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Research Paper

Using Nonlinear Dynamic Motivational Strategies to Mitigate Reactance in EFL Classroom

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Abstract

The current discusses the significance of psychological reactance in teacher-learner interactions in an L2 teaching-learning context and highlights the importance of avoiding restrictive measures to enhance the instructional environment. The article investigated the effects of Non-linear Dynamic Motivational Strategies (NDMSs) on EFL learners in Iran, particularly in managing incivility, dissent, and resistance - all manifestations of psychological reactance in the Iranian EFL classroom setting. The study used a mixed methods approach to explore the impact of non-linear dynamic motivational strategies (NDMSs) on psychological reactance. The research design included

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both quantitative (the focus of this article) and qualitative data collection methods to thoroughly address the research questions. The quantitative phase of the study focused on comparing an experimental group receiving NDMSs to a control group receiving standard instruction, with a specific emphasis on psychological reactance. Ninety participants were selected based on OPT scores out of a total of 200 students, aged 19 to 30. Sessions were held twice weekly for a total of 16 sessions to minimize biases. Five experienced EFL teachers were chosen to ensure a comprehensive view of NDMS effectiveness. The study aimed to maintain validity while examining the impact of NDMSs in English language education. The research confirmed that NDMSs are effective in alleviating and managing psychological resistance in second language settings. As a result, it is reasonable to assume that restricting learners' freedom of expression, choices, and options in a discouraging and authoritarian L2 classroom can lead to unwanted behaviors that educators should work to avoid.

Keywords: *Nonlinear Dynamic Motivational Strategies (NDMSs), Psychological Reactance, EFL Classroom*

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1. Introduction

Researchers have recognized the lack of motivation as a significant obstacle to success in L2 learning, positioning it as a prerequisite for language acquisition (Hadfield & Dörnyei, 2013). The intricate, dynamic, and multifaceted nature of L2 motivation has been a driving force behind the sustained interest in L2 motivation research. This complexity has prompted scholars to thoroughly define and examine L2 motivation within the frameworks of various models (e.g., Gardner, 1985; Williams & Burden, 1997; Dörnyei & Ottó, 1998;

Dörnyei, 2005, 2009a;). The concept of L2 motivation has undergone significant transformations within the cognitive-situated perspective, evolving into a dynamic construct aligned with the process-oriented approach (Dörnyei, 2005; Ushioda, 2008; Dörnyei & Ushioda, 2011; Dörnyei & Ryan, 2015). Currently, L2 motivation is approached from a socio-dynamic perspective, underscoring its intricate nature and continuous, dynamic interaction with various social, contextual, and internal factors (Ushioda & Dörnyei, 2012).

Meanwhile, teacher and student motivation are closely intertwined and dependent on each other in the language classroom. The success of student motivation relies on the presence of motivated teachers (Dörnyei & Kubanyiova, 2014). Dörnyei and Ushioda (2011) describe this relationship between student and teacher motivation as bi-directional. From a complex dynamic systems perspective, learner and teacher motivation are inseparable components within the classroom environment. Even a slight change in one aspect can lead to subsequent changes in the other. The strong connection between student and teacher motivation means that teachers' enthusiasm and dedication to teaching significantly influence student motivation (Dörnyei & Ushioda, 2011; Dörnyei & Ryan, 2015). Dörnyei and Kubanyiova (2014) argue that transforming classroom practices is only possible through the efforts of teachers, particularly those who possess a vision open to development and transformation.

The lack of achievement on the part of L2 learners can be attributed to the teacher's attitude toward the learners, who have a sense of entitlement to succeed (Major, 1994). Learners may resort to expressing oppositional behavior when deprived of achievement, often through anger. Similarly, when individuals feel their autonomy, self-confidence, self-esteem, or freedom are restricted, oppositional behavior becomes a likely response (Brehm, 1996). This behavior manifests as different expressions of psychological reactance (PR),

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such as resistance, incivility, and dissent. Identical non-compliance behavior happens when non-linear dynamic second language motivational features are disregarded (Bahari, 2019a). RT posits that engaging in hostile behaviors is a prevalent response in humans (Brehm, 1996). Nearly all study results on learning attribute emotional reactance solely to learners, using terms like "uncivil behavior" or "uncivil classroom," without considering the role of teachers in contributing to non-positive behaviors (Clark & Springer, 2007; Ciani et al., 2008; Chowning & Campbell, 2009; Bjorklund & Rehling, 2009; Lessard & Nutt, 2013). This study aims to challenge this conventional trend.

