The Effect of Flipped Learning Pattern (FLP) in Terms of Problem-Based Teaching Approach (PBTA) on Applicants' Self-Directed Learning (SDL) Towards the English Courses

Shila Soleymani*

Instructional Technology Department, Faculty of Psychology and Educational Sciences, Allameh Tabataba'i University, Tehran, Iran.
soleymani.shila@yahoo.com

Khadijeh Aliabadi

Instructional Technology Department, Faculty of Psychology and Educational Sciences, Allameh Tabataba'i University, Tehran, Iran.
aliabadikh@gmail.com

Ismaiil Zaraii Zavaraki

Instructional Technology Department, Faculty of Psychology and Educational Sciences, Allameh Tabataba'i University, Tehran, Iran.
ezaraii@yahoo.com

Ali Delavar

Department of Assessment and Measurment, Faculty of Psychology and Educational Sciences, Allameh Tabataba'i University, Tehran, Iran.
delavarali@yahoo.com

Abstract

This study aimed to investigate the effect of the Flipped Learning Pattern (FLP) in terms of the Problem-Based Teaching Approach (PBTA) on the participants' self-management, desire for learning, and self-control in learning English. The research design was quasi-experimental using pre-test and post-test. The participants were selected via cluster sampling from the English learners enrolled in *Aladdin* center in the 2018-2020 academic year. They were randomly divided into experimental and control groups (n=320). To collect the data, the self-directed learning questionnaire of Fisher, King, and Tague (2001) was used. The questionnaire contains 52 items and three subscales of self-management, desire for learning, and self-control. Findings showed that there was a significant difference in the effect of the method on three subscales of self-directed learning in the experimental and control groups. The results indicated that the value and acceptability of the pattern improve self-directed learning; and choosing the right teaching method with conscious design will have a great impact on learners' high levels of learning English skills. Therefore, follow-up studies are necessary to investigate further the application of FLP in terms

of PBTA in various lessons.

Keywords: English Course, FLP, Learning, PBTA, SDL

*Corresponding author

1. Introduction

Language is an instrument of thought which binds human society together in communities and linguistic groups (Adebileje & Akinola, 2020), so there is an understanding between the parties involved. The language itself can make it easier for us to channel ideas, feelings, and many other things (Nishanthi, 2018). It is commonly believed that English has already become a widely used language of the world for decades. As English is the International language, acquiring its skills is needed (Jabbarova, 2020). That is the reason everybody needs to get familiar with the language to connect on an international level (Nishanthi, 2018), and it is now impossible to find a country where learning English has not become a norm (Mahu, 2012), Through it, one communicates using all four skills (e.g. listening, speaking, reading, and writing) to receive and transmit meaning, and can participate in a variety of social activities (Bahmani, Javadipour, Hakimzadeh, Salehi & Alavi Moghaddam, 2017). So, it becomes basic knowledge for all sciences (Jatmiko, Prahani, Munasir, Supardi, Wicaksono, Erlina & Zainuddin, 2018) because of this it has become a global priority. Learning English as a foreign language allows learners to fully appreciate the culture and the context of a country, and also widens learners' understanding(Putra, 2020). English is not hard to learn, compared to many other foreign languages. Therefore, English teaching emphasizes communication and problem-solving abilities (Adebileje & Akinola, 2020).

English institutions also attempt to encourage individuals to think, criticize, know how to acquire knowledge, and have these skills, and thus develop curricula in this respect (Seferoglu & Akbiyik, 2006). Proper teaching and learning English can lead to the production of science and innovation, and improper teaching of English can lead to a loss of talent and creativity in life, work, and education (Pishghadam, 2008). Without the right education, no society can survive (Dortaj, Zarei Zvarki & Aliabadi, 2017). Accordingly, it can be said that today's society needs new and creative educational patterns for teaching other languages especially English as a global language to prepare learners to face global life crises and take advantage of their opportunities, abilities, and creativity (Myers. 2005). Hence, designing an appropriate curriculum with a new English teaching

method is one of the issues that affect the success of English teaching. To improve the curriculum in higher education in Iran, it is necessary to make a fundamental change in the methods of teaching English (Bahmani, Javadipour, Hakimzadeh, Salehi & Alavi Moghaddam, 2017).

In our country, English language teaching has gained the learners' attention in every stage of education, specifically higher education level, and has faced its issues and problems. Also, current teachers are struggling between choosing mature teaching strategies and choosing more contemporary strategies to utilize in their classrooms (Jabbarova, 2020). Various factors affect success in learning a language, among them are the use of a new teaching method that uses new instructional technologies such as Flipped Learning Pattern (FLP) in terms of Problem-Based Teaching Approach (PBTA). It is a new method of English teaching, an innovative, student-centered approach, and one of the modern teaching-learning methods that have been welcomed by English teachers and educational experts in recent years. In this approach, pre-class instruction is provided by the teacher using information and communication technology in the form of instructional English slides, videos, and other readable course content that has already been prepared so that students will be familiar with the new course content before class and learn it with the use of the provided resources is assigned outside the classroom (Almasiturkand & Roozbehi, 2017). Therefore, the limited time of the classroom is dedicated to the higher-level activities of Bloom's taxonomy, which mostly includes activities based on creation, evaluation, and analysis. Group and active learning have more opportunities to appear (Kheirabadi, 2017).

During the class, the teacher deals with goals such as small group discussions, active learning exercises, problem-solving, and feedback (Almasiturkand & Roozbehi, 2017); Therefore, the role of the teacher changes from the transmitter of information to the facilitator and counselor. The teacher gives personal feedback to the learners and also plays more collaborative and cooperative roles in the teaching process (Schwartz; 2014).

In other words, it is also called inverted learning, which is the change of educational space from the classroom to the space of individual learning and presentation of curriculum content outside the classroom before teaching. Acquiring new information and training takes place at home with personal orientation (Sanagoo, AraghianMojarad & Jooybari, 2015). These activities replace teaching in the classroom; hence it is called flipped teaching and assignment is done in the educational environment (Roach, 2014). This teaching method leads to the creation of student-centered teaching by creating opportunities for access to information at any time and place, repetition of observation based on reading speed (Moffett & Mill, 2014) controlling learning, setting reading speed, selecting time and place of studying and continuous access

to content (Evseeva & Solozhenko, 2015). So, the class time is spent on issues in greater depth and making it attractive learning opportunities (Kavyani, Liaghatdar, Zamani & Abediny, 2017).

Nowadays, the importance of self-directed learning of English learners has been emphasized by English environments seriously and on the other hand, those teaching methods in which teachers can use information and communication technology have attracted enormous interest (Dadgari, Bagheri & Salmani, 2020). Due to the emergence of instructional technologies, student-centered instruction has become more feasible over the past decade (Smit, Brabander & Martens, 2014). As teachers try to improve teaching standards with the help of technology, create new teaching and learning patterns and strategies too, one of the patterns that make good use of technology in education especially teaching English is FLP in terms of PBTA (Bahmani, Javadipour, Hakimzadeh, Salehi & Alavi Moghaddam, 2018). This pattern is increasingly being introduced as a requirement in English environments and pays attention to the needs of learners and their self-management, desire for learning, and self-control to be prepared for lifelong learning in English (Nadi, Yosefy & Changiz, 2012). According to this, the present study aimed to investigate the effectiveness of FLP in terms of PBTA on applicants' self-directed learning towards the English course with emphasis on learners' self-management, desire for learning, and self-control in national and international English exams. To achieve this, the following research questions were answered:

1. To what extent does the use of FLP in terms of PBT affect the self-management of applicants towards the English course?
2. To what extent does the use of FLP in terms of PBT affect the desire for learning English of applicants towards the English course?
3. To what extent does the use of FLP in terms of PBT affect the self-control of applicants towards the English course?

