

Fostering EFL Pre-service Teacher Students' Motivation in Flipped Classroom: The Lens of Directed Motivational Currents Framework

Lan Yu^{1,a,*}

¹School of Education, Universiti Utara Malaysia, Sintok, Kedah, Malaysia

^ayulan2616878@gmail.com

*Corresponding author

Abstract: Student motivation is widely acknowledged as a critical factor in ensuring effective pedagogical delivery and is an essential prerequisite for successful learning processes. However, the demotivation among EFL pre-service teacher undergraduates within the flipped classroom environment poses some instructional hurdles. This study aimed to investigate the effectiveness of instructional intervention on students' motivation within the flipped classroom context. For this purpose, 'All Eyes on the Final Product' intervention project variant under the Directed motivational currents framework was adopted in this study to conduct a quasi-experiment in an English education course at a Chinese tertiary institution. The participants comprised 71 third-year pre-service teacher undergraduates of experimental and control groups. The effectiveness of the intervention on students' motivation in flipped classroom was measured by Directed motivational currents questionnaire. Data analysis applied descriptive statistics, Independent-samples *t* test and Wilcoxon rank-sum tests. The results showed that after four weeks of intervention, students' motivation of experimental group outperformed than that of control group within the flipped classroom context.

Keywords: EFL pre-service teacher student, DMCs-based intervention, instructional effectiveness

1. Introduction

Flipped classroom has been widely adopted and has shown positive impacts on EFL student learning [1]. A wide range of studies have explored the flipped classroom appears to be a promising approach for enhancing EFL student motivation [2]. Motivation is a crucial factor in EFL student learning, influencing both performance and success. However, flipped classroom approach is not without its challenges, such as the need for careful instructional design, and the reliance on student motivation [3]. For example, the need for clearer guidance and stronger connections between online self-study and classroom activities. The approach may not be suitable for all students, particularly those who do not complete their pre-class work. Therefore, while the flipped classroom has its advantages, it is important to carefully consider its implementation and suitability for different contexts. In some cases, if not well-designed, the approach may face some challenges in certain subjects, such as English language arts and humanities, where it can decrease student motivation [4]. For example, there is a lack of immediate feedback and adequate periods allotted for hands-on practice when conducting the flipped classroom approach in the English education course. This shortcoming has implications for the efficacy of pedagogic engagements, particularly insofar as it impacts the ability to rapidly address learner queries and to reinforce theoretical knowledge through applied exercises. In China, the motivation of EFL pre-service teacher students wane in their learning. However, previous studies on EFL pre-service teacher students' motivation in flipped classroom is still scarce. Moreover, the literature points to a lacking in well-defined methodologies pertaining to the efficient flipped classroom environments as noted by Wang [5]. Teachers are in need of robust pedagogical approaches that will aid in the implementation of flipped classroom approach that bolsters student engagement and motivation. Therefore, this study aims to foster EFL pre-service teacher students' motivation in flipped classroom by adopting instructional intervention based on Directed Motivational Currents (DMCs) Framework.

Pertinent to the pre-service teacher student demotivation in flipped classroom, the DMCs framework can provide a scaffolding strategy in teaching. Flipped classroom showed a disconnect between online and offline components, failing to provide students with positive feedback which causing the demotivation of students. Pre-service teacher students exhibit signs of demotivation, primarily

manifested in the twofold: First, lack of clear learning objectives and professional vision. Second, weak autonomy and limited positive emotions. The DMCs framework suggests that goal/vision-orientedness, participant ownership, a facilitative structure, and positive emotionality are interconnected components forming a complex interactive matrix of cognitive, affective, temporal, and contextual elements. This framework elucidates the fluidity inherent in motivational processes. Within the DMCs framework, Dörnyei et al.^[6] proposed seven focused intervention project variants on motivation in language teaching. This study will integrate the first focused intervention project ‘All Eyes on the Final Product’ for instructional intervention. Therefore, the research question of this study is: Does the DMCs-based intervention ‘All Eyes on the Final Product’ have a positive effect on the motivation of EFL pre-service teacher students?