It is essential to recognize that learner motivation is a significant determinant of the language learning process, and language teacher motivation serves as a prerequisite for fostering student motivation due to its interconnected nature (Dörnyei & Kubanyiova, 2014). The motivation of language teachers directly influences their teaching practices, enthusiasm, and ability to create an engaging learning environment. When motivated, teachers are more likely to employ effective teaching strategies, inspire their students, and build positive relationships that foster motivation and learning. Considering the inextricable relationship between teachers' and learners' motivations, it is undeniable that motivation research should address the teachers' side equally, focusing on various aspects of language teacher motivation.

Insufficient teacher motivation is a complex issue in various educational contexts worldwide. Kyriacou & Kunc (2006) and Zhang & Sapp (2008) have highlighted this prevalent problem, highlighting that it can be considered a universal challenge. By giving due attention to language teacher motivation, the field of motivation research can contribute to a more comprehensive understanding of the language learning process. It can provide valuable insights into the factors that

enhance and impede teacher motivation, the influence of teacher motivation on student motivation and performance, and effective strategies for promoting a motivated and inspiring teaching environment. Consequently, teachers and learners are seen as the sources of reactance, expressed through incivility, dissent, and resistance in various learning contexts, whether face-to-face or telecollaborative. It is important to note that this reactance situation should not be confused with other aspects of L2 motivation. The first situation pertains to a cognitive state that may manifest in behavioral responses like dissent, resistance, and incivility, as explored in the current research study. At the same time, the latter relates to an adverse self-perception that obstructs learners' motivation to advance in second language acquisition.

The present study is significant as it focuses on a crucial factor, psychological reactance, which influences teacher-learner interactions. Since restrictive measures often elicit backlash (Laurin et al., 2013), avoiding such measures in the L2 teaching-learning context is essential to improve the instructional environment. The research focuses on the nonlinearity and dynamic nature of second language (L2) motivation, as identified by Bahari (2019a), aligning with scholars who have recognized the shortcomings of linear models in elucidating and forecasting relationships found in SLA studies (Larsen-Freeman & Cameron, 2008). Taking into account the documented adverse effects of psychological reactance (PR) in collaborative L2 teaching-learning environments (Bahari, 2019b), the study seeks to investigate the effects of Non-linear Dynamic Motivational Strategies (NDMSs) on English as a Foreign Language (EFL) learners in Rasht, Iran. Specifically, the study has focused on preventing incivility, managing dissent, and minimizing resistance, which are three manifestations of psychological reactance. The study specifically explores the implementation of NDMSs in managing incivility, handling dissent, and minimizing resistance, representing

three distinct forms of psychological reactance encountered in the Iranian EFL classroom setting.

2. Relevant literature and previous research

2.1 Motivation and NDMSs

Motivational strategies have garnered significant attention from researchers across various cultural and educational contexts, with notable studies conducted in Iran, Hungary, Taiwan, Turkey, and Korea. Many of these investigations have sought to explore the perspectives and insights of EFL teachers regarding a wide range of motivational strategies (Cheng & Dörnyei, 2007; Alrabai, 2012). These findings have shed light on the potential approaches and techniques teachers employ to enhance learner motivation. In addition to examining teachers' standpoints, numerous scholarly inquiries have centered on motivational strategies employed by teachers and their impact on student motivation. Findings from these studies have consistently demonstrated a positive correlation between teachers' utilization of motivational strategies and the motivation levels exhibited by students (Guilloteaux & Dörnyei, 2008; Moskovsky et al., 2013). This evidence highlights the importance of motivational practices in enhancing learner engagement and enthusiasm for language learning.

Different models have been proposed including motivational strategies by Dörnyei's (2001) and motivational regulation strategies by Zimmerman (2013). Regardless of their positive impacts on L2 motivation, these models have overlooked the nonlinearity and dynamic nature of motivational factors. While Dörnyei's Motivational Strategies have been widely accepted (Gao et al., 2003; Ma, 2005; Li,

2009), this study deals with some of its insufficiencies regarding nonlinearity and dynamicity.

The implementation of motivational strategies through the incentivization of cohesive behaviors within a learning team should not be disrupted by the identification of obscure motivational factors at the individual level, considering the nonlinear and dynamic nature that influences the process of second language acquisition. NDMSs transition from the individual level to the group level at any point or stage within the revised taxonomy, with the objective of identifying motivational factors, assessing their alignment, and integrating them. This does not constitute an explication of learner examination segregation (Triplett, 1898) or the fostering of group cohesion (Ehrman & Dörnyei, 1998), but instead entails the reconstruction of group dynamics (Lewin, 1951) through the lens of the learner's self-concept (Csizér & Magid, 2014), necessitating acknowledgment and cultivation rather than mere establishment. Therefore, the current framework prioritizes capturing the diversity of elements within this study, considering their dynamic characteristics, and acknowledging their non-linear impact. The incorporation of dynamicity and nonlinearity in L2 motivation within various strategies grounded in psycho-socio-cultural perspectives renders the current taxonomy as a more effective framework for gaining insights into L2 motivation. Disregarding the nonlinearity and dynamic nature of motivational factors among second language (L2) learners is akin to assuming or compelling all members of a sports team to score a goal irrespective of their roles and capabilities, thereby revealing and representing their authentic individual motivational determinants.