Flipped learning, especially based on a problem-based approach, influences learners' self-directed learning and enriches learning. The use of FLP in terms of PBTA in English skills leads students to focus on their learning more, identify their learning needs and try to eliminate their learning problems. In such a case, they manage and dominate their learning. According to the issues discussed, flipped learning based on a problem-based teaching approach can be considered as the common point of flipped learning and self-directed learning. Therefore, it can be said that the findings of this study, in addition to teachers of English and other subjects, can also be used at the level of instructional policy.

2. Review of the Related Literature

Educational systems all over the world are reforming as a result of global changes in society, the transformation of political systems, and other socio-economic factors; therefore, educational specialists and researchers are trying to find a way to face this age. The use of FLP in terms of PBTA in English skills has become an essential method for teachers to improve students who want to be proactive in the creation and interpretation of knowledge. It also plays a critical role in preparing English students for national and international English exams. Therefore, English institutions and schools have encouraged their educators to support such a form of learning, whether outside or inside the classroom. Only a few studies have looked at the effect of FLP in terms of PBTA on applicants' SDL towards the English course. Jackson (2008) found positive results. As they point out, self-directed English learners gain high self-confidence in English language ability after spending time in other countries. The results of the research claim that self-directed learning education has been developed and discussed as a cost-effective and effective guide to self-directed English learning for learners in linguistic and social linguistic development. It also reinforces a sense of real competition in the English classroom (Wang, 2012).

Won and Kim (2018) have shown that using this teaching method has a positive effect on English self-directed learning. The findings of a study revealed that flipped learning affects the importance of self-directed learning in education, especially in language teaching-learning processes. It highlights the main appearance of self-directed learning with technology communication, linguistic enhancement, and executive needs (Moradi, 2018). Findings of the effect of the flipped classroom on self-directed learning in English language classes course indicated that flipped classroom influenced the self-directed variable (with the emphasis of self-management) in learning with the help of variable (pre-test) (p <.05). Also, the mean scores of students at the pre- and post-test in the experimental group were significantly different. The mean scores of self-directed learning for students trained through flipped classrooms were higher. According to García Botero, Questier, and Zhu (2019), it is contended that extra-curricular learning takes place through entertaining activities and encouragement. But interviews have shown a lack of sustainable motivation, self-monitoring, and self-management in low use of applications. The results signify the importance of context in which users are encouraged to take responsibility for their learning. However, most students need teaching and support for self-directed learning in addition to encouragement.

It can be argued that cooperative learning patterns have been effective in student self-directed learning and have led to an increase in self-directed learning scores and its components include self-control, self-management, and desire for learning in the experimental group (Mousavi & Sardari, 2019). Tahmasebi,

Ahghar, and Ahmadi (2019) also displayed that there is a significant difference between the mean scores of the experimental group and control group regarding the effect of reverse learning on students' self-leadership learning in entrepreneurship course in post-test (p <0.01) and the flipped learning method on students' desire to learn, self-control and self-management in the entrepreneurship course in the post-test stage. According to Dadgari, Bagheri, and Salmani (2020), the flipped classroom method can have a positive effect on the self-directed learning readiness of the students and be used alongside the traditional method of teaching. Kim (2020) also got that flipped learning using media convergence was found to be an effective teaching method to improve self-directed learning ability of students. Alwasal and Alhadlaq (2012) suggested that when active learning becomes the basis of our teaching, students will become more motivated to take responsibility for their education. Thus, this study focused on examining the effect of FL as an active teaching pedagogy in enhancing students' SDL skills.

Alnasib and Ali's (2020) findings also support the advantages that the effectiveness of flipped learning pedagogy on the development of student teachers' self-directed learning skills. In A systematic review and meta-analysis of flipped learning among university students in Korea: Self-directed learning, learning motivation, efficacy, and learning achievement, Kim and Lim (2021) found that flipped learning was found to be statistically significant in improving self-directed learning, learning motivation, efficacy, and learning achievement among university students. It is suggested that this method be actively applied in university education.

This method has been used to some extent in numerous studies inside and abroad on all sciences. A review of the literature reveals that the English language is the fact that the world around us is changing and turning more multicultural than it was before. There are many foreigners everywhere, traveling has become so easy that it is possible nearly for everyone and finally, being able to communicate in English with overseas is rather necessary. Also, the studies' results confirm the conclusion of related literature concerning the positive impact of practicing flipped learning pedagogy on developing learners' self-management, desire for learning and self-control skills, and increasing their satisfaction.

3. Method

3.1 Corpus

Statistical population to evaluate the effect of Flipped Learning Pattern (FLP) in terms of Problem-Based Teaching Approach (PBTA) on applicants' Self-Directed Learning (SDL) towards the English course constituted of all registered English learners in the 2018-2020 academic year at the Aladdin Center (N=814). Among them, 320 persons (118 females and 202 males) were selected by cluster

sampling and took part in the study voluntarily (Table 2), but the choice of learners was based on their degrees (only graduate students), and their age.

Table 1 demonstrates the demographic information of the participants of the study.

Table 1
Demographic characteristics of the statistical sample

n	Major	College	Faculty	Gender	Degree	Total
5	Electricity	Engineering (25)	Technical & Engineering (25)	female (7)	Bachelor (1) Master (1) Ph.D. (5)	Skill1(5) Skill2(2)
7	Computer (software & hardware)					
8	Mechanic					
1	Industrial Engineering			male (18)	Associate (4) Bachelor (7) Master (1) Ph.D. (6)	Skill1(8) Skill2(10)
1	Material Engineering					
3	Industrial Management					
3	Watering	Agriculture (36)	Agriculture (40)	female (10)	Associate (1) Master (2) Ph.D. (7)	Skill1(7) Skill2(3)
3	Water and hydraulic structures					
1	Water Resources					
4	Horticultural Sciences					
1	Agricultural Extension & Education					
1	Microbiology					
1	Plant Physiology					
4	Cultivation					
7	Agriculture					
4	Genetics (molecular & breeding)			male (30)	Bachelor (1) Master (4) Ph.D. (25)	Skill1(21) Skill2(9)
2	Plant Protection					
3	Medicinal herbs					
1	Fishery					
1	weed					
2	Livestock Nutrition	Veterinary Medicine (4)				
1	Veterinary Medicine					
1	Reproduction					
1	Sedimentology	Sciences (31)	Basic Sciences (37)	female (16)	Bachelor (2) Master (2) Ph.D. (12)	Skill1(11) Skill2(5)
1	Health Professional					
1	Environmental Health					
2	Biotechnology					