2. Literature Review

2.1. EFL flipped Classroom and Student Motivation

The flipped classroom, a student-centered approach, has been extensively studied and reviewed in EFL context^[7]. Studies have consistently shown that this approach is effective in improving English proficiency, learner autonomy, and motivation^[8]. Amiryousefi^[9] noted that the approach can increase student engagement and involvement, resulting in enhanced performance. Similarly, Suo and Hou^[10] reported heightened motivation, participation, and collaboration, emphasizing the critical role of effective design and specific factors such as goal value, self-efficacy, and classroom environment. Turan^[11] further supported these findings, emphasizing positive motivational attitudes and the potential for increased motivation and performance. However, Chen et al^[12] highlighted learning interests, methods, and environment as significant factors causing demotivation, indicating a need for their consideration in the flipped classroom setting. In a nutshell, practical benefits and barriers of flipped classroom approach has been praised and criticized, with a call for further investigation^{[13][14]}. There remains a dearth of research focusing on the motivation levels of EFL pre-service teacher students within the flipped classroom setting^[15]. This study aims to bridge this gap by enrolling pre-service teacher students as participants for comprehensive examination.

2.2. Directed Motivational Currents and Focused Intervention

Directed Motivational Current (DMC) is a newly L2 motivation framework proposed by Dörnyei his colleagues^[16], which encompasses the dimensions of goal/vision orientedness, participant ownership, positive emotionality, salient and facilitative structures. DMCs represent an occurrence of heightened motivation displayed by students during particular instances as they work towards achieving a predetermined objective or aspiration^{[16][17][18]}. DMCs have been found to be prevalent among EFL learners, with higher proficiency levels and educational backgrounds associated with more frequent experiences^[19]. This framework has also been discussed in the context of language teaching, with potential applications in the classroom^[20].

In addition, the generative conditions or components of DMCs can be utilized as an intervention framework for classroom instruction that actively encourages long-term learning behaviors at the individual or intensive group level^[6]. There are seven intervention framework proposed by Dörnyei and his colleagues^[6] in the seminar work *Motivational currents in language learning: Frameworks for focused interventions*. Namely, ‘All Eyes on the Final Product, Step by Step, The Big Issue, That’s Me, Detectice Work, Story Sequels, and Study Abroad’. DMCs framework provides a new lens of investigating students’ motivation in classroom through focused intervention. DMCs can be triggered by various stimuli, such as personal or career-related goals^[21]. And therefore, this study conducted the DMCs-based focused intervention for the purpose of investigating the effectiveness of ‘All Eyes on the Final Product’ intervention on EFL pre-service teacher students’ motivation.

3. Research Methods

3.1. Quasi-experimental Design

This study aims to examine whether the ‘All Eyes on the Final Product’ intervention can foster EFL pre-service teacher students’ motivation in flipped classroom. And therefore, nonequivalent control group quasi-experimental design was conducted for it can generate causal evidence with high external

validity [22]. The nonequivalent control group design entails comparing a treatment group and a comparison group using pretest and posttest assessments. Before the intervention, both groups were evaluated (pretest), and subsequently, only one group underwent the intervention. Following this, both groups were assessed simultaneously (posttest).

3.2. Participant

In this study, two intact classes of 71 third-year pre-service teacher students were recruited as participants. One class consisting of 35 students was selected as the experimental group, while the other class comprising 36 students was selected as the control group. Both groups received flipped classroom approach. They were all English education majors, 2021 September intake. As per the academic curriculum, pre-service teacher students primarily focused on fundamental English courses during their initial two years of college and gradually transitioned to hands-on teaching skills from their third year. Before the quasi-experiment, a comparison of the comprehensive English proficiency test results of both cohorts during their freshman and sophomore years was undertaken, revealing no significant difference. Prior informed consent was obtained from all participants. What's more, two female teachers with similar educational backgrounds, and years of work experience were selected. One teacher underwent training on 'All Eyes on the Final Product' intervention for teaching the experimental group, while the other teacher did not receive training for teaching the control group.