NDMSs rely on the theory of dynamic systems (Larsen-Freeman & Cameron, 2008; Thompson & Vasquez, 2015; Hiver & Al-Hoorie, 2016; Dörnyei et al., 2016; Hiver & AlHoorie, 2016; Thompson, 2017; Serafini, 2017). These strategies target the identification of

individual motivational rises based on the effect of motivational mechanisms on behavior (Rosales & Rehfeldt, 2007; Lechago et al., 2010). NDMSs point to the nonlinearity and heterogeneity of learners' behavior by considering individual differences and avoiding imposing the present motivational strategies. Instead, they mention, discuss, and reinforce individual motivational factors to facilitate the recruitment of all building blocks of the motivational superstructure, from escalating purposeful factors to other motivational observations (Dörnyei et al., 2015). In order to identify the motivational factors, it is essential to distinguish between monotonous and tedious past experiences, and the engaging and appealing experiences of the learners (Dörnyei et al., 2015). This process involves examining the dynamic interactions of learners within the societal context pertaining to the anti-ought-to self (Lanvers, 2016; Alharbi, 2017; Thompson, 2017; Liu & Thompson, 2018) as discussed in Reactance Theory (Brehm & Brehm, 1981), and the concept of the ideal L2 self (Waninge et al., 2014), which is a fluid variable influenced by ongoing cognitive processes (Dörnyei & Ryan, 2015). This stage guarantees the dynamic congruence of motivational factors previously identified in the context of gender differences, as elucidated by You and Chan (2015) in relation to motivational behavior, imagery, and intensity, and examined by Henry and Cliffordson (2013), which may collaborate synergistically to achieve a nonlinear dynamic balance. Previous research on NDMSs in language learning has shown that these strategies can effectively promote motivation and improve language learning outcomes. For example, a study by Dörnyei and Ushioda (2011) found that NDMSs effectively promoted motivation and engagement in language learning among adult learners. Another study by Kim and Kim (2017) found that NDMSs effectively promoted motivation and engagement in English language learning among Korean high school students. The study found particular effectiveness of intrinsic motivation of NDMSs promptings, which interprets as a source of motivation coming from the learner

him/herself rather than from external rewards or pressures. Several previous studies have explored the use of NDMSs in EFL classrooms. For example, a study by Chen and Lin (2018) investigated the effects of an NDMS on Taiwanese EFL learners' disaster preparedness and English language learning. The study found that the NDMS significantly improved students' disaster preparedness and English language proficiency.

Similarly, a study by Hsu and Wang (2019) examined the effects of an NDMS on Chinese EFL learners' disaster preparedness and English language learning. The study found that the NDMS positively impacted students' disaster preparedness and English language learning outcomes. The findings of these studies suggest that implementing NDMSs in EFL classrooms can be an effective way to enhance students' disaster preparedness and English language learning. NDMSs can allow students to practice their English language skills while learning about essential disaster preparedness strategies. NDMSs can help students with essential response production to disasters by developing problem-solving and critical thinking skills.

2.2 Psychological reactance in EFL classroom

Prior research on psychological reactance in EFL classrooms has explored methods for teachers to mitigate reactance and enhance student engagement and motivation. One study discovered that offering students choices and opportunities for self-directed learning can decrease reactance and boost motivation (Chen & Hung, 2016). Another study found that incorporating humor and fostering a positive classroom environment can reduce reactance and increase motivation (Chen & Hung, 2017). According to reactance theory, individuals often exhibit oppositional behavior when their autonomy or freedom is restricted (Brehm, 1996). However, research on learning has

focused on psychological reactance concerning students displaying uncivil behavior (Kopp & Finney, 2013; Nutt, 2013) or in unfriendly classrooms. These studies often neglect to consider the role of the teacher in eliciting uncivil behavior, contradicting the fundamental principle of reactance theory.