Count	Subject	Sub-category	Faculty	Gender	Degree	Skill
1	Scientology					
1	Basic Sciences					
5	Chemistry (applied, pure, & decomposable)					
1	Hematology					
2	Biology					
1	Geotechnics					
3	Laboratory Sciences					
3	Food Industry					
3	Chemical Engineering			male (21)	Bachelor (1) Master (1) Ph.D. (19)	Skill1(18) Skill2(3)
1	Hydraulic Organization					
3	Geology					
2	Physics	Mathematical Sciences (6)				
1	Analysis					
1	Statistics					
4	Math					
29	Persian Literature					
2	Sociology					
7	Geography (planning)	Literature (41)				
2	Arabic Literature					
1	Language Translator					
9	Law (International, Public, Criminal & Criminology)			female (61)	Associate (2) Bachelor (4) Master (6) Ph.D. (49)	Skill1(47) Skill2(14)
1	Quran & Hadith Sciences		Humanities (149)			
10	Jurisprudence & law (principles, punishment, & Islamic)	Theology (34)				
3	Philosophy					
8	History (Islamic Civilization)					
3	Theology					
9	Accounting					
1	Banking					
3	Economy					
1	Cultural Advertising	Administrative & Economic Sciences (43)		male (88)	Associate (1) Bachelor (4) Master (5) Ph.D. (78)	Skill1(69) Skill2(19)
21	Management (urban, executive, government, business, finance, & human resources)					
1	Information science & epistemology					

Count	Subject	Group	Category	Gender	Degree	Skill
7	Entrepreneurship (Development & Organizational)	Educational Sciences & .				
2	Curriculum planning					
9	Psychology (Clinical, Educational, & Health)					
5	Educational Management					
3	Sport Physiology	Physical education & sport sciences (15)				
1	Sport Biomechanics					
5	Physical Education					
2	Sport Science					
4	Sport Management					
1	Archeology	Architecture & Urban Planning (38)	Art (38)	female (6) / male (31)	Associate (2) Bachelor (6) Master (8) Ph.D. (22)	Skill1(21) Skill2(17)
1	Urban Design					
3	Urban & rural planning					
1	Anthropology					
17	Construction					
8	Architecture					
7	Urbanism					
2	Medicine	Medical (14)	Medical (14)	female (11) / male (3)	Bachelor (2) Master (2) Ph.D. (10)	Skill1(8) Skill2(6)
2	Midwifery					
1	Medical-bioelectrical engineering					
8	Nursing education					
1	Psychiatric Nursing					
6	Science	Diploma (17)	Pre-university (17)	female (7) / male (10)	Diploma (17)	Skill1(5) Skill2(12)
1	Construction					
1	Mechanic					
1	Art					
2	Math					
1	Accounting					
5	Humanities					
320	Technical & Engineering (25) Agriculture (40) Basic Sciences (37) Humanities (149) Art (38) Medical (14) Pre-university (17)			female (118) male (202)	Diploma (17) Associate (10) Bachelor (28) Master (32) Ph.D. (233)	Skill1(220) Skill2(100)

Then learners were randomly divided into two groups, experimental and control groups for skill 1 (grammar, comprehension, and vocabulary course) and

skill 2 (conversation, writing, listening, and vocabulary course). Figure 1 shows the community distribution and statistical sample of participants.
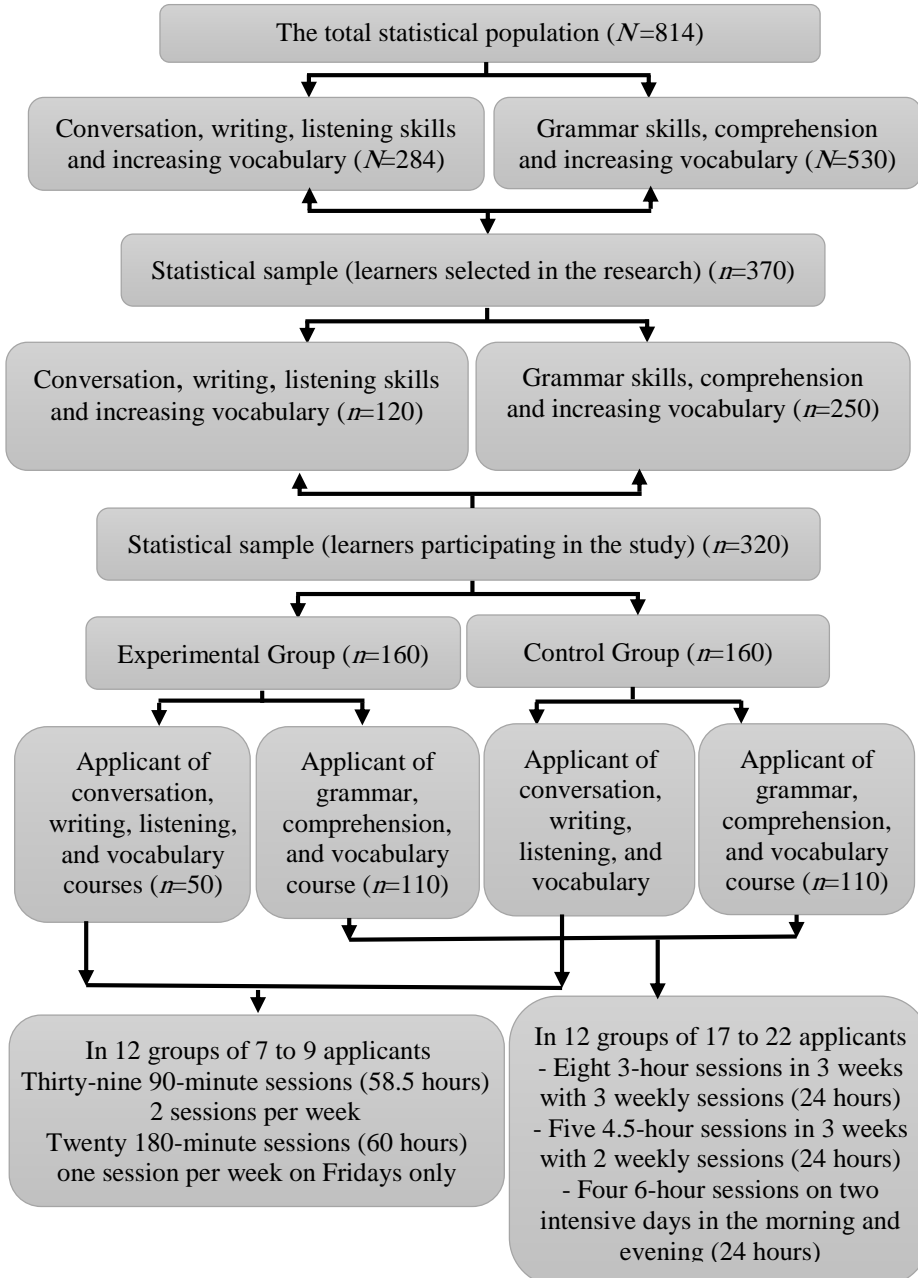
The total statistical population (*N*=814)

Conversation, writing, listening skills and increasing vocabulary (*N*=284)

Grammar skills, comprehension and increasing vocabulary (*N*=530)

