Place-Based Education: Does it Improve 21st Century Skills?

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Abstract

The present study aimed at investigating the possible significant effects of project-based instruction on the improvement of Iranian intermediate EFL learners' awareness of 21st century skills. To this end, the sample population was selected from Iranian intermediate learners studying at Zabansara Language School, Mashhad, Iran. Therefore, 50 male and female students were assigned randomly to experimental and control groups, 25 in each. For collecting the quantitative data for the study, a 21st century awareness inventory was employed to function as the pre and post-tests during the study with the aim of eliciting the learners' awareness of the aforementioned skills. Besides, a structured interview was applied within the participants of the experimental group to gather the required qualitative data by the time the treatment and the post-test were done. Regarding the treatment, a more real life class project was employed by the researchers containing some of the aims and principles of Place-Based Education, the model of the present study. Results showed that students in the experimental group could perform much better than learners in the control group after the treatment on the post-test.

Keywords: Place-based education, 21st century skills

1. Introduction

Bearing the mission of providing learners with the abilities through the help of which they can be more effective citizens in society and consequently overcome the challenges they may face in the future regarding work and life in the 21st century skills, some building blocks should receive great attention while trying to use these abilities in every program. These can be categorized as: information literacy, creativity and innovation, collaboration, problem solving, communication, and responsible citizenship (Education Connection, 2013). In addition, Partnership for 21st Century Learning (2009) supposes the idea that the best methods to practice such skills are: focusing on real-world problems and processes, supporting inquiry-based learning experiences, providing opportunities for collaborative project approaches to learning, and focusing on teaching students how to learn. With this regard, the present research investigates to find any probable significant effects of project-based instruction on the improvement of Iranian intermediate EFL learners' awareness of 21st century skills, applying some of the principles and aims of Place-Based Education.

1.1 Review of Literature

1.1.1 Project-Based Instruction and 21st Century Skills

Pearson (2013) has classified 21st century skills into three major groups: learning and innovation skills, information, media, and technology skills, as well as life and career skills. Therefore, he believes that those who are able to apply their learning to multiple situations, being effective time managers, and are socially and communicatively responsible for their behavior are considered to be literate in the 21st century. There exist some solutions to promote 21st century learning as: emphasizing core subjects, emphasizing learning skills, using 21st century tools to develop learning skills, teaching and learning in a 21st century context, teaching and learning 21st century content, and using 21st century assessments that measure 21st century skills (Partnership for 21st Century Learning, 2009). Besides, Suto (2013) in his article about 21st century skills, has mentioned some practical ways of how to develop the aforementioned skills such as: Continue with long-standing methods of teaching 21st century skills, Develop curricula covering 21st century skills explicitly, Adopt a skills-centered pedagogy in schools and colleges, Nurture 21st century skills through extra-curricular activities, Cultivate 21st century skills through independent research projects, and develop 21st century skills in the workplace (p. 18). What is worth mentioning here is that all those aforementioned skills cannot be developed by students themselves alone, and for sure teachers do play a very crucial role in generating the required skills within students (Zohar & Schwartzer, 2005). As a result, through the review of the literature, it is believed that having a more degree of effective teaching techniques can truly help the integration of 21st century skills by using student-centered methods like problem-based learning, project based and other techniques which can help students develop the needed

skills to face the challenges in their societies (Soh, Osman, & Arsad, 2012). Additionally, a study done by Andrew, DeRocco, & Taylor (2009) found that most manufacturers have viewed innovation as integral to company growth, competitiveness, and shareholder value. Regarding 21st century skills and the workplace, a study has been done through which 1,014 interviews with members of the Gallup Panel aged 18-35 years were handled (Gallup, 2013). The findings highlighted the fact that most of the skills they used at their job were developed out of the classroom. Also, collaboration, knowledge construction, skilled communication, global awareness, self-regulation, real world problem solving, and use of technology for learning were proved to be the most important 21st century skills that must be improved in order to increase the opportunities of gaining a better job.