3.3. Instrument

Directed Motivational Currents questionnaire (DMCQ) was utilized in this study. DMCQ was developed and validated by Muir [23] with the Cronbach's Alpha coefficient reaching 0.85, serves as a tool in educational psychology for evaluating students' motivation levels and the factors impacting their motivation towards a designated learning task or objective. It is structured to gauge the intensity, direction, and quality of motivation that individuals undergo concerning a specific learning activity or goal. To align with the research objectives of this study, the researcher made some modifications to the DMCQ. DMCQ in this study, comprises a total of 20 closed-ended questions following a Five-Likert scale ranging from Strongly Disagree (=1) to Strongly Agree (=5). The modified DMCQ had a reliability coefficient of 0.826, 0.896 and a validity coefficient of 0.798, 0.856 of pre-test and post-test in this study, demonstrating high reliability and validity.

4. 'All Eyes on the Final Product' Intervention

Table 1: 'All Eyes on the Final Product' Intervention

Facilitation Points	Implementation Details
A tangible outcome and real audience	Students are required to watch videos of the national primary and secondary school English teaching competition on the high-quality online course platform. Classrooms are divided into groups for a teaching contest in face to face classroom. The competition will be recorded, and the champion group's lecture video will be featured as a quality demonstration class on the school's official WeChat public account.
Reality and authenticity	The atmosphere of formal academic competition are created. Excellent English teachers from elementary and middle schools are invited to serve as judges. And student volunteers are also welcomed to serve as peer evaluation.
L2 content	The entire process is related to English language acquisition.
Clear subgoals	During the group preparation phase, establish the completion of phased tasks and objectives. Week 1 for Sub-goal 1: Conduct a critique of the quality online lessons to form observational insights. Week 2 for Sub-goal 2: Refine the lesson plan within the group. Week 3 for Sub-goal 3: Refine the lesson plan between groups. Week 4 for Sub-goal 4: Present the final product of teaching design. Teachers give the immediate feedback of each sub-goal.
Project roles and norms	Each team shall select a group leader. There must be a division of labor and cooperation within the group, allowing members to utilize their respective expertise. Originality is required, and plagiarism of others' work is not permitted. All assigned tasks should be completed before the set deadlines.

As depicted in 2.2, Dörnyei et al [6] proposed seven focused interventions project variants. Projects offer a salient framework which might be implemented to facilitate DMC-like sequences within L2

classrooms. The optimal scenario for a ‘project template’ in DMCs framework involves several critical elements: First, a defined aim in a content domain that is contextually significant and tangible for learners, providing them the opportunity to engage in activities that resonate with their identities. Second, a well-elaborated structure comprising a detailed trajectory with distinct intermediate objectives, serving as benchmarks to signal advancement and to facilitate consistent evaluative feedback. Third, constructive emotional dynamics fostered by collaboration within an evolved and unified team.

In this study, the first focused intervention project variant ‘All Eyes on the Final Product’ was adopted. This particular project variant is driven by the vision to achieve a noteworthy end-goal which energizes the entire process. As shown in Table 1, an overview of the ‘All Eyes on the Final Product’ intervention designed in this study were elaborated. Key operations of the intervention concerning the facilitation points and implementation details were described accordingly. The quasi-experiment last one month. Two teacher participants taught the course ‘Vocational skills training for pre-service English teachers in primary and secondary schools’ within flipped classroom settings. The experimental class received the intervention, while the control class was not treated.