Statistical sample (learners selected in the research) (*n*=370)

Conversation, writing, listening skills and increasing vocabulary (*n*=120)

Grammar skills, comprehension and increasing vocabulary (*n*=250)

Statistical sample (learners participating in the study) (*n*=320)

Experimental Group (*n*=160)

Control Group (*n*=160)

Applicant of conversation, writing, listening, and vocabulary courses (*n*=50)

Applicant of grammar, comprehension, and vocabulary course (*n*=110)

Applicant of conversation, writing, listening, and vocabulary

Applicant of grammar, comprehension, and vocabulary course (*n*=110)

In 12 groups of 7 to 9 applicants
Thirty-nine 90-minute sessions (58.5 hours)
2 sessions per week
Twenty 180-minute sessions (60 hours)
one session per week on Fridays only

In 12 groups of 17 to 22 applicants
- Eight 3-hour sessions in 3 weeks with 3 weekly sessions (24 hours)
- Five 4.5-hour sessions in 3 weeks with 2 weekly sessions (24 hours)
- Four 6-hour sessions on two intensive days in the morning and evening (24 hours)

Figure 1. Statistical population and sample

After identifying the population and statistical sample, and dividing the statistical sample into two groups, we start teaching. One was a control group (*n*=160) which was taught grammar, comprehension, and vocabulary course (*n*=110) and conversation, writing, listening, and vocabulary courses (*n*=50) with FLP in terms of PBTA and the effect of it on applicants' self-management, desire for learning and self-control in two English skills. Another was an experimental group (*n*=160) which was taught those skills with traditional teaching(*n*=110+50). Then, discussions, schedules, and implementation of the project were determined. The course time was determined based on the exam date of each month that is chosen by the Iranian Measurement Organization, Islamic Azad University, and Ministry of Health, Treatment, and Medical Training. The applicants of grammar, comprehension, and vocabulary course (*n*=220) contains 12 groups of 17 to 22 students in each group with:

- ✓ Eight 3-hour sessions in 3 weeks with 3 weekly sessions (24 hours)

- ✓ Five 4.5-hour sessions in 3 weeks with 2 weekly sessions (24 hours)

- ✓ Four 6-hour sessions on two intensive days in the morning and evening (24 hours)

Applicants of conversation, writing, listening, and vocabulary courses (*n*=100) contains 12 groups of 7 to 9 students in each group with:

- Thirty-nine 90-minute sessions (58.5 hours) 2 sessions per week

- Twenty 180-minute sessions (60 hours) one session per week on Fridays only

 To implement the pattern, first, ent and tips with this so the content was prepared and then the appropriate social network platform was considered according to easy access (Telegram and WhatsApp). Learners and teachers can communicate with each other by sharing educational content, ideas, questions, assignment, and tips with this social network. This group was limited to participants in the course. This means that only pre-registered applicants were allowed to enter the classroom.

The experimental group was taught before the start of the class by passing the course through FLP in terms of PBTA according to the daily lesson plan and receiving textual content in electronic and printed form (i.e. books and pamphlets), audio and video in small frames, receive resources in person via flash and social networks (e.g. Telegram and WhatsApp). The control group also took the course through traditional teaching in the form of lectures, books, and pamphlets in the classroom. The content effectiveness and comprehensive progress review in

grammar, comprehension, and vocabulary course were taken through a pre-test and post-test of the researcher-made questionnaire in sessions and courses. The questions extracted from standardized tests of Iranian Measurement Organization, Islamic Azad University, and Ministry of Health, Treatment and Medical Training exams, as well as class questions, were conducted.

According to the process pattern, the learning environment and the required set of content for each session were designed and prepared separately and were provided to the learners at the time of registration. In addition to conducting the pre-test in the first session, a brief explanation of the work procedure was given to the learners. Solving learners' problems about restudied content took place at the beginning of each session. Then, the test was answered, and how to solve it was discussed based on the previously studied resources by the learners with the guidance of the teacher.

After solving the problems and answering the test, complementary activities were given to the learners during the same session to consolidate the concepts. The Learning contents required for the next session were given, too. The teacher in the class social network group and the classroom, in addition to observing the activities, asked questions, provided feedback to the learners, and answered the learners' questions. This procedure was performed for 8 months in 10 courses. Grammar, comprehension, and vocabulary were taught along with techniques of answering questions for 5 courses in the experimental group and 5 courses in the control group. At the beginning of the next session, a post-test was taken from the content of the previous session and a pre-test on the content of the same session.

3.2 Procedure

Data were collected as a part of a doctoral dissertation on designing and validating a Flipped Learning Pattern (FLP) in terms of Problem-Based Teaching Approach (PBTA) and its effect on applicants' problem-solving styles and Self-Directed Learning (SDL) in national and international English exams, conducted among learners in the community English class of Aladdin institute in Mashhad-Iran. Upon the estimation of sample volume with the aid of the Morgan t

Table, 320 individuals were selected through a stratified sampling method. The sample volume in each stratum was also determined. This research is quasi-experimental. It is a type of pre-test and post-test study. The specific questionnaire was validated and implemented in several FLP in terms of PBTA curricula, but to evaluate the effect of FLP in terms of PBTA on Applicants' SDL in two skills of English courses, the self-directed learning questionnaire was used.

The data collection tool was Fischer, king, and Tague's (2001) self-directed learning readiness scale. It consists of 52 items under three subscales: 1. self-

management: self-directed learners can identify what they need during the learning process, to set learning goals, control their energy and time during learning, and arrange work feedbacks, 2. The desire for learning: such individuals have a strong motivation for acquiring knowledge, and 3. self-control or self-regulatory abilities: self-directed learners are completely independent people who can analyze, plan, implement, and assess their leering activities independently using a five-point Likert scale (1–5) of strongly disagree, disagree, undecided, agree and strongly agree (Table 2).

Table 2

Fischer, King and Tague's (*2001*) *self-directed learning readiness scale*

Item	Mean	*SD*	Corrected item – total correlation	Alpha if item deleted
1. I solve problems using a plan	4.3	1.059	.350	.920
2. I prioritize my work	4.9	.316	.386	.920
3. I like to solve (answer) puzzles/questions	4.2	.632	**.251**	.922
4. I manage my time well	4.9	.316	.559	.918
5. I have good management skills	4.5	.527	.504	.919
6. I set strict time frames	3.9	.876	.532	.919
7. I prefer to plan my own learning	4.6	.516	.345	.920
8. I prefer to direct my own learning	4.8	.422	**.294**	.921
9. I believe the role of the teacher is to act as a resource person	4.2	.632	**.189**	.922
10. I am systematic in my learning	3.8	.789	.477	.919
11. I am able to focus on a problem	4.2	.632	.375	.920
12. I often review the way nursing practices are conducted	4.4	.699	.317	.921
13. I need to know why	4.3	.675	.305	.921
14. I critically evaluate new ideas	4.4	.699	.477	.919
15. I prefer to set my own learning goals	4.6	.516	.484	.919
16. I am willing to change my ideas	4.3	.823	**.197**	.921
17. I will ask for help in my learning when necessary	4.5	.972	**.281**	.921