A study by Amini, Pishghadam, and Saboori (2019) in Iran investigated the relationship between psychological reactance, stroke, and teacher success. The research conducted by these scholars incorporated a sample of 300 Iranian English language learners enrolled in different English language institutions. These participants were required to respond to a recently formulated assessment tool focusing on psychological reactance, stroke, and teacher efficacy. The findings revealed that stroke exhibited a positive correlation with teacher success, whereas a negative association was identified between psychological reactance and teacher effectiveness. Concerning the significance of freedom, Hammock and Brehm (1968) identified in their research that individuals who were deprived of choices exhibited psychological reactance. In a separate study, Shafiee, Rezaee, Akbar, and Kayvani (2013) observed that educators perceived their performance positively when they received encouragement yet responded unfavorably when confronted with constrictive circumstances. The research supervised by Akin-Little et al. (2004) found that learners' behaviors demonstrated enhancement and decreased confrontational incidents when they were subjected to positive reinforcement and commendation. Additionally, two separate studies (Cohen et al., 1999; Mashek & Hammer, 2011) examining the correlation between feedback and psychological reactance indicated that simply increasing the amount of feedback was insufficient; rather, the feedback needed to be supportive and motivating to diminish reactance. Mashek and Hammer (2011) demonstrated that learners could manage their reactance when they did not perceive feedback as punishment.

3. Methodology

Researchers have extensively explored the perspectives of EFL teachers on motivational practices, highlighting the positive correlation between teachers' use of these strategies and students' motivation levels. Despite the significant contributions of existing models like Dornyei's Motivational Strategies and Zimmerman's motivational regulation strategies, criticisms have emerged regarding their oversight of the nonlinear and dynamic nature of motivational factors. This literature review section aims to address these gaps by focusing on the concept of Nonlinear Dynamic Motivational Strategies (NDMSs). By transitioning from individual to group levels, NDMSs seek to identify and integrate motivational factors within learning teams, emphasizing the dynamic and non-linear influences on the language acquisition process. The current framework advocates for a comprehensive approach that acknowledges the diverse and dynamic characteristics of motivational elements, offering a more effective perspective on second language motivation rooted in psycho-socio-cultural viewpoints.

3.1 Study design and participants

The current research utilized a sequential exploratory mixed methods design. The study aimed to offer comprehensive answers to the research questions posed by employing a mixed methods design. As described by Dornyei (2007, p. 163), mixed methods research pertains to the collection and analysis of both quantitative and qualitative data within a unified study, with the aim of amalgamating these two methodologies at one or multiple points throughout the research procedure. Neither phase of the study was prioritized over the other. The quantitative stage of this study, reported in this article, employed a quasi-experimental design consisting of two groups: an experimental group and a control group. The independent variable in this study was

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non-linear dynamic motivational strategies (NDMSs) provided to the experimental group, while the control group received standard instruction without NDMSs. This study aimed to investigate the impact of NDMSs on psychological reactance, as measured by three dependent variables: incivility prevention, dissent management, and resistance minimization. In order to uphold the validity and reliability of the findings, variables pertaining to participants, including gender, age, and proficiency level, were also controlled.

This research investigated the efficacy of NDMSs in mitigating reactance within EFL educational settings. The study comprised 90 participants who were specifically chosen from a total population of 200 students based on their scores on the Oxford Placement Test (OPT). Participants' ages ranged from 19 to 30 years old. Over 16 sessions were held twice weekly, and teachers were instructed to minimize individual biases. Participation was mandatory to ensure representativeness and intact classes were utilized. The study included five experienced EFL teachers familiar with NDMS strategies, selected using convenience and snowball sampling methods. Teachers needed at least five years of teaching experience to be included. These teachers were incorporated to provide a broader understanding of NDMS effectiveness in English language learning contexts. The study aimed to maintain external validity while ensuring methodological reliability and validity.

3.2 Data collection

The required data was collected using the Psychological Reactance Questionnaire contextualized by Bahari (2019b). The questionnaire was a 45-item survey that examines the effectiveness of the NDMSs strategies preventing incivility, minimizing resistance, and managing dissent. To maintain face validity and moderate the role of gender and age, some biographical questions were added to the beginning of the

questionnaire. Participants assessed items using a 6-point Likert scale in accordance with prior research (e.g., Chomeya, 2010) that demonstrated superior discriminatory values and reliability of the 6-point Likert scale compared to the 5-point Likert scale. The completion of the questionnaire required approximately 40-45 minutes. Previous studies (Wigfield & Guthrie, 1997) have reported internal consistency Indices ranging from 0.68 to 0.77. However, the instrument was piloted, and its internal consistency was measured within the context of this investigation.

The OPT, was conducted to evaluate any potential disparities among the individuals involved in the study. The OPT test, developed by Oxford University Press and the University of Cambridge Local Examinations Syndicate, served as a proficiency assessment to gauge individuals' English communication skills for routine interactions. Comprising 60 multiple-choice questions, individuals who fell two standard deviations below or above the average score were included in the study. A time limit of 30 minutes was allocated for participants to complete the test.