Practitioners can make use of project-based instruction as an authentic way of putting the aforementioned skills into practice. That is an instructional model which has real world applications in which learners can plan, implement, and evaluate the project they have handled, moving beyond the school rooms. As a result, such an authentic project-based instruction contains features like (Dickinson, Soukamneuth, Yu, Kimball, D'Amico, and Perry,1998; Katz & Chard, 1989; Martin & Baker, 2000; Thomas, 1998): "student centeredness and self-directedness, a definite beginning, middle, and end, real world problems, firsthand investigation, connections among academic, life, and work skills" along with being challenging and meaningful (As cited in Railsback, 2002, p. 7). Learners benefit from this approach by allowing them to select topics that are exciting and relevant to their lives (Katz & Chard, 1989). Moreover; researches done within the past 20 years show that engagement and motivation lead to a kind of higher achievement (Brewster and Fager, 2000). "Research on the long-term effects of early childhood curricula supports the rationale for incorporating project-based learning into early childhood education and secondary education" (Katz & Chard, 1989; cited in Railsback, 2002, p. 8). Maftoon, Birjandi, and Ahmadi (2013) have conducted a study in order to investigate the relationship between project-based instruction and motivation. To this end, eighty B.A. students from Islamic Azad University and Payame Nour University took part in the study. Academic Motivation Scale, and Solomon four-group were the instruments used for collecting the data. The results proved that this kind of instruction has a positive impact on the students' level of motivation. On the other hand, it is proved that students who have got problems with the traditional methods of teaching and classrooms can benefit highly from project-based instructions (Hammond et. al., 2008). Moreover, Frazel (2010) has asserted that any preparation is considered as a research, because planning requires deeper thinking about what the project is destined to look like (As cited in Lammer, 2012, p. 27). Fallahchai (2012) maintains that teaching academic and life skills to freshmen has got a significant effect on their academic achievement. For reaching the result the researcher has gained, 170 freshmen were selected randomly, and divided into control and experimental group. The experimental group attended 35 hours of training. The data was gathered by using life skills inventory, average grade first term, and demographic questions. Project-based instruction has got the advantage of involving all students with varied backgrounds and abilities to cooperate with each other by simultaneously implementing technology tools. To achieve such a learning-oriented classroom, a great amount of teacher preparation and training is needed (Tech4Learning, 2009). Also, it has stated that working in divers groups to meet the required assessment needs, leads students to develop a more sense of leadership, self-directness, social skills, and cultural awareness. Moreover, use of project-based instruction as one of the ways of improving 21st century skills, is looked upon as a kind of reflective tool which develops a sense of trust and independency on part of learners(Rogers, 2002). Though there are lots of researches done related to project-based instruction, but yet there is not a common model of it. As a result teachers find it a little bit stressful and challenging (Thomas, 2000). Heick (2013) maintains that project-based instruction is a popular trend regarding 21st century. Also, the researcher tries to draw a distinction between projects, and project-based learning in that projects are product-based but project-based learning is concerned with the process. Consequently, he has divided project-based learning into three major categories: Challenge-Based Learning/Problem-Based Learning, Place-Based Education, and Activity-Based Learning. Game-Based Learning, Blended Learning, Flipped Classroom, and Situated Learning in his point of view are types of activities which can be done through applying project-based instruction. Also, Qu and Yang (2010) have handled "A Peer and Self-assessment Project Implemented in Practical Group Work" to decrease the negative effects of project-based instruction may have on learning when done in classrooms. It was proved that peer and self-assessment do prevent the usual problems a project may bring with itself and therefore promote clear learning.

1.1.2 Statement of the Problem

Taking the present educational system in our country into consideration, the point becomes apparent that it is mostly teacher centered and everything in the curriculum is pre-determined, without paying much attention to students' needs and problems in the society, students just go through the school text books each year without providing the opportunity for them to implement the knowledge they've acquired in their real lives. Better to say, no time is dedicated to the improvement of students' life skills and here specifically 21st century skills, a point which may happen in each and every country. As a result, this study has got the aim of investigating the significant possible effects of implementing project-based instruction in some language school classrooms to see whether they can improve the students' awareness of 21st century skills or not.

1.2 Research Question and Hypothesis

Q1. Can project- based instruction significantly affect the improvement of Iranian intermediate EFL learners' awareness of 21st century skills?

HO1. Project-based instruction has no significant effect on the improvement of Iranian intermediate EFL learners' awareness of 21st century skills.

2. Methodology

2.1 Participants and Setting

In order to gather the required data for the study, a sample population was selected from Iranian intermediate EFL learners studying at Zabansara Language School, Mashhad, Iran. The study included 50 male and female participants whose age ranged from 15 to 18. In addition, they were assigned to experimental and control groups randomly. Also, the participants' language was Farsi. Taking their homogeneity into consideration, they had all passed the same unique placement test of the aforementioned language school, with the same structured interview. Therefore, they are all at the same level of language proficiency. Moreover, the setting of the study was selected based on the accessibility of the researchers.

