеудің мақсаты студенттердің аралас оқытуды қабылдауын зерттеу және жобаны қолдану кезінде осы оқытудың тиімділігін анықтау. Жобалық оқыту аспектілері күрделі мәселелерді, тұрақты сұраныстарды, шынайылықты, оқушылардың таңдауы мен дауысын, сын, рефлексияны, сонымен қатар қоғамдық өнімді қамтитын әдістемелік құрал ретінде жүзеге асырылды. Деректерді триангуляциялау (triangulation method) үшін, ашық сұрақтар, жеке және топтық тапсырмалар кезінде студенттерді бейресми байқау, сонымен қатар оқушылардың ойлары мен өз есептерін талдау пайдаланылды.

Түйін сөздер: аралас оқыту, жобалық оқыту, онлайн оқыту, білім беру платформалары, оқушылардың қабылдауы.

Introduction

The paper presented the successful experience of blended learning courses applying Project Based Learning and supported by the Learning Management System as Schoology. The whole course was supported by e-tools. Schoology was one of the bridges that were used to support and foster interaction, negotiation between teacher and students. At the same time applying PBL into blended learning was to develop students' 21st-century skills. The following emphasized collaboration, communication, critical thinking skills, technology literacy, flexibility, creativity, and information literacy.

Online Education

The system of online education is giving equal and significant opportunities for school and university students, disabled and inclusive people, unemployed, civil, and military people to get an education and information from different parts of a country and world. Nowadays, the online education system evolves intensively. Therefore, increasing competition in the labor market is due not only to the demographic factor but also to the intensive growth of the tendency of replacing people by robots. As a result, it is not enough to have only one qualification in a single sphere; people have to develop themselves permanently. Consequently, the system of online education helps to get useful knowledge in any part of the world (Brian, 2012).

The perspectives of online education are explained by many beneficial factors in front of other types of education. The most beneficial factors are flexibility and accessibility. People are able to achieve any study program from their houses or place they are at, having an Internet connection. Online education substantially reduces financial factors and on the other hand, keeps time for both teacher and students. All we need for online education is a good internet connection, device, and convenient learning management system.

As for now, online education is a new, progressive type of learning which has occurred in the third decade of the XX century due to new technological inventions and opportunities. Many countries have established the development of online education as a prior trend lately and provide a meaningful part of the budget. "According to the statistics, more than 300 universities offer online education in the USA. Based on the study of Valentine, 57% of American instructors regard online education as inferior to traditional lessons" (Valentine, 2010, p.101).

Blended Learning

There are a variety of types of learning online. Nowadays different online types of learning are applied to the educational processes. Blended learning itself has a variety of types. At the beginning of the current study, different types of blended learning were considered and studied. Therefore, one of the most appropriate strategies have been chosen, as the study applies a Project-Based Learning (PBL) technique, it is better to follow the "Project-Based Blended Learning" (PBBL). PBBL has become the most convenient for the current study. It includes both face-to-face instruction and collaboration to design, iterate, and publish PBL assignments, products, and related artifacts, and online learning in the form of the course (Lamb, 2001).

The study uses blended learning as a tool for supporting the educational process and developing students' digital literacy, 21st-century skills. Make students able to communicate, negotiate, and conduct conscious discussions, be able to study themselves, to understand and discover their real abilities (Lamb, 2001).

Blended learning environments include traditional face-to-face instruction with online educational materials. The definition of blended learning developed by Graham and Friesen (2000), involving "co-present element and computer-mediated element. The term blended learning has become popular during the past few years (Lamb, 2001).

"The concept of blended learning is rooted in the idea that learning is not just a one-time event—learning is a continuous process. Blending provides various benefits overusing any single learning delivery medium alone" (Singh, 2011, p. 54). Therefore blended learning benefits for teaching and learning processes. As for teachers, it gives opportunities and freedom for presenting learning materials. The teacher is able to distribute the materials during face-to-face lessons and another half can share with students individually through the internet.

Secondly, blended learning provides teachers with flexibility and freedom in assessment and control. The teacher has an opportunity to conduct online quizzes, establish assignments and tests, even final examinations. Thus blended learning benefits for both teacher and student. The teacher has more time for evaluating the student's work and the student has an opportunity to do self-study in any place and time.