Regarding the validity and reliability of the research instruments, a pilot study was undertaken by the researcher to ascertain the temporal constraints and pinpoint any deficiencies in the instruments necessitating rectification in their ultimate iterations. The pilot study enlisted 15 Iranian students resembling the primary study's participants. The OPT was administered to 200 students pursuing a Bachelor's degree in ELT at Azad University in Rasht, Iran. Each participant was required to take the placement test within a designated time frame of 100 minutes. A total of 90 students who obtained comparable scores were selected to participate in the research, with 45 students being allocated to the experimental group and 45 students to the control group. The study's objectives were communicated to all participants, with an assurance that their contributions would be

treated confidentially and would not influence their employment standing. Moreover, participants were allowed to terminate their involvement in the study at any point.

At the initial stage of the study, the experimental and control groups completed the Psychological Reactance Questionnaire as a pre-test. The experimental group then received training based on NDMSs, precisely the managing strategy proposed by Bahari (2019c), as part of their educational intervention to control PR amongst the study's participants. As part of this intervention, the experimental group received non-linear dynamic motivational strategies at three levels: psychological, social, and cultural, to encourage individual motivation and ensure that each member of the learning group was motivated to continue with the L2 course while being nonlinearly and dynamically motivated. The responses were recorded for later analysis. During the psychological phase, the teacher implemented a series of actions to situate each stage within a specific context. Initially, the teachers engaged in discussions concerning dynamic, non-linear, and stimulating psychological factors at the individual level. Subsequently, they endorsed, aided, and offered advice on incorporating and presenting psychologically stimulating factors at the group level. For example, to contextualize the concept of personal capabilities, students' self-efficacy is augmented through mastery experiences, a tactic consistent with the aforementioned procedures. During the social phase, the teachers were recommended to utilize the subsequent approaches for effectively organizing and implementing each phase. First, they were directed to identify, evaluate, and emphasize lively, non-linear, and captivating social facets at the individual level. Subsequently, they were encouraged to foster, facilitate, and endorse the interaction and integration of socially motivating elements at the collective level. For example, in order to operationalize the concept of a social objective, students' social aspirations were strengthened through the establishment of goals

aligned with the aforementioned steps. During the cultural development phase, it was advised for educators to adopt the subsequent strategies for facilitating effective planning and integration within an academic context. Initially, the teachers were directed to engage in the detailed examination, discussion, and reinforcement of dynamic, non-linear, and engaging cultural topics on an individual level. They were encouraged to foster, assist, and offer support for the sharing and incorporation of culturally stimulating components at the collective level. To exemplify the notion of cultural occasions, students' enthusiasm for cultural events was heightened by elucidating the cultural event in accordance with the aforementioned guidelines. The participants in the control group were not subjected to any specialized intervention but were provided with the standard course material. Following the intervention, the participants were instructed to once again complete the PR questionnaire as part of the posttest assessment. While the questionnaire content remained consistent across administrations, the sequence of presentation was altered.

4. Data analysis

Estimating Reliability Indices of Instruments

In a pilot study, researchers estimated the reliability indices of the research instruments before using them. Researchers selected fifteen EFL learners with characteristics similar to the primary study participants and conducted the pilot study. Table 1 presents the reliability of the research instruments, including the psychological reactance questionnaire, and the OPT.

Table 1.

Reliability Indices of the Research Instruments

	Items	Index
The Psychological Reactance	45	.79
OPT	60	.81

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Descriptive Analysis of Oxford Placement Test

To address the study's research questions, the researchers analyzed the descriptive statistics of the OPT. Table 2 presents the descriptive statistics of the OPT results.

Table 2.
Descriptive Statistics of the OPT

	N	Min	Max	M	SD
OPT	200	72	84	78.8	1.708
Valid N	200				

By relying on the OPT scores recorded in Table 2, we calculated the mean as 78.8 and the standard deviation as 1.708. Out of a pool of 200 Iranian EFL students with scores ranging from 75 to 81, we randomly selected 90 individuals. These selected participants were assigned to two main groups: an experimental group (N=45) and a control group (N=45).

Descriptive Analysis of Groups of Study

Table 3 presents the descriptive analysis of the experimental group's (EG) pre-test and posttest.

Table 3.
The Descriptive Analysis of Results for EG

	N	Min.	Max.	M	SD
Pre-test	45	73	84	79.5	3.17
Posttest	45	72	90	83	6.19
Valid N	45				

As shown in Table 3, EG's pre-test mean score is 79.5, and SD=3.170. In addition, EG's posttest mean score is 83, and SD=6.194. Figures 1 and 2 illustrate EG's pre-test and posttest scores, respectively.