2.2 Instrumentation

The questionnaire developed by Ashraf, Motallebzadeh, and Arabshahi (2014) was employed in the study based on the first research question mentioned elsewhere in the study aiming at investigating the possible significant effects of project-based instruction on the improvement of Iranian intermediate EFL learners' awareness of 21st century skills. In addition, the reliability and validity of the questionnaire have been checked previously in the same study. Also, the questionnaire consisted of 50 Farsi items which was in a form of five-point Likert scale, ranging from "Always" to "Never", functioning as the pre and post-test in the study.

Regarding the qualitative means of gathering the data, a structured interview was employed within the participants of the experimental group by the researchers in classes. It did contain the following question:

• What were the most typical ways through which they interacted with each other while conducting the projects?

The obtained results were later on used in the analysis of results and more specifically the qualitative part of the study.

2.3 Procedure

By the time the participants were selected and assigned to experimental and control groups randomly, the questionnaire which was developed by Ashraf et al. (in press) was employed to act as the pre-test in order to gather the participants' awareness of 21st century skills before the treatment. They took it within 15 minutes in classes. It should be added that both the reliability and validity of the aforementioned questionnaire were checked by the same researchers previously. Later on, the researchers went through the treatment which was a project-based instruction following the aims and principles of Place-Based Education, the model of the study. Therefore, the researchers had some briefing and clarifications about the project such as the duration of the project, the dead time, how they should interact with each other, the presentations, and what they are exactly supposed to do as the pre-project stage. Besides, they were assigned to groups of three or four by the researchers and there they had to share their opinions in their groups to choose a city in Iran regarding which they had to prepare some power point slides related to that specific city's historical places, costumes, customs, and agricultural and industrial products in English. What is worth mentioning here is that, the project had an overall theme of various culture and customs around the world but more specifically in Iran, the topic of which was selected from one of their units in Interchange Book 3. Reaching to the on-project stage, the researchers acted as a member of community, helping students with some problems in case needed. Therefore, at the end of each session, the processes of the projects were checked out by the researchers and the questions and problems were solved, if any. Moving toward the post-project stage, the students were supposed to present their projects to their peers in class within 15 minutes in English using their lap tops. By the time the presentations were over, the learners provided the researchers with CDs containing their power point slides. Also, the treatment took about two weeks, six sessions. After the treatment was done, the participants took the same 21st Century Skills Awareness Inventory as the post test to see whether their awareness has significantly changed or not. At the end, the structured interview was held within the participants in the experimental groups in classes by the researchers each of which took about 15 minutes.

2. 4 Study Design

As the aim of the study was to investigate the probable significant effects of project-based instruction on the improvement of Iranian intermediate EFL learners' awareness of 21st century skills, the design of the study is a quasi-experimental one.

3. Results and Discussions

3.1 Quantitative Data

In order to come up with the results based on the research question that is whether project-based instruction can significantly improve the Iranian intermediate EFL learners' awareness of 21st century skills or not, Independent Sample T-Test was employed through SPSS Software. In doing so, the Twenty First Awareness Inventories which were taken by the participants in both groups previously as the pre and post-tests were applied. As it was mentioned previously, each question was in a form of five-point Likert scale, ranging from "Always" to "Never". Consequently, the choices were given a value of "One" for "Never", "Two" for " Seldom", "Three" for " Sometimes", " Four" for " Often", and " Five" for " Always" in order to be able to calculate the Sum score for each questionnaire or better to say learner. The results of the analysis for the pre and post-tests of the aforementioned questionnaire are shown in Tables 1 to 4 respectively.

Table 1.Group Statistics

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Sum	Control	25	172.88	14.887	2.977
	Experimental	25	173.44	15.682	3.136

Table 2. Independent Samples Test: Results of the Pre-Test for the Twenty First Century Skills Awareness Inventory

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
Sum	Equal variances assumed	.223	.639	-.129	48	.898	-.560	4.325	-9.255	8.135	
	Equal variances not assumed			-.129	47.871	.898	-.560	4.325	-9.256	8.136	

As Tables 1 and 2 reveal, which are related to the Twenty First Century Awareness Inventory taken by participants both in the control and experimental groups as the pre-tests, there is no statistically significant difference between the mean scores of participants in the experimental group as well as the control group, i.e. (Sig= .898> .05). Better to say, learners in the experimental group did not outperform the control group on the pre-test of the aforementioned questionnaire.