From the view of online education, blended learning provides flexibility in creating an educational process. As for any method, blended learning has its own drawbacks. In the same vein, Garrison and Kanuka (2004) mentioned the following disadvantages:

- unprepared informational-education environment in high institutions (p. 96)
- lack of convenient approach to teaching in the digital sphere (p.98)
- insufficiency provides online learning materials (p.101)
- lack of consciousness about perspectives and necessity in use (p.102) (Garrison & Kanuka, 2004).

Blended learning programs may include several forms of learning tools, such as real-time virtual collaboration software, self-paced Web-based courses, electronic performance support systems (EPSS) embedded within the job-task environment, and knowledge management systems. Blended learning mixes various event-based activities, including face-to-face classrooms, live e-learning, and self-paced learning. This often is a mix of traditional instructor-led training, synchronous online conferencing or training, asynchronous self-paced study, and structured on-the-job training from an experienced worker or mentor (Singh, 2011).

Blended learning plays a vital role in the modern education system. It proves that students and teachers need extra communication and support in education besides traditional methods. Students are needed to be provided with online course instructions. The study of the Federal Institute of Education,

Science, and Technology of Paraiba conducted the study about applying Project-based learning into blended learning. There were investigated the relationship between active learning methodologies, such as Project-based Learning and blended learning, and students' motivation and engagement. Teachers and instructors had an opportunity to guide students and give instructions of the course based on Board Diaries, giving them suitable feedback (Dias, Gabi & Souza, 2014).

Online educational platforms

As online education becomes popular among educators, thus there has been created a variety of different education platforms and learning management systems. The University provides teachers and students with institutional subscriptions or several educational platforms. The authors used WebEx as a tool for the online part of blended learning. The WebEx platform was developed by the American company Cisco WebEx. It allows users to connect with video calls, share the screens In addition, teachers are able to choose the platform to use for the lessons themselves. Thus, teachers have examined different platforms and have chosen the most appropriate and flexible in use, which is called WebEx.

Schoology Learning Management Platform (LMS)

The study applies to a platform that helped in transferring grades, quizzes, discussions, and collaborations online among students as a part of the project learning. The platform was chosen based on the local teachers' experience; also the workshop about "Designing Teacher Education & Professional Development for the 21st Century" was conducted on how the Schoology, chosen platform, works by Denneille K. Luke. The presented platform counts as the most suitable in use for students, taking into account their interests, preferences, and skills.

The Schoology platform was designed by Jeremy Friedman, Ryan Hwang, and Tim Trinidad while still undergraduates at Washington University in St. Louis, MO Originally designed for sharing notes, Schoology was released commercially in August 2009 (Conte & Henry, 2011). Schoology is a social networking service and virtual learning environment for K-12 school and higher education institutions that allow users to create, manage, and share academic content (Conte & Henry, 2011). The Present learning management system connects students, content, and learning process.

Researchers from the University of Alicante in Spain conducted a study on the topic "Schoology as an alternative to traditional teaching tools for university students" (Sanchez Garcia et.al, 2018). The researchers indicate that the platform Schoology is a tool developing as a free educational platform for the work of LMS (Learning Management System), more practical and advantageous. Likewise, Schoology as a learning management tool open for providing teaching resources and materials, also to organize, evaluate, and assess the learning process. In accordance with creators of the Schoology, they emphasize one of the most significant advantages, the platform provides an

opportunity of knowing the individual needs of the students, in such a way that the teaching-learning process is more fitting to the student's needs (Rahman, Ghazali, & Ismail, 2011).

As for interface design, it is considered as completely attractive and simple in use. It was closely designed as a social networking platform in terms of discussion forums, participation, and feedback. Those advantages positively influence students' attitudes, motivation, and interest in learning subjects. The Schoology also has provided users with the opportunity of controlling the time of the taken quiz and assignment, also it has the possibility to control activities with the help of statistics section through that teachers are able to check the last connection, attempt, the duration of the time they spend on completing the activity.

Project-Based Learning

Project-Based Learning (PBL) is a dynamic classroom that involves student-centered learning in which students practice their knowledge deeper and explore real-world problems and challenges. Project-based learning (PBL) has a lot of potential to enhance 21st-century skills and engage students in real-world tasks (Bell, 2010; Han, 2015). In accordance with Thomas (2000), PBL is a model, organizes learning around projects. In addition, PBL is defined as an interdisciplinary, student-centered activity with a clearly stated project outcome (Bell & Han, 2015). PBL is characterized by students' autonomy, constructive investigations, goal-setting, collaboration, communication and reflection within real-world practices (Kokatsaki, 2016).