18. I am willing to accept advice from others	4.5	.707	**.239**	.921
19. I learn from my mistakes	4.4	.843	.381	.920
20. I will alter my practices when presented with the facts	4.2	.789	**.289**	.921
21. I am open to new learning opportunities	4.6	.699	**.291**	.921
22. I am open to new ideas	4.5	.707	.302	.921
23. When presented with a problem I cannot resolve, I will ask for assistance	4.1	.994	.363	.920
24. I am responsible	4.4	.516	.467	.919
25. I like to evaluate what I do	4.3	.483	.574	.918
26. I have high personal expectations	4.1	.568	.497	.919
27. I have high personal standard	4.0	.667	.486	.919
28. I have high beliefs in my abilities	4.0	.943	.407	.920
29. I am aware of my own limitations	4.1	.568	.419	.920
30. I am assertive	3.9	.876	**.261**	.921
31. I am confident in my ability to search out information	4.8	.422	.409	.920
32. I enjoy studying	4.3	.675	.445	.920
33. I have a need to learn	4.3	.675	.522	.919
34. I enjoy a challenge	4.3	.823	.532	.919
35. I want to learn new information	4.2	.789	.520	.919
36. I enjoy learning new information	4.2	.789	.514	.919
37. I set specific times for my study	4.1	1.197	.551	.918
38. I am self-disciplined	4.6	.516	.562	.918
39. I like to gather the facts before I make a decision	4.2	.632	.496	.919
40. I am organized	4.5	.707	.517	.919
41. I am logical	4.1	.738	.490	.919

42. I am methodical	3.9	.738	.568	.918
43. I evaluate my own performance	4.3	.675	.554	.918
44. I prefer to set my own criteria on which to evaluate my performance	4.1	.876	.467	.919
45. I am responsible for my own decisions/actions	4.3	.949	.396	.920
46. I can be trusted to pursue my own learning	4.7	.483	.507	.919
47. I can find out information for myself	4.6	.516	.341	.920
48. I need minimal help to find information	4.0	.816	**.228**	.921
49. I like to make decisions for myself	4.1	.994	.334	.920
50. I prefer to set my own goals	4.4	.699	.464	.919
51. I am in control of my life	4.0	.471	.332	.920
52. I need to be in control of what I learn	4.1	.876	.368	.920

Findings from Fisher et al. (2001) in Australia showed that the overall reliability of this scale was reported to be 83% by Cronbach's alpha, 87% for self-management subscale, 85% desire for learning, and 80% for self-control. The reliability of this scale by Cronbach's alpha in the study of Nadi and Sajadian (2006) who validated this questionnaire in Iran was 82% for the whole test, 78% for self-management subscales, 71% desire for learning, and 60% for self-control. Ghobadi, Haddadi, and Dadashzade (2015) also reported 86% of Cronbach's alpha of this questionnaire, and 76% in self-management, 55% in desire for learning, and 70% in self-control sub-components. In this research, the Cronbach alpha coefficient was calculated for both the whole research and its subscales: 88% for the whole self-directed questionnaire, 87% for self-management components, 83% for the desire to learn and 78% for self-control 81%.

To collect data, the questionnaire was first implemented as a pre-test on both groups (experimental and control). Then, the experimental group under the flipped learning pattern and the control group under the traditional method were taught in English. At the end of the course, a post-test was performed on both groups.

3.3. Research Design

The data were entered into MS Excel 2010 and analyzed using IBM SPSS version 20 (IBM SPSS Statistics for Windows). To determine the validity and reliability of the research, Cronbach's alpha coefficient (α) was measured. In the results of statistical analysis of the present study, after the normality of the study population, repeated measurement test and parametric t-test of a sample were used to answer the research questions.

4. Results

The results are organized according to the research questions that were posed. To evaluate the effectiveness of FLP in terms of PBTA on Applicants' self-management, desire for learning and self-control towards the English course, data were described and analyzed in two groups and two stages: pre-test and post-test. Due to the normality of the variable of applicants' self-management, desire for learning and self-control towards the English course in the pre-test and post-test of the two groups, repeated measurement test was used for comparison. One of the things that should be done to do ANKOA analysis is the Box's M test or internal correlations. The significance level of this test must be higher than 0.05. In this case, it is not possible to continue the ANCOA analysis test due to the lack of internal correlation. According to the results of research questions:

Question 1: To what extent does the use of FLP in terms of PBTA affect the self-management of applicants towards the English course?

The research hypothesis is as follows:

H_0 : The use of FLP in terms of PBTA does not affect the self-management of applicants towards the English course.

H_1 : The use of FLP in terms of PBTA affect the self-management of applicants towards the English course.

Table 3
Description of data on the self-management of applicants towards the English course in two groups and two stages of pre-test and post-test

Group	Test	Descriptive indicators		
		n	$\bar{x}$	S

Control	pre-test	160	35.97	3.67
	post-test	160	37.71	2.02
Experimental	pre-test	160	36.13	3.6
	post-test	160	38.25	1.3

Table 4
Box's M test results Internal correlations of covariance matrix homogeneity

Test	Values
Box's M	33.503
F	11.092
$df\ 1^{st}$	3
$df\ 2^{nd}$	188
Sig	0.051

Because the significance level of Box's M test is higher than 0.05, the assumption of homogeneity of the covariance matrix in the two groups in the pre-test and post-test stages has not been violated.

Table 5
Results of repeated measurement test, comparison of the self-management of applicants towards the English course

Stage	F	df	Sig
The effect of the method	89.719	1	0.0001
The effect of the group	0.871	1	0.351
The effect of the method $\times$ The effect of the group	2.028	1	0.155

Question 2: To what extent does the use of FLP in terms of PBTA affect the desire for learning English of applicants towards the English course?

The research hypothesis is as follows:

H_0 : The use of FLP in terms of PBTA does not affect the desire for learning English of applicants towards the English course.

H_1 : The use of FLP in terms of PBTA affect the desire for learning English of applicants towards the English course.

Table 6
Description of data on the desire for learning English of applicants towards the English course in two groups and two stages of pre-test and post-test

Group	Test	Descriptive indicators		
		n	$\bar{x}$	S
Control	pre-test	160	35.86	3.28
	post-test	160	39.56	1,74
Experimental	pre-test	160	35.71	3.32
	post-test	160	39.95	1.84

Table 7
Box's M test results Internal correlations of covariance matrix homogeneity

Test	Values
Box's M	2.456
F	0.813
$df\ 1^{st}$	3
$df\ 2^{nd}$	183
Sig	0.486

Because the significance level of Box's M test is higher than 0.05, the assumption of homogeneity of the covariance matrix in the two groups in the pre-test and post-test stages has not been violated.

Table 8
Results of repeated measurement test, comparison of desire for learning English of applicants towards the English course

Stage	F	df	Sig
The effect of the method	379.154	1	0.0001
The effect of the group	1.733	1	0.189
The effect of the method X The effect of the group	0.271	1	0.603

Question 3: To what extent does the use of FLP in terms of PBTA affect the self-control of applicants towards the English course?

The research hypothesis is as follows:

H_0 : The use of FLP in terms of PBTA does not affect the self-control of applicants towards the English course.

H_1 : The use of FLP in terms of PBTA affect the self-control of applicants towards the English course.