Table 3.Group Statistics

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Sum-post	Control	25	1.6504E2	14.31631	2.86326
	experimental	25	1.7996E2	17.93851	3.58770

Table 4. Independent Samples Test: Results of the Post-Test for the Twenty First Century Skills Awareness Inventory

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
Sum-post	Equal variances assumed	1.103	.299	-3.250	48	.002	-14.92000	4.59019	-24.14920	-5.69080	
	Equal variances not assumed			-3.250	45.749	.002	-14.92000	4.59019	-24.16094	-5.67906	

Based on the analysis shown in Tables 3 and 4 regarding the aforementioned questionnaire which was taken as the post-test this time within the two groups, participants in the experimental group outperformed more significantly than the participants in the control group, i.e. (Sig = .002 < .05). Therefore, results revealed a significant difference between the mean scores of students in the experimental group and the control group before and after the treatment.

As a result, what presented itself as a problem to the researchers right at the beginning of the study was seeing students so desirable to be as perfect as foreign youngsters are at solving all their problems, and therefore being able to manage

their own living, as well as being so great at communicating with the members in their society so early on. The on-project and the post-project steps did prove the fact to the researchers that the participants found themselves so satisfied and proud of finding themselves to be able to handle the project along with all of the pre, on, and post-project stages, developing great abilities in interacting with others and solving the problems without being dependent on others. Therefore, the null hypothesis which was proposed at the beginning of the research was rejected due to students in experimental group performing much better than students in the control group after the treatment on the post-test. Drawing attention on the other studies done in the realm of project-based instruction and 21st century skills, this research like most of the other ones all and all proved the fact that project-based instructions surly can improve students' awareness of 21st century skills, what Soh, Osman, & Arsad (2012) believed in regarding the issue that having a more degree of effective teaching techniques can truly help the integration of 21st century skills by using student-centered methods like problem-based learning, project-based and other techniques which can help students develop the needed skills to face the challenges in their societies. Besides, the quasi-experimental research which was done by Kafi et al. (2014) proved the fact that project-based instruction can improve EFL learners' awareness of 21st century skills and more particularly the interpersonal and real world problem solving ones. Accordingly, practitioners can make use of project-based instructions to develop and illicit the 21st century skills needed, and therefore, put them into practice. Also, they can make use of project-based instruction as an authentic way of putting the aforementioned skills into practice, an instructional model which has real world applications in which learners can plan, implement, and evaluate the project they have handled, moving beyond the school rooms (Railsback,2002). Besides, the present study along with the other researches done within the past 20 years show that engagement and motivation lead to a kind of higher achievement (Brewster and Fager, 2000). Also, the study handled by Maftoon, Birjandi, &Ahmadi (2013) in order to investigate the relationship between project-based instruction and motivation proved that this kind of instruction has a positive impact on the students' level of motivation. On the other hand, it was proved that students who have got problems with the traditional methods of teaching and classrooms can benefit highly from project-based instructions (Hammond et. al., 2008).

3.2 Qualitative Data

The qualitative data which was gathered through employing the structured interview contained the following question:

Q1. What were the most typical ways through which the participants interacted with each other while conducting the projects?

The results gained out of the question revealed that:

Face to face meetings along with emailing were considered as the most frequent ways through which students conducted the projects. Besides, they mentioned that unless the aforementioned ways couldn't fulfill their needs or they had to do something urgent, they tried to make phone calls and send texts.

4. Conclusion

To sum up, through the quantitative as well as the qualitative data that was gathered here, project-based learning along with its three other major categories, Challenge-Based Learning/Problem-Based Learning, Place-Based Education, and Activity-Based Learning, (Heick ,2013),can be considered as some practical means of improving EFL learners' awareness of 21st century skills, and consequently bring about life long effects of learning within students and help them enjoy and gain more out of the text books that they're presented with by placing them in groups with their friends and peers.

Due to being a novel, new area of study some parts still need further research. First, various projects with different topics can be done to illicit a variety of 21st century skills simultaneously during a course or a term of study within various fields. This may be possible using students in different levels, studying different books. Next, in regard with teachers who are considered as members of community who are expected to develop the 21st century skills within students, a cause and effect study may be useful in which some project-based instructions are applied for teachers in order to observe the point that whether they being literate in the 21st century can help their learners' development of those skills in much better ways than the other teachers or not. After all, another cause and effect study may be applied to check the level of students' awareness of the 21st century skills right at the beginning, and then move on with some project-based instructions over a course of study in order to see whether their level of awareness has significantly increased over time or not after the treatments.

This study like the others did have some limitations. Among all, I can mention the few language schools from which the data is collected (Zabansara Language School, Mashhad, Iran). Also, conducting the study just from Iranian students who are at the intermediate level who had just studied New Interchange English text book are among some of the other limitations of the research.