5. Results and Discussion

Table 2: The DMCQ Statistics of Experimental Group and Control Group

Item	Group	Pre-test	Post-test	Z	P
Q1	Control Group	4(3-4)	3(2.5-4) ^a	-2.069	0.039
	Experimental Group	3.5(3-4)	4(4-5)	-3.091	0.002
Q2	Control Group	4(3-4)	4(3-4) ^a	-0.050	0.96
	Experimental Group	4(3-4)	4(4-4)	-1.883	0.06
Q3	Control Group	4(3-4)	4(3-4) ^a	-0.994	0.32
	Experimental Group	3.5(3-4)	4(4-5)	-3.574	<0.001
Q4	Control Group	4(3-4)	3(2.5-3) ^a	-1.440	0.15
	Experimental Group	3(2-4)	4(4-5)	-2.930	0.003
Q5	Control Group	2(1-3)	2(1-3) ^a	0.329	0.744
	Experimental Group	2(1-2)	3(1-4)	-2.165	0.037
Q6	Control Group	4(3-4)	3(2.5-4)	1.052	0.301
	Experimental Group	4(3-4)	4(3-4)	-1.352	0.185
Q7	Control Group	4(4-4)	4(3-4) ^a	-2.048	0.041
	Experimental Group	4(3-4)	4(4-5)	-2.498	0.012
Q8	Control Group	4(4-4)	4(3-4) ^a	-0.995	0.32
	Experimental Group	4(4-5)	4(4-4)	-0.167	0.867
Q9	Control Group	4(4-5)	4(3-4) ^a	-1.954	0.051
	Experimental Group	4(4-4.75)	4(4-4)	-0.400	0.689
Q10	Control Group	4(3-4)	4(2.5-4) ^a	1.041	0.306
	Experimental Class	4(4-4)	4(3-4)	0.724	0.474
Q11	Control Group	4(3-4)	4(3-4) ^a	-0.682	0.495
	Experimental Group	4(3-4)	4(4-5)	-1.379	0.168
Q12	Control Group	4(4-4)	4(3-4) ^a	-1.586	0.113
	Experimental Group	4(4-4.75)	4(4-4)	-0.418	0.676
Q13	Control Group	1(1-1)	1(1-1.5)	-1.732	0.083
	Experimental Group	1(1-1)	1(1-1)	-0.535	0.593
Q14	Control Group	4(3-4)	3(2-4) ^a	-2.444	0.015
	Experimental Group	4(3-4)	4(3-4)	-1.064	0.287
Q15	Control Group	4(3-4)	3(3-4) ^a	-1.718	0.086
	Experimental Group	3.5(3-4)	4(4-4)	-1.958	0.05
Q16	Control Group	4(2-4)	3(3-4) ^a	-0.084	0.933
	Experimental Group	4(3-4)	4(3-4)	-1.278	0.201
Q17	Control Group	4(3-4)	3(3-4) ^a	-2.334	0.02
	Experimental Group	4(4-4)	4(3.25-4)	-0.437	0.662
Q18	Control Group	4(4-4)	4(3-4)	0.909	0.37
	Experimental Group	4(4-4)	4(4-4)	0.147	0.884
Q19	Control Group	4(3-4)	4(3-4) ^a	-0.818	0.413
	Experimental Group	4(3-4)	4(4-4.75)	-1.338	0.181
Q20	Control Group	1(1-3)	1(1-3)	-0.577	0.564
	Experimental Group	1(1-3)	1(1-3)	-0.072	0.942
Total Score	Control Group	64.11±15.7	64(58-68.5) ^a	0.386	0.702
	Experimental Group	67.89±7.98	73.72±8.03	-2.658	0.012

Note: ^aP<0.05 indicates a significant difference between groups.

In this study, the DMCQ was administered to participants from both control and experimental groups before and after the implementation of the intervention. For data collection, Power CX questionnaire distribution platform was used for questionnaire distribution. The questionnaire was strategically

scheduled to be filled out during the students' leisure intervals. This timing was chosen to ensure that the students could engage with the survey in a calm and unhurried manner, thereby mitigating any potential influence or bias that might arise from the presence of faculty members during the completion of the DMCQ. In addition, SPSS 25.0 was utilized to analyze the experimental results of pre-test and post-test. Descriptive statistics were calculated. Independent-samples *t* test and Wilcoxon rank-sum test were used as the main data analysis methods to compare the statistics difference of both groups before and after the intervention.