Table 9
Description of data on the self-control of applicants towards the English course in two groups and two stages of pre-test and post-test

Group	Test	Descriptive indicators		
		n	$\bar{x}$	S
Control	pre-test	160	41.06	3.24
	post-test	160	43.5	2.88

Experimental	pre-test	160	40.73	3.19
	post-test	160	44.12	2.44

Table 10
Box's M test results Internal correlations of covariance matrix homogeneity

Test	Values
Box's M	19.838
F	6.568
df 1st	3
df 2nd	188
Sig	0.058

Because the significance level of Box's M test is higher than 0.05, the assumption of homogeneity of the covariance matrix in the two groups in the pre-test and post-test stages has not been violated.

Table 11
Results of repeated measurement test, comparison of the self-control of applicants towards the English course

Stage	*F*	*df*	*Sig*
The effect of the method	259.736	1	0.0001
The effect of the group	3.909	1	0.009
The effect of the method $\times$ The effect of the group	0.293	1	0.589

5. Discussion

According to the findings, there are several reasons of learning English including the importance of using English in everyday life, starting from education, technology, communication, business, access of entertainment and access to more

internet (Putra, 2020). If the learning uses an effective method, the output of using English will also produce useful soft skills ranging from the ability to write, speak, listen, and read (Zuparova, Shegay, & Orazova, 2020). Also, it can be said that good teaching methods guarantee to learn. Consequently, we conclude that one of the main pillars of good learning is to choose an appropriate teaching method for the content. The present study pursued the goal that investigate the effect of FLP in terms of PBTA on applicants' SDL towards the English course. Although no research was found exactly based on the title of the present study, to compare, strengthen and defend the results, an attempt was made to achieve this by examining studies that are conceptually and indirectly related to the subject.

As Tables 3 demonstrates, the mean of pre-test and post-test were significant. It means that the self-management of applicants for two English skills in experimental group ($\bar{x}$=36.13, 38.25) was better than control group ($\bar{x}$=35.97, 37.71) and it was effective. Furthermore, the result of repeated measurement test in Table 5 shows the significance level of the effect of the method in the self-management of applicants (F= 89.719, p= 0.0001). The results of O'Shea (2003), Williamson, (2007), Jackson (2008), Khodabandehlou, Jahandar, Seyedi and Mousavi Dolat Abadi (2012), Lee and Park (2018) and Du (2020) 's research were in line with this part of the research, but there was no significant difference between the experimental and control learners in the level of performance results of the impact of the group (F= 0.871, p= 0.351) and the impression of the method in the group (F= 2.028, p= 0.155). The results of Al-Zahrani's study (2015) shows that too. It meant that the use of FLP in terms of PBTA only affected the method in two groups (experimental and control) of the self-management of applicants in English courses, Dewi, Marlina, and Supriyono (2019) did either.

The results could suggest that the method of using FLP in terms of PBTA among English applicants have influential effects on individuals' SDL specially on self-management subscale because learners gain vicarious experience while working alongside their peers, observing others succeeding and growing more confident. Also, the use of information and communication technology provides flexible access 24 hours a day, 7 days a week to learning resources and content for learners with different functions that can affect the self-management of learners as Mok (2014) and Ankeny and Krause (2014) reported. Taking responsibility for their learning (learners) and helping self-assessment are other notable cases in FLP in terms of PBTA and its effect on learners' self-management.

When taking a closer look at the data reported in Table 6 and 9, some aspects of the participants' SDL after the intervention were significantly higher than before the intervention, while others remained unchanged. To explore the possible effects of the pre-test ($\bar{x}$=40.73) and post-test ($\bar{x}$=44.12) of self-control

and pre-test ($\bar{x}$ =35.71) and post-test ($\bar{x}$ =39.95) of desire for learning English of applicants, they display the significance level of the pattern in experimental group. Moreover, the impression of the method in the group in the desire for learning English (F= 0.271, p= 0.603) and the self-control (F= 0.293, p= 0.589) was not significant. These findings were in line with the results of De Oliveira Fassbinder, Moreira, Cruz and Barbosa (2014), Olson (2014), Missildine, Fountain, Summers and Gosselin (2013), Amresh, Carberry and Femiani (2013) 's research. In the other two parts, the effect of the method in the desire for learning English (F = 379.154, p = 0.0001) and the self-control (F= 259.736, p= 0.0001) was significant as Brouse (2007) and Lee, Yeung & Ip (2017) also achieved these results in their research. The impact of the group in the desire for learning English (F = 1.733, p = 0.189) and the self-control (F= 3.909, p= 0.009) of applicants for English courses were also significant. The data correspond to the results of Bolhuis and Voeten, (2004), Stewart (2007), Suknaisith (2014), Kheirabadi (2017), Su and Chen (2018), Wang and Christiansen (2019), Zainuddin, Habiburrahim, Muluk, and Keumala (2019) 's study results. It meant the pre-test had no effect on the post-test of the two groups (experimental and control) of the desire for learning English and the self-control, and also the use of FLP in terms of PBTA only affected the method and group in two groups (experimental control) of the self-control and the desire for learning English of applicants. It did not affect the method in the group in the desire for learning English and the self-control.

Research has also been found that generally points to the significant effect of flipped learning on self-directed learning. There were some studies that their findings were aligned this part (Grow, 1991); (Leach, 2000); (Merriam, 2001); (Hall, 2011); (Bagheri & Joshaghan Nejhad, 2016); (Piri, Sahebyar & Sadollahi 2018); (MobSarmaleki, Rastegarpour & Kyan, 2018).

It can be discussed that the use of FLP in terms of PBTA affected the self-control and the desire for learning English of applicants because learners received positive feedback and guidance from their instructor during the class activities, and they received encouragement and support from their group members while carrying out the answer of teacher question and assignment before and during the class. Findings showed significant growth in speaking self-control and desire for learning English after the students had worked together in small groups to complete tasks that required feedback or report to the entire class. It appears that the participants struggled when engaged in a conversation in which English was spoken at a normal speed. The non-native speakers' accents when speaking English could have made it difficult for the participants to understand that affected learners' self-control.

6. Limitations

The current study has several limitations that should be taken into account in future studies. The first limitation is the purposive sample which was determined by only enrolled learners in Aladdin English center, and thus, the results cannot be generalized to other contexts or even other courses, departments, or colleges. Also, it was conducted in Iran, and because different findings may have been discovered in a different culture, it may not be appropriate to generalize the results. Besides, students from different classes and ages may have experienced different types of flipped learning, and the learning performance.

It is recommended that future research be conducted through qualitative studies, such as narrative studies, to uncover the reasons behind the phenomena of different flipped learning readiness levels. In addition, we suggest that the study is replicated with experimental and control groups at other places (college, university, city, country, etc.) in such a way that the results can be generalized in this institution to enable SDL for all students. Further comparative studies in this thematic should be carried out, including comparison with other Iran or English higher education institutions that do not utilize this method and one that utilizes it. Also, international comparison studies should be recommended to enrich studies in this field. Additionally, the students engaged in this study were taught by one of the researchers. Thus, they might have provided untrue answers to satisfy the course instructor. Hence, further follow-up mixed methods research is suggested to understand the positive effect and relationship between FLP in terms of PBTA and SDL skills. Mixed methods research with adequate design would be a significant contribution of the research field in education and pedagogy.