Gold Standard PBL

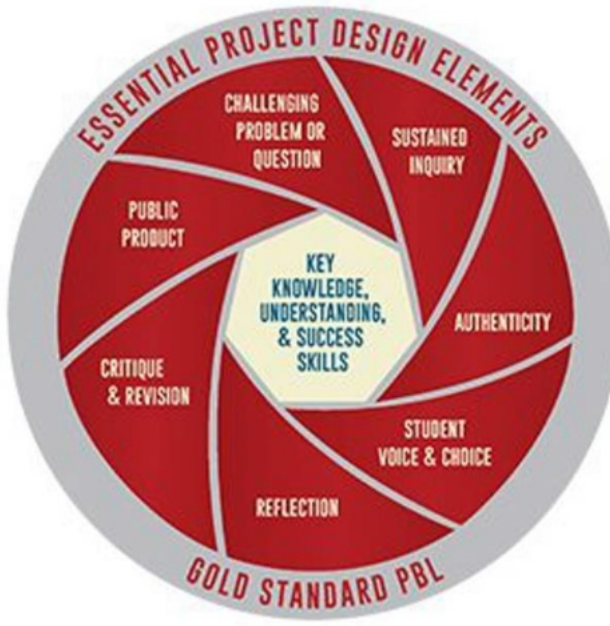

Figure 1. John Larmer's (2015) Gold Standard's of the Project-Based Learning (PBL)

The term Gold Standard is used in many industries and spheres in order to indicate or emphasize the quality of the work and product. According to the study of John Larmer, there are three significant parts of Gold Standard: 1. Student Learning Goals (in the center of the diagram below) 2) Essential Project Design Elements (shown in the red sections of the diagram), and 3) Project Based Teaching Practices. (John Larmer, 2015).

Student Learning Goals - preparing students for successful work and life experience.

Key Knowledge and Understanding - make students learn an important part of the content standards, concepts, academic disciplines. Learn how to apply knowledge into the real world, be able to solve problems, be ready to solve complex questions, and create gold standard public products.

Key Success Skills - are also known as 21st-century skills. As for now, 21st-century skills, such as critical thinking, problem solving, teamwork, self-management are the most significant and beneficial skills for real-world life.

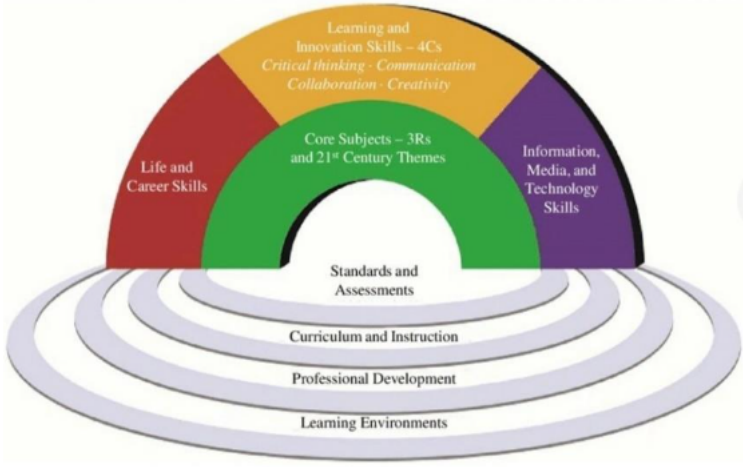

Figure 2. Charles Kivunja (2015) - 21st Century Themes

Also, the diagram shows 7 valuable parts of the Gold Standard, which is called the Essential Project Design Elements:

Challenging problem or question - make students ready to face any challenge and be able to solve it. With the challenge, the study becomes meaningful and engaging for students.

Sustained Inquiry- deep study and long time projects, that means Gold Standard. Students answer different questions to find the most suitable answer not only looking into the book but also observing, exploring, experimenting.

Authenticity - real-world learning task.

Student Voice & Choice - Students' voice and choice are important. They have an input and partial control in doing the project.

Reflection - Throughout a project, students — and the teacher — should reflect on what they're learning, how they're learning, and why they're learning

Critique & Revision - Students must be able to give and receive constructive peer feedback that will help in improving the project.