At the end, considering the pedagogical implications of the study, teachers as facilitators and as the ones who are considered to be members of the community are supposed to help learners develop skills through which they can be considered as effective members of their societies later on by improving the needed skills, Dewey (1897).What is worth mentioning here is that all those aforementioned skills cannot be developed by students themselves alone, and for sure teachers do play a very crucial role in generating the required skills within students (Zohar & Schwartzer, 2005). Also, the findings of Gallup (2013) highlighted the fact that most of the skills the employees used at their job were developed out of the classroom by teachers who had promoted all those survival life skills. On the other hand, EFL learners can take the advantage of these special courses regarding their future work and life in the 21st century skills by trying to

enhance some building blocks such as information literacy, creativity and innovation, collaboration, problem solving, communication, and responsible citizenship which should receive great attention while trying to use these abilities in every program (Education Connection, 2013).

References

Ahmadi, Birjandi, Maftoon, et al. (2013). The relationship between project-based instruction and motivation: A study of EFL learners in Iran.

Andrew, J.P., Derocco, E.S., & Taylor, A. (2009). The innovation imperative in manufacturing: How the United States can restore its edge. Boston: Boston Consulting Group, Inc.

Ashraf, H., Motallebzadeh,Kh., & Arabshahi, S. M. (2014). On the design, validation, and reliability of the 21st century skills questionnaire in an EFL context. In press.

Barron, B., Darling-Hammond, L., & Pearson, P. D., et al. (2008). Powerful learning: What we know about teaching for understanding. San Francisco: Jossey-Bass.

Brewster, C., & Fager, J. (2000). Increasing student engagement and motivation: From time-on-task to homework. Portland, OR: Northwest Regional Educational Laboratory.

Chard, S.C., & Katz, L.G. (1989). Issues in selecting topics for projects. Champaign, IL: ERIC Clearing house on Elementary and Early Childhood Education.

Dewey, J. (1897). My pedagogical creed. *School Journal, 54*, 77–80.

Dickinson, K.P., Soukamneuth, S., Yu, H.C., Kimball, M., D'Amico, R., Perry, R., et al. (1998). *Providing Educational Services in the Summer Youth Employment and Training Program.* Washington, DC: U.S. Department of Labor, Office of Policy & Research.

Education Connection. (2013). 21 center for 21st century skills.

Fallahchai, R. (2012). Effectiveness of academic and life skills instruction on the freshmen academic achievement. *Journal of Life Science and Biomedicine*, *2*(4),137-141.

Frazel, M. (2010). *Digital storytelling guide for educators.* Washington DC: International Society for Technology in Education.

Gallup. (2013). 21st century skills and the workplace, 1-19.

Heick, T. (2013). Three types of project-based learning symbolize its evolution. TeachTought.

Kafi, Z., & Motallebzadeh, Kh. (2014). A flipped classroom: Project-based instruction and 21st century skills. *International Journal of Language Learning and Applied Linguistics World, 6*(4),35-46.

Lammers, W. P. (2012). Digital storytelling: Building 21st century literacy skills in the secondary classroom, 1-36.

Martin, N., & Baker, A. (2000). *Linking work and learning toolkit.* Portland, OR: work systems, inc., & Portland, OR: Northwest Regional Educational Laboratory.

Partnership for 21st Century Skill learning.(2009). Retrieved from http://www.21stcenturyskills.org

Pearson. (2013). Empowering 21st century learners with results that matter. Pearson Education, Inc.

Qu, W., & Yang, S. (2010). A peer and self-assessment project implemented in practical group work. *Journal of Language Teaching Research, 1*(6),776-781.

Railsback, J. (2002). *Project-Based Instruction: Creating Excitement for learning*. North West Regional Educational Laboratory.

Rogers, P. (2002). Designing instruction for technology-enhanced learning. Hershey, PA: Idea Group Publishing.

Soh, T. M. T., Osman, K., & Arsad, N. M. (2012). M-21CSI: A validated 21st century skills instrument for secondary science students. *Asian Social Science, 8*(16), 38-44.

Suto, I. (2013). 21st century skills: Ancient, ubiquitous, enigmatic?. Research Matters: A Cambridge Assessment Publication.

Tech4Learning. (2009). Creating 21st century classrooms. Tech4Learning, Inc.

Thomas, J.W. (1998). *Project-Based Learning Overview*. Novato, CA: Buck Institute for Education.

Thomas, J. W. (2000). A review of research on project-based learning. The Autodesk Foundation, San Rafael, CA.

Zohar, A., & Schwartzer, N. (2005). Assessing 'teachers' pedagogical knowledge in the context of teaching higher-order thinking. *International Journal of Science Education, 27*(13), 1595-1620.