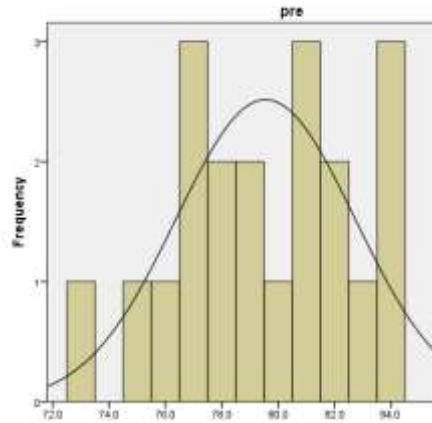


Figure 1. *Pre-test of EG*

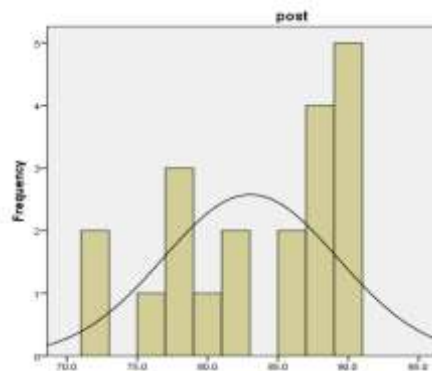


Figure 2. *Posttest of EG*

Furthermore, the results of the pre-test and posttest of the control group (CG) were presented in the following table.

Table 4.

The Descriptive Analysis of Results of CG

	N	Min.	Max.	M	SD.
Pre-test	45	72	83	77.5	3.706
Posttest	45	79	82	80.3	1.031
Valid N 20	45				

As depicted in Table 4, the average CG score during the pre-test phase is 77.5, exhibiting a standard deviation of 3.706. Conversely, the posttest results for this group reveal a mean CG score of 80.3, with a standard deviation of 1.031. The accompanying figure illustrates the pre-test and posttest outcomes for the group.

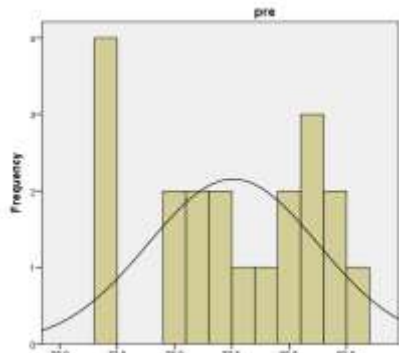


Figure 3. The Pre-test of CG

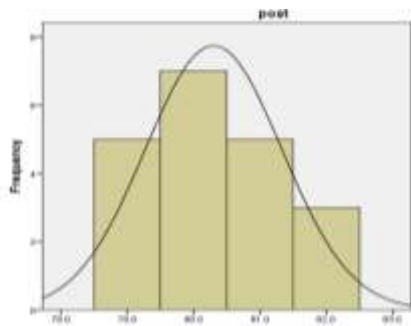


Figure 4. The Posttest of CG

Examining the Normality

The researchers conducted tests of normality to assess the normality of the distribution. The researchers sorted the data and calculated evenly spaced percentiles.

Table 5.

Tests of Normality		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre-test	EG	.226	44	.000	.877	44	.628
	CG	.167	44	.007	.908	44	.582
Posttest	EG	.191	44	.001	.900	44	.524
	CG	.181	44	.002	.915	44	.608

a. Lilliefors Significance Correction

Given that each group's sample size is 45, the Shapiro-Wilk test is recommended. For the approximately normal distribution of data in the pre-test and posttest (both groups), the p-values were 0.524 and 0.608 for the experimental group and the control group, respectively. Therefore, the null hypothesis was not rejected at the 0.05 significance level. Assuming normality for this dataset, parametric tests could be employed if all other test assumptions were met.

Addressing the First Research Question

The first question examined whether NDMSs had any impact on Iranian EFL learners' incivility prevention as a form of psychological Reactance. The performance of the groups in the posttest was compared and analyzed through One-way ANCOVA. Before conducting the parametric test of ANCOVA, the assumptions underlying this test (such as the normality assumption) had to be checked. Thus, the skewness and kurtosis values for all the tests used in this study were presented and examined in Table 6 below.

Table 6.

Descriptive Statistics of Pre-tests and Posttests in Incivility Prevention for the Two Groups

Tests	N		Skewness		Kurtosis	
	Statistic		Statistic	Std. Error	Statistic	Std. Error

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EG Pre-test	45	.23	.37	-1.24	.73
EG Posttest	45	-.10	.37	-1.28	.73
CG Pre-test	45	-.62	.37	-.88	.73
CG Posttest	45	-.19	.37	-1.49	.73

The statistics in Table 6 provides insights into the distribution characteristics of the pre-tests and posttests for both EG and CG group in the context of incivility prevention. The EG pre-test has a slightly positively skewed distribution with low kurtosis. The EG posttest also has a slightly negatively skewed distribution with low kurtosis. The CG pre-test shows a more negatively skewed distribution compared to the other tests. The CG Posttest displays a negative skewness with high kurtosis in the distribution.