Public Product - in PBL there must be a qualitative project for the real-world which can be a solution to any authentic problem nowadays (Larmer, Mergendoller & Boss, 2015).

Conceptual framework

Action research questions emerge from areas that teachers consider problematic. As Cochrane--Smith and Lytle (1990) suggest, teachers' questions are unique because they emerge neither from theory nor practice alone but from "critical reflection on the intersection of the two" (p.6).

There are three main educational theories developed in different years of the 20th century namely: behaviorism, cognitivism, and social constructivism (Picciano, 2017). In the book "The Theory and Practice of Online Learning", Anderson (2011) examines different theories that can be efficient as the framework for blended-learning learning. He proposed the "Integrated Model" which excluded any traditional or face-to-face components and later blended models. Originally Bosch (2016) identified four types of blended-learning models using twenty-one different designs. One of Bosch's models "blending with Pedagogical Purpose", which is suggesting six components: content; social/emotional; dialectic/questioning; evaluation; collaboration/student-generated content; reflection. Anderson (2011) added several new components such as "community, interaction and self-paced, independent learning" (p. 181 in Picciano, 2017).

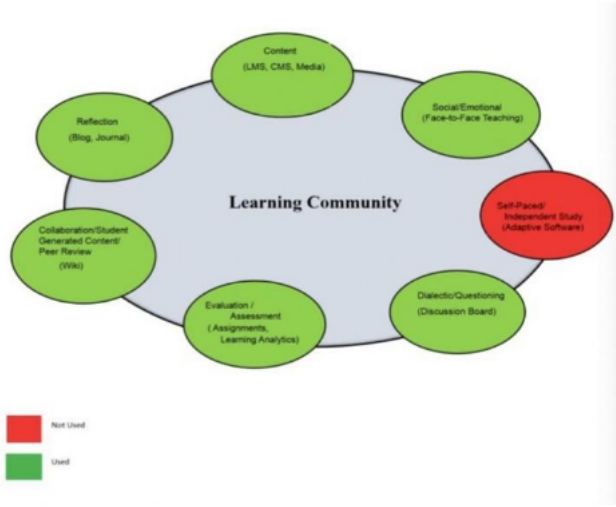

Figure 3. Applying Anderson's "Integrated Model" (2011) p-181 in Picciano (2017)

- *content* is one of the main aspects of both face-to-face and online learning. It was mostly delivered linguistically in written, verbal, visual, and technology-enhanced ways. Schoology was the main source to deliver. Also, PBL materials were widely used.
- *social/emotional support*, in other words, face-to-face interaction organized three times a week in addition to office hours.
- *Dialectic and questioning* is asking the "right question" in any stage of the learning (Picciano, 2017). Online discussion blogs and posts were embodied in each assignment and "asking a question and commenting two other classmates' posts" was a compulsory aspect.
- *Reflection* part was analyzed by PBL reflection materials as examples (pre and post reflections) reflection were written before final assessment; however, survey questions were conducted after the final assessment.
- At the beginning of the projects, teachers distributed different roles for groups such as idea generator, writer, marketer, presenter. Students had a chance to group and regroup according to their preferences and skills. Being an essential part of both the PBL principle and the conceptual component, *collaborative learning* is grouped and synthesized by content analysis.
- Schoology as LMS provided a number of opportunities to grade students' *learning progress* fast and easily. Essays, reflective papers, presentation checklists, tests, and quizzes evaluated paperless. Most importantly, most of them can be retrieved easily from Schoology's archived course lists.
- As a *community-based* learning is the essential principle of PBL, in which students' final product should be useful for a local society.
- The PBL learning process is organized as a group work, and usually, *interaction* happens only between students in their groups.
- The last component of the "Integrated Model" - *self-paced learning* was omitted from the learning process because of time frames.

Methodology

Research Question

The major inquiry question evolved from the researchers' own teaching experience: "How effective is Project-based learning in the context blended-learning approach?"

Designing the blended learning instruction

The question of what should be online and what should be face-to-face was the most important one. The decision was made according to principles of project-based learning, namely, eight weeks long instruction was coordinated as a 50/50 rule, online and face-to-face respectively. Also, each week was devoted to seven golden rules of PBL and each rule had both online and face-to-face components.