As shown in Table 2, the mean score of the experimental group stood at 67.89 prior to the intervention, marginally surpassing the control group's mean score of 64.11. However, the difference was not significant. Upon conducting the post-test, a noticeable shift occurred. The experimental group's mean score rose to 73.72, an evident increase. In contrast, the control group experienced a slight decline in their mean score, which settled at 64. It is noteworthy that the post-test comparison between the two groups showed a statistically significant difference ($p=0.012$) in favor of the experimental group. Furthermore, the total score of the experimental group at the post-test phase was significantly higher compared to that of the control group, asserting that the experimental treatments had a beneficial impact on the experimental group.

More specifically, the experimental group scored significantly higher than the control group in Q1, Q3, Q4, Q5, Q7, Q14 and Q17, showing a meaningful statistical discrepancy. In preparation for the following discussion of the findings, these items are listed below:

Q1: I recognize this type of intense motivation.

Q3: I have personally experienced this type of intense motivation specifically while involving this project.

Q4: I think I experienced the flow of completing this project.

Q5: I feel fully experienced a highly-intensive motivation in this project.

Q7: When looking back now, I have very good memories of this time.

Q14: At the time, this project became a central part of my life.

Q17: I remember thinking about my goal all the time.

The results of this study demonstrate a positive impact of the 'All Eyes on the Final Product' intervention on the motivation of English pre-service teacher students. Specifically, Q1, Q3, and Q5 revealed that the DMCs-based intervention facilitated the realization of DMCs, leading to a notable increase in students' motivation. This finding confirms that the occurrence of DMCs is widespread among EFL students who possess advanced language skills and have attained a higher level of education^[19]. DMCs, as conceptualized by Dörnyei et al^[16], denote instances of heightened motivation exhibited by students as they pursue predetermined objectives or aspirations. Furthermore, findings from Q4, Q7, and Q14 suggest that the DMCs-based intervention effectively bolstered students' participant ownership and positive emotionality. Additionally, Q17 highlighted that the overarching goals or visions, akin to those underlying the completion of the project, can serve as triggers for DMCs. These triggers may encompass personal aspirations or career-related objectives, as indicated by the work of Kuftić^[21]. In a nutshell, the findings underscore the efficacy of the DMCs-based intervention in cultivating a more motivated learning environment for English pre-service teacher students in flipped classroom. By harnessing the principles of DMCs and fostering participant ownership, the intervention holds promise for enhancing both intrinsic motivation and overall involvement among students.

6. Conclusion

Based on the DMCs theoretical framework proposed by Dörnyei and his colleagues, this study investigated whether 'All Eyes on the Final Product' intervention can foster EFL pre-service teacher students' motivation in flipped classroom. DMCQ was utilized to measure the intensity of students' motivation before and after this intervention. This study found the positive effect of 'All Eyes on the Final Product' intervention on pre-service teacher students' motivation. The findings of this study underscore the potential of targeted interventions to stimulate and sustain motivation among pre-service teacher students. This study contributes to the growing body of literature on motivational interventions and carries the important implications for language educators and curriculum designers. However, this study still has some limitations. Firstly, the experiment duration was not long. Secondly, this intervention

was only conducted in one DMCs-based intervention in one course of one university. Thirdly, this study only adopted self-reported way to measure students' motivation. Future research may explore the long-term effects of more DMCs-based interventions, employ more measured method like observation, and investigate potential moderators or mediators of motivation in diverse educational contexts.