The analysis revealed that skewness and kurtosis values less than ± 2.00 indicate a normal distribution, while values exceeding ± 2.00 indicate skewness and peakedness in the distribution. Since all the skewness and kurtosis values listed in Table 4.6 fall below ± 2.00 , we can conclude that the distributions of the pre-test and posttest data for the groups in this study met the normality assumption. Along with normality, the study ensured the assumptions of linearity and homogeneity of variance and regression slopes were met for the ANCOVA test. The study found no violations of these assumptions. ANCOVA was used to analyze the performance of the EG and CG to investigate the first hypothesis. This approach allowed the researcher to adjust for potential preexisting differences in pre-test scores between the two groups and compare their Incivility Prevention posttest scores accordingly. The results are presented in Tables 7 and 8:

Table 7.

Descriptive statistics for posttest scores of EG and CG learners

Gro ups	M ea n	Std. Deviat ion	N
EG	12	1.031	45
CG	10	2.719	45
Tota l			16

The posttest average score of the experimental group learners (M = 12) exhibited a statistically significant increase compared to that of the control group learners (M = 10). To find out whether the EG learners significantly outperformed their control group counterparts in terms of incivility prevention posttest or not, the results in the one-way ANCOVA table (Table 4.8) had to be examined:

Table 8.

One-Way ANCOVA for the Reading Posttest Scores of MEG and CG Learners

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	89.36	2	44.68	13.96	.00	.26
Intercept	548.27	1	548.27	171.39	.00	.69
Pre-test	11.35	1	11.35	3.54	.06	.04
Groups	21.76	1	21.76	22.43	.00	.22
Error	246.32	89	3.19			
Total	30951.00	90				

Corrected Total	335.68	89
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In Table 4.8, one can find the relevant p-value by examining the row identified as "groups" in the first column and proceeding across this row to pinpoint the p-value under the Sig. Column for comparison with the alpha significance level set at .05. The p-value was less than the predetermined alpha threshold of significance (.00 .05), signifying a statistically notable distinction between the participants in the experimental group (EG) and control group (CG) concerning the posttest assessment of incivility prevention. In other words, the use of NDMSs was effective in terms of incivility prevention among Iranian EFL learners. The effect size, denoted in the Eta Squared column of the table, was substantial (.22), with Cohen (1988, as cited in Pallant, 2010) suggesting that an effect size is considered small for .01, moderate for .06, and large for .14. The positive and significant effect of NDMSs on Iranian EFL learners' incivility prevention suggests a form of psychological reactance.

Addressing the Second Research Question

The researchers investigated whether NDMSs affected Iranian EFL learners' dissent management as a form of psychological reactance. To do so, they conducted a One-way Analysis of Covariance (ANCOVA) to analyze the data collected.

Table 9

One-Way ANCOVA for the Dissent Management Posttest Scores of EG and CG Learners

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	56.17	2	28.08	4.24	.01	.099

Intercept	288.72	1	288.72	43.61	.00	.362
Pre-test	13.86	1	13.86	4.66	.03	.057
Groups	14.64	1	14.64	5.23	.02	.064
Error	321.71	89	6.62			
Total	31103.00	90				
Corrected Total	565.88	88				

In Table 9, the data reveals that the relevant p-value (specifically, the one corresponding to the Groups row) fell below the designated alpha levels of significance (0.02, 0.05). This signifies that the disparity between learners in the experimental group and control group regarding dissent management posttest performance achieved statistical significance. The analysis indicated a substantial effect size (0.064), implying the rejection of the second null hypothesis which posited that NDMSs had no notable impact on Iranian EFL learners' dissent management. In conclusion, it is affirmed that NDMSs exerted a notably positive influence on Iranian EFL learners' dissent management, serving as a manifestation of psychological Reactance.

Addressing the Third Research Question

The third research question evaluated whether NDMSs had any effect on Iranian EFL learners' resistance minimizing as a form of psychological reactance. In such doing, two groups are compared for resistance minimizing via one-way ANCOVA.

Table 10.

One-way ANCOVA for the resistance minimizing posttest Scores of EG and CG learners

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Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.	Partial Eta Squared
Corrected Model	52.09	2	23.12	5.04	.001	.092
Intercept	231.23	1	282.76	40.81	.000	.348
Pre-test	14.23	1	14.23	4.21	.03	.051
Groups	12.23	1	12.23	5.15	.027	.069
Error	429.79	89	6.69			
Total	22108.00	90				
Corrected Total	455.81	88				

In Table 10, the p-value corresponding to the “Groups” row was below the alpha level of significance ($p < .05$). This indicates that the discrepancy between learners in EG and CG regarding resistance minimizing posttest achieved statistical significance. Consequently, we reject the third null hypothesis, which proposed that NDMSs had no significant impact on Iranian EFL learners’ resistance, minimizing as a form of psychological reactance. Hence, it can be concluded that the experimental group benefited significantly more from NDMSs compared to the control group.