In the first week, facilitating and introducing PBL rules was prioritized. Students reported their understanding of the PBL and how the PBL can improve their presentation skills. They also watched various PBL projects and evaluated them with the help of rubrics from pblworks.org website. In the second week, using collaborative learning through discussion boards, students' inquiry on their project preferences and roles in the projects were discussed. The third week's agenda included discussion of the content through writing project proposals with students' preliminary ideas both individually and in groups. Community-based task - "interview with an expert" was conducted by students which helped them identify the "right" question and answer it. The fifth week was entirely devoted to the final products' presentation; so, students peer-reviewed each others' presentations. Employing presentation skills, students created poster presentations that lead to week seven - actual product presentation. Finally, week eight was peer and self-reflection week analyzed by reports. Each week had both face-to-face and online aspects of teaching.

Study procedure

The action research study focused on "seven golden rules of the project-based learning" and their effectiveness: challenging problems or questions, sustained inquiry, authenticity, student voice and choice, reflection, critique and revision, and public product.

To measure these aspects three types of data were collected and analyzed. A survey was given to all 190 students and 130 answers collected. The survey consisted of both Likert scale and open-ended questions. Informal observation of students during face-to-face classes and group work activities and content analysis of students reflections and self-reports were used to triangulate data.

Study results

After analysis of the data, several themes emerged including collaborative learning, time-management, teacher-student interaction.

1. *Blended-learning enhances collaborative learning.*

Questions about collaborative learning were answered with 65% of students reporting very satisfied. Also, informal observations showed that students invested their time into collaboration and community. Self-reflection reports revealed the following discourse:

"This project gave us a lot. We gained a lot of experience in the field of teaching and working with the team. This project taught us to be in unity";
"Work with the team was the most enjoyable";
"The most enjoyable part of this project is working with the team and come up own product";
I really liked the grouping process myself, I would like to have more and spend time with teammates, and I would learn more about the opinions of the students".

According to Palloff and Pratt (2000), "collaborative learning processes assist learners to achieve deeper levels of knowledge generation through the

creation of shared goals, shared exploration, and a shared process of meaning-making" (p. 6).

2. *Time-management is an important aspect of blended-learning*

Survey questions about time-management showed that 33.3% of students were very satisfied, 40% satisfied, 21% dissatisfied, 7% very dissatisfied. Several groups asked for an extension of deadlines and from observation, it was seen that projects were very ambitious.

"This topic was too hard to investigate in a few weeks. I believe that this kind of topic takes much more time than we've spent";

"The least enjoyable part of this project was when we couldn't meet much and discuss all the issues live".

3. *Guidance from the teacher and more support is imperative in blended-learning*

Teacher-student communication was the main issue in this study especially for students with little or no experience learning technical and educational. Some students wrote that they were overwhelmed by assignments and tasks. They wrote that teachers lacked guidance: *"direct on the right path, give more information etc".* Moreover, according to Hashim, Mohd and Hamzah (2013), it is important to understand teachers' attitudes towards teaching and "setting the right tone to produce good teaching and learning may not be an easy task" (p. 131).

Conclusion

Blended-learning is not merely a combination of online and face-to-face learning. Organizing and designing blended-learning includes setting correct objectives and goals, utilizing both online and traditional methodology of teaching and developing suitable assessment tools (Uwes, Basukiu & Zulfiati, 2018). Blended-learning can be effective only if it is strictly instructional (Dziuban, et.al, 2006), successful implementation is possible with the support of departments, colleges, and infrastructure. It was also crucial to receive proper support from teachers and instruction for students.

References

1 Anderson, T. *The theory and practice of online learning* (2nd Edition). Edmonton, AB: AU Press, 2011. – 421 p.

2 Bell S., Han S.Y. Online Education. *Journal of Asynchronous Learning Networks,* (2015): pp. 99-104.

3 Bell, S. Project-based learning for the 21st century: Skills for the future. The Clearing House. *A Journal of Educational Strategies, Issues and Ideas*, 83 (2), (2010): pp. 39-43.

4 Bonk, C., Graham, C., The Handbook of Blended Learning: Global Perspectives, Local Designs. CA: *John Wiley & Sons, Inc.*, (2006): pp. 190-200.

5 Bosch, C. *Promoting Self-Directed Learning through the Implementation of Cooperative Learning in a Higher Education Blended Learning Environment.* Johannesburg, SA: Doctoral dissertation at North-West University, 2016. – 296 p.