7. Conclusion

There are several reasons of learning English including the importance of using English in everyday life, starting from education, technology, communication, business, access of entertainment, and access to more internet. If the learning uses an effective method, the output of using English will also produce useful soft skills ranging from the ability to write, speak, listen, and read. According to the results the FLP in terms of PBTA curriculum was more effective in helping applicants' self-management, desire for learning and self-control towards English courses, and it applied to performance. The results of the research can be explained as follows:

Since flipped learning in terms of problem-solving teaching approach was a model that emerges from an active, student-centered, participatory and collaborative learning model, learners have become proficient in activities such as summarizing and taking notes, asking and answering questions, timely feedback (peer-to-peer), online chat and online communication, and group discussion that are common during FLP in terms of PBTA. Flipped learning teachers and students, by creating doubts, try to get students and classmates to

think deeply and reflect on the experience by asking questions and making consecutive assessments in line with experience. Therefore, this shows how important learning and the use of English with new methods is nowadays.

References

Adebileje, A., & Akinola, A. (2020). Teaching and learning English as a second language in Nigeria: Examining evolving approaches and methods. *Theory and Practice in Language Studies*, *10*(9), 1015-1024.

Almasiturk, S, & Roozbehi, A. (2017). Improving the quality of flipped classes by using content-based e-learning in general anatomy. *Article presented in the e-book of the 9th National Conference on E-Learning in Medical Sciences*, Mashhad. 19-20 February. 18.

Alnasib, B. N., & Ali, A. M. (2020). The impact of the flipped learning model on the development of kindergarten pre-service teachers' self-directed learning skills in Saudi Arabia. *Universal Journal of Educational Research*, *8*(11), 5271-5280.

Alwasal, S. H., & Alhadlaq, S. M. (2012). Preparing middle eastern students for the future. *Handbook of college and university teaching: A global perspective*, 77-90.

Al-Zahrani, A. M. (2015). From passive to active: The impact of the flipped classroom through social learning platforms on higher education students' creative thinking. *British Journal of Educational Technology*, *46*(6), 1133-1148.

Amresh, A., Carberry, A. R., & Femiani, J. (2013). Evaluating the effectiveness of flipped classrooms for teaching CS1. *In 2013 IEEE Frontiers in Education Conference (FIE)*, 733-735. IEEE.

Ankeny, C, J., & Krause, S. J. (2014). *Flipped biomedical engineering classroom using pencasts and muddiest point web-enabled tools*. In 2014 ASEE Annual Conference & Exposition (pp.24-614).

Bagheri, M., & Joshaghan Nejhad, F. (2016). Effect of flipped learning method on students' self-directed learning readiness and learning in the computer basics course. *Journal of Curriculum Technology*, *1*(1), 49-61.

Bahmani, M., Javadipour, M., Hakimzade, R., Salehi, K., & Alavi Moghaddam, S. B. (2017). Evaluating the rate of engagement and academic achievement

of high school students by using flipped classroom instruction. *Journal of Applied Psychological Research*, *8*(2), 35-49.

Bahmani, M., Javadipour, M., Hakimzade, R., Salehi, K., & Alavi Moghadam, S. B. (2018). Investigating the perceptions of EFL teachers about the flipped classroom model in Iranian schools. *Journal of Applied Psychological Research*, *9*(2), 61-87.

Bolhuis, S., & Voeten, M. J. (2004). Teachers' conceptions of student learning and own learning. *Teachers and teaching*, *10*(1), 77-98.

Brouse, C. (2007). Promoting self-directed learning in three online health promotion and wellness courses. *Journal of Authentic Learning*, *4*(1), 25-33

Dadgari, A, Bagheri, I, Salmani, N. (2020). The effect of flipped education on the Self-directed learning readiness nursing students in the illnesses pediatric nursing lesson. *Educ Strategy Med Sci*, *13*(4), 287-294.

De Oliveira Fassbinder, A. G., Moreira, D., Cruz, G., & Barbosa, E. F. (2014). Tools for the flipped classroom model: An experiment in teacher education. *In 2014 IEEE Frontiers in Education Conference (FIE) Proceedings* (pp. 1-8). IEEE.

Dewi, N. S. N., Marlina, N., & Supriyono, Y. (2019). The quest of self-directed learning of adult EFL learners in Indonesian higher education context. *Journal of English Education and Linguistics Studies*, *6*(1), 73-90.

Dortaj, F., Zareizevaraki, E., & Aliabadi, K. (2017). Design and validation of Mooc model-based distance education for students. *Educational Psychology*, *13*(44), 83-108.

Du, Y. (2020). Study on cultivating college students' English autonomous learning ability under the flipped classroom model. *English Language Teaching*, *13*(6), 13-19.

Evseeva, A., & Solozhenko, A. (2015). Use of flipped classroom technology in language learning. *Procedia-Social and Behavioral Sciences*, *206*, 205-209.

Fisher, M., King, J., & Tague, G. (2001). Development of a self-directed learning readiness scale for nursing education. *Nurse education today*, *21*(7), 516-525.

García Botero, G., Questier, F., & Zhu, C. (2019). Self-directed language learning in a mobile-assisted, out-of-class context: do students walk the talk? *Computer Assisted Language Learning*, *32*(1-2), 71-97.

Ghobadi, K., Haddadi, S., & Dadashzade, S. (2015). Achievement goals prioritization of nursing and midwifery students and its relationship with self-directed learning. *Education Strategies in Medical Sciences*, *8*(4), 223-229.

Grow, G. O. (1991). Teaching learners to be self-directed. *Adult education quarterly*, *41*(3), 125-149.

Hall, J. D. (2011). *Self-directed learning characteristics of first-generation, first-year college students participating in a summer bridge program* (Doctoral dissertation, University of South Florida).

Jabbarova, A. (2020). Formation of professional competencies in the course of preparing and conducting business games in English classes. *Журнал иностранных языков и лингвистики*, *1*(2), 38-42.

Jackson, J. (2008). Globalization, internationalization, and short-term stays abroad. *International Journal of Intercultural Relations*, *32*(4), 349-358.

Jatmiko, B., Prahani, B. K., Munasir, S., Wicaksono, I., Erlina, N., & Pandiangan, P. (2018). The comparison of OR-IPA teaching model and problem-based learning model effectiveness to improve critical thinking skills of pre-service physics teachers. *Journal of Baltic Science Education*, *17*(2), 300.

Kavyani, H., Liaghatdar, M. J., Zamani, B. B. E., & Abediny, Y. (2017). The learning process in the flipped classroom: a representation of experienced curriculum in higher education. *Journal of higher education curriculum studies*, *8*(15), 179-214.

Kheirābādi, R. (2017). The impact of flipped classroom model on teaching English grammar at 10th grade of high school. *Educational Innovations*, *16*(4), 141-162.

Khodabandehlou, M., Jahandar, S., Seyedi, G., & Mousavi Dolat Abadi, R. (2012). The impact of self-directed learning strategies on reading comprehension. *International Journal of Scientific & Engineering Research*, *3*(7), 1-9.