References

- [1] Fisher R, Tran Q, Verezub E. *Teaching English as a Foreign Language in Higher Education using flipped learning/flipped classrooms: a literature review*[J]. *Innovation in Language Learning and Teaching*, 2024: 1-20.
- [2] Challob A I. *The effect of flipped learning on EFL students' writing performance, autonomy, and motivation*[J]. *Education and Information Technologies*, 2021, 26(4): 3743-3769.
- [3] Jiang M Y, Jong M S, Lau W W, et al. *A scoping review on flipped classroom approach in language education: challenges, implications and an interaction model*[J]. *Computer Assisted Language Learning*, 2022, 35(5-6): 1218-1249.
- [4] Shahnama M, Ghonsooly B, Shirvan M E. *A meta-analysis of relative effectiveness of flipped learning in English as second/foreign language research*[J]. *Educational Technology Research and Development*, 2021, 69(3): 1355-1386.
- [5] Wang F H. *An exploration of online behaviour engagement and achievement in flipped classroom supported by learning management system*[J]. *Computers & Education*, 2017, 114: 79-91.
- [6] Dörnyei Z, Henry A, Muir C. *Motivational currents in language learning: Frameworks for focused interventions* [M]. Routledge, 2015.
- [7] Turan Z, Akdag-Cimen B. *Flipped classroom in English language teaching: a systematic review*[J]. *Computer assisted language learning*, 2020, 33(5-6): 590-606.
- [8] Cheng S C, Hwang G J, Lai C L. *Critical research advancements of flipped learning: a review of the top 100 highly cited papers*[J]. *Interactive Learning Environments*, 2022, 30(9): 1751-1767.
- [9] Amiryousefi M. *The incorporation of flipped learning into conventional classes to enhance EFL learners' L2 speaking, L2 listening, and engagement*[J]. *Innovation in Language Learning and Teaching*, 2019, 13(2): 147-161.
- [10] Suo J, Hou X. *A study on the motivational strategies in college English flipped classroom*[J]. *English Language Teaching*, 2017, 10(5): 62-67.
- [11] Turan Z, Gökteş Y. *Innovative redesign of teacher education ICT courses: How flipped classrooms impact motivation?*[J]. *Journal of Education and Future*, 2018 (13): 133-144.
- [12] Chen Hsieh J S, Wu W C V, Marek M W. *Using the flipped classroom to enhance EFL learning*[J]. *Computer Assisted Language Learning*, 2017, 30(1-2): 1-21.
- [13] Al-Marouf R A, Al-Emran M. *Research trends in flipped classroom: a systematic review*[J]. *Recent advances in intelligent systems and smart applications*, 2021: 253-275.
- [14] Vitta J P, Al-Hoorie A H. *The flipped classroom in second language learning: A meta-analysis*[J]. *Language Teaching Research*, 2023, 27(5): 1268-1292.
- [15] Han H, Røkenes F M, Krumsvik R J. *Student teachers' perceptions of flipped classroom in EFL teacher education*[J]. *Education and Information Technologies*, 2024, 29(2): 1539-1558.
- [16] Dörnyei Z, Ibrahim Z, Muir C. *Directed motivational currents: Regulating complex dynamic systems through motivational surges*[J]. *Motivational dynamics in language learning*, 2015, 7: 95-105.
- [17] Zarrinabadi N, Khajeh F. *Describing characteristics of group-level directed motivational currents in EFL contexts*[J]. *Current Psychology*, 2021: 1-10.
- [18] Muir C, Dörnyei Z. *Directed Motivational Currents: Using Vision to Create Effective Motivational Pathways* [J]. *Studies in Second Language Learning and Teaching*, 2013, 3(3): 357-375.
- [19] Ghanizadeh A, Jahedizadeh S. *Directed motivational currents: The implementation of the dynamic web-based Persian scale among Iranian EFL learners*[J]. *Teaching English as a Second Language Quarterly (Formerly Journal of Teaching Language Skills)*, 2017, 36(1): 27-56.
- [20] Peng Z, Phakiti A. *What a directed motivational current is to language teachers*[J]. *RELC Journal*, 2022, 53(1): 9-23.
- [21] Kuftić N, Martinović A. *Directed Motivational Currents in English L2 Learning*[J]. *Vestnik za tuje jezike*, 2023, 15(1): 189-210.
- [22] Bärnighausen T, Tugwell P, Röttingen J A, et al. *Quasi-experimental study designs series—paper 4: uses and value*[J]. *Journal of clinical epidemiology*, 2017, 89: 21-29.
- [23] Muir C. *The dynamics of intense long-term motivation in language learning: Directed motivational currents in theory and practice*[D]. University of Nottingham, 2016.