6 Cochrane-Smith, N., Lytle, S.L. Research on teaching and teacher research: The issues that divide. *Educational Researcher,* 19 (2), (1990): pp. 2-10.

7 Conte H.S., Digital Learning in an Open Education Platform for Higher Education Students, *10th International Conference on Education and New Learning Technologies*, (2011): pp. 122-139.

8 Dias, M.C., Gabi, C.F., Souza1, V.R. A Problem-based Learning Case Study for Teaching Voice over Internet Protocol – VoIP. *Using Asterisk as a Tool for Teaching VoIP for Information Technology Classes,* (2014): pp 197-203.

9 Dziuban, C., Hartman, J., Juge, F., Moskal, P., Sorg, S. Blended Learning Enters the Mainstream: In: Bonk, C., and Graham, C. (Eds.), *The Handbook of Blended Learning: Global Perspectives, Local Designs,* San Francisco, CA: John Wiley & Sons, Inc., (2006): pp 195-208.

10 Brian L. Goff, Collaborative Learning: Benefits of Online Learning. *J of Rochester University of Technology,* (2012): pp. 78-84.

11 Garrison D.R., Kanuka H. Project-Based Learning, *Journal of ScienceDirect*, (2004): pp. 95-104.

12 Hashim D., Mohd S., Hamzah D. Action Research on Blended Learning Transformative Potential in Higher Education-Learners' Perspectives. *Business and Management Research,* 1 (2), (2013): pp. 125-134.

13 Han S.Y. In-service Teachers' Implementation and Understanding of STEM Project Based Learning. *Eurasia Journal of Mathematics, Science and Technology Education* 11 (1), (2015): pp. 63-76.

14 Kenney, J., Newcombe, E. Adopting a Blended Learning Approach: Challenges Encountered and Lesson Learned in an Action Research Study. *Journal of Asynchronous Learning Network,* 15 (1), (2011): pp. 45-57.

15 Kokatsaki D. PBL: Students' perception. *Journal of ScienceDirect,* (2016): pp. 33-38.

16 Kivunja, C. Innovative Methodologies for 21st Century Learning, Teaching and Assessment: A Convenience Sampling Investigation into the Use of Social Media Technologies in Higher Education. *International Journal of Higher Education,* (2015): pp. 1-26.

17 Lamb, J. Being 'at' university: the social topologies of distance students. *Springer Link*, (2001): pp. 10-22.

18 Larmer J., (2015). Gold Standard PBL, URL: www.bie.org.

19 Larmer, J., Mergendoller, J., Boss, S. Setting the Standard for Project Based Learning: A Proven Approach to Rigorous Classroom Instruction, *Book: Learn, teach, lead:* 2015. – 238 p.

20 Sanchez Garcia, L.F., Sebastiá-Amat, S., Molina Garcia, N., Saiz Colomina S., Schoology as an alternative to traditional teaching tools for university students. *10th International Conference on Education and New Learning Technologies Palma,* (2018): pp. 8-12.

21 Palloff, R., Pratt, K. (2000). Making the transition: Helping teachers to teach online. Paper presented at EDUCAUSE: *Thinking it through*. Nashville, Tennessee. (ERIC Document Reproduction Service No. ED 452 806). URL: https://eric.ed.gov/?id=ED452806.

22 Picciano, A.G. Theories and frameworks for online education: Seeking an integrated model. *Online Learning,* 21 (3), (2017): pp. 166-190.

23 Rahman, A.K., Ghazali, S.A.M., Ismail, M.N. The Effectiveness of Learning Management System Case Study at Open University Malaysia (OUM), Kota Bharu Campus. *J. Emerg Trends Comput Inf Sci*, (2011): pp. 73–79.

24 Singh H., A Blended Learning Experience Applying Project-Based Learning in an Interdisciplinary Classroom, *Journal of Science Direct*, (2011): pp. 51-54.

25 Thomas, J.W. (2000). A review of research on project-based learning. San Rafael, CA: Autodesk Foundation. Retrieved from www.bie.org.

26 Uwes A.C., Basuki W., Zulfiati S. Determining the Appropriate Blend of Blended Learning: A Formative Research in the Context of Spada-Indonesia. *American Journal of Educational Research*. 6 (3), (2018): pp. 188-195.

27 Valentine D. Distant education: benefits, problems, and opportunities. *Elearn magazine,* (2010): pp. 54-63.