Kim, O. S. (2020). Effect of flipped learning using media convergence in practice education on academic self-efficacy and self-directed learning of nursing students. *Journal of Convergence for Information Technology*, *10*(6), 49-58.

Kim, S. H., & Lim, J. M. (2021). A systematic review and meta-analysis of flipped learning among university students in Korea: Self-directed learning, learning motivation, efficacy, and learning achievement. *The Journal of Korean Academic Society of Nursing Education*, *27*(1), 5-15.

Leach, L. J. (2000). *Self-directed learning theory and practice*. A doctoral dissertation submitted in fulfilment of the requirements. Dissertation for the degree of doctor of philosophy. University Technology, Sydney.

Lee, C., Yeung, A. S., & Ip, T. (2017). University English language learners' readiness to use computer technology for self-directed learning. *System*, *67*, 99-110.

Lee, M. K., & Park, B. K. (2018). Effects of flipped learning using online materials in a surgical nursing practicum: A pilot stratified group-randomized trial. *Healthcare informatics research*, *24*(1), 69.

Mahu, D. P. (2012). Why Is Learning English So Beneficial Nowadays? *International Journal of Communication Research*, *2*(4), 374-376.

Merriam, S. B. (2001). Andragogy and self-directed learning: pillars of adult learning theory. *New Directions for Adult and Continuing Education*, *89*, 3-13.

Missildine, K., Fountain, R., Summers, L., & Gosselin, K. (2013). Flipping the classroom to improve student performance and satisfaction. *Journal of Nursing Education*, *52*(10), 597-599.

Mobsarmaleki S, Rastegarpour H, & Kyan K. (2018). How the effect of the flipped learning method on learning the work and technology lessons. *Paper presented at the National Conference on Psychology of Social Sciences and Education*, Mazandaran, the Scientific Research Institute of Koma Alam Avaran Danesh. Jun 22; *6(2)*,1-4.

Moffett, J., & Mill, A. C. (2014). Evaluation of the flipped classroom approach in a veterinary professional skills course. *Advances in medical education and practice*, *5*, 415.

Mok, H. N. (2014). Teaching tip: The flipped classroom. *Journal of information Systems Education*, *25*, 7-11.

Moradi, H. (2018). Self-directed learning in language teaching-learning processes. *Modern Journal of Language Teaching Methods*, *8*(6), 59-64.

Mousavi, S., & Sardari, B. (2019). The effectiveness of cooperative learning patterns on self-directed learning (self-management, desire for learning and self-control) in female students. *Journal of Instruction and Evaluation*, *12*(46), 65-84.

Myers, D. E. (2005). *P*reparing performers and composers for effective educational work with children. *Arts Education Policy Review*, *106*(6), 31-38.

Nadi, M. A., Yosefy, A., & Changiz, T. (2012). Medical and dentistry students' perceptions of self-directed learning and its relationship with personal traits. *Strides in Development of Medical Education*, *8*(2), 173-181.

Nadi, M.A., &Sajadian, I. (2006). Standardization of self-directed learning reading scale on girl student of Isfahan high schools. *Educational Innovations*, *5*(4), 111-134.

Nishanthi, R. (2018). The importance of learning English in today world. *International Journal of Trend in Scientific Research and Development*, *3*(1), 871–874.

O'Shea, E. (2003). Self-directed learning in nurse education: A review of the literature. *Journal of Advanced Nursing*, *43*(1), 62_70.

Olson, R. (2014). Flipping engineering probability and statistics—Lessons learned for faculty considering the switch. *In Proceedings of the 121st ASEE Annual Conference & Exposition*, Indianapolis, IN.

Piri, M. O. O. S. A., Sahebyar, H., & Sadollahi, A. (2018). The effect of flipped classroom on self-directed learning in English language classes course. *Technology of Education Journal*, *12*(2), 141-148.

Pishghadam, R. (2008). Enhancing critical thinking with literary discussion. Literary Studies, *40*(4), 153-167.

Putra, I. N. T. D. (2020). Students' attitudes in learning English for tourism using google classroom in Mataram tourism college. *Jo-ELT (Journal of English Language Teaching) Fakultas Pendidikan Bahasa & Seni Prodi Pendidikan Bahasa Inggris IKIP*, *7*(1), 9-17.

Roach, T. (2014). Student perceptions toward flipped learning: New methods to increase interaction and active learning in economics. *International review of economics education*, *17*, 74-84.

Sanagoo, A., Araghian Mojarad, F., & Jooybari, L. (2015). Flipped classroom: A new and appropriate teaching method for the research course. *Iranian Journal of Medical Education*, *15*, 442-443.

Schwartz, T. A. (2014). Flipping the statistics classroom in nursing education. *Journal of Nursing Education*, *53*(4), 199-206.

Seferoğlu, S. S., & Akbiyik, C. (2006). Eleştirel düşünme ve öğretimi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *30*(30), 193-200.

Smit, K., de Brabander, C. J., & Martens, R. L. (2014). Student-centered and teacher-centered learning environment in pre-vocational secondary education: Psychological needs, and motivation. *Scandinavian Journal of Educational Research*, *58*(6), 695-712.

Stewart, R. A. (2007). Investigating the link between self-directed learning readiness and project-based learning outcomes: the case of international Masters students in an engineering management course. *European Journal of Engineering Education*, *32*(4), 453-465.

Su, C. Y., & Chen, C. H. (2018). Investigating the effects of flipped learning, student question generation, and instant response technologies on students' learning motivation, attitudes, and engagement: A structural equation modeling. *EURASIA Journal of Mathematics, Science and Technology Education*, *14*(6), 2453-2466.

Suknaisith, A. (2014). The results of self-directed learning for project evaluation skills of undergraduate students. *Procedia-Social and Behavioral Sciences*, *116*, 1676-1682.

Tahmasebi, F., Ahghar, G., & Ahmadi, A. (2019). Design and validation of the reverse learning pattern of entrepreneurial lessons and Its effectiveness is on self-directed learning and collaborative learning. *Educational Administration Research*, *11*(41), 35-55.

Wang, D. (2012). Self-directed English language learning through watching English television drama in China. *Changing English*, *19*(3), 339-348.

Wang, Y., & Christiansen, M. S. (2019). An Investigation of Chinese older adults' self-directed English learning experience using mobile apps. *International Journal of Computer-Assisted Language Learning and Teaching*, *9*(4), 51-71.

Williamson, S. N. (2007). Development of a self-rating scale of self-directed learning. *Nurse researcher*, *14*(2).

Won, E. S., & Kim, J. R. (2018). *The Effectiveness of Self-Directed English Learning through SNS: Adopting Facebook based on Gamification. International Journal of Mobile and Blended Learning*, *10*(3), 1-10.

Zainuddin, Z., Habiburrahim, H., Muluk, S., & Keumala, C. M. (2019). *How do students become self-directed learners in the EFL flipped-class pedagogy?* A study in higher education. *Indonesian Journal of Applied Linguistics*, *8*(3), 678-690.

Zuparova, S., Shegay, A., & Orazova, F. (2020). Approaches to learning English as the source of all. *European Journal of Research and Reflection in Educational Sciences*, *8*(5).