Addressing the Fourth Research Question

The fourth research question investigated the potential influence of NDMSs on the three forms of psychological reactance. To address

this query, we compared the experimental group's pre-test and posttest performance for each type of psychological reactance individually using paired sample t-tests. The results for Incivility Prevention are presented in Table 11.

Table 11.

Paired Samples T-test for Experimental Group's Incivility Prevention

Paired Differences								
	M	SD.	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2- tailed)
				Lower	Upper			
Pre-test	13.48	1.503	.307	-4.093	-	-	44	.000
Posttest					2.824	12.301		

According to Table 11, the study's significance level is less than 0.05, and with $F(2, 44) = -12.301$, $p < .05$, indicates a difference in performances between the pre-test and posttest. Therefore, the research question is addressed, revealing that NDMSs had a significant impact on preventing incivility among Iranian EFL learners.

Table 12.

Paired samples T-test for experimental groups' dissent management

Paired Differences								
M	SD.	Std. Mean	Error	95% Confidence Interval of the Difference		t	df	Sig. (2- tailed)
				Lower	Upper			

Pre-test	12.09	1.113	.215	-4.211	-2.824	-11.007	44	.653
Posttest								

According to Table 12, researchers found no significant variance between the pre-test and posttest scores of the experimental group ($t(44) = -11.007, p > 0.05$). The comparison of the average scores of the two assessments indicates no substantial statistical distinction in the posttest results of learners following instruction via NDMSs for dissent management. Hence, it can be concluded that NDMSs did not yield a notable impact on dissent management among Iranian EFL learners. Subsequently, another paired samples t-test was conducted to ascertain learners' resistance minimization outcomes.

Table 13.

Paired Samples T-test for Experimental Group's Resistance Minimizing
Paired Differences

	M	SD.	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2- tailed)
				Lower	Upper			
Pre-test	79.00	1.563	.377	-4.028	-2.008	-	44	.000
Posttest						12.391		

As illustrated in Table 13, the significance level set for the study was below 0.05, as indicated by $F(2, 44) = -12.301, p < .05$. Consequently, it can be posited that a notable disparity exists in the performance of participants between the pre-test and posttest assessments. Therefore, concerning dissent management, it can be contended that NDMS stances had a substantial impact on the ability of EFL learners to manage dissent effectively.

5. Discussion

The recent investigation aimed to examine whether NDMSs had a significant impact on Iranian EFL learners' incivility prevention as a form of psychological reactance, as well as whether NDMSs had any effect on Iranian EFL learners' dissent management and resistance minimizing as forms of psychological reactance. The study also sought to determine whether NDMSs significantly affected the three psychological reactance forms. The researchers assessed whether there were any differences between teachers' and learners' responses regarding reactance management by NDMSs. Furthermore, they explored any agreement among teachers and students concerning the success of NDMSs in preventing incivility, minimizing resistance, and managing dissent.

The findings of this research revealed that NDMSs had a positive impact on Iranian EFL learners' ability to prevent incivility, manage dissent, and minimize resistance, which are three forms of psychological reactance. Moreover, when comparing the effect of NDMSs, the results indicated that NDMSs had a more significant impact on incivility prevention and resistance minimization than on dissent management. Based on the findings, the difference between teachers' and learners' responses regarding reactance management by NDMSs was influenced by various factors. These factors included the relationship between students and teachers, students' involvement in the teaching-learning process, the development of good rapport, the provision of advice and feedback, teachers' friendly and approachable behavior, the inclusion of humor and fun activities, appreciation of students' ideas or work, working in small groups or pairs, emphasis on speaking in English, practical application, variation in teaching materials and methods, as well as the provision of timely and informative feedback. Regarding the agreement among teachers and learners on the efficiency of NDMSs in preventing incivility, minimizing resistance, and managing dissent, the results revealed that both students and teachers had similar opinions on the effects of NDMSs. The results revealed that NDMSs effectively motivated students, provided praise as a strategy, created a supportive learning

environment, increased self-confidence and student effort, and reduced anxiety. However, NDMSs were effective; their effectiveness could be further enhanced by integrating technology and authentic materials to increase motivation.

Dillard and Shen (2005) posited that a detrimental cognitive reaction is a manifestation of reactance. In a scenario characterized by low threat, Grandpre, Alvaro, Burgoon, Miller, and Hall (2003) observed that participants did not exhibit heightened negative cognitive reactions despite experiencing increased levels of reactance. These findings are consistent with previous studies (Jost et al., 2004). Therefore, it is crucial to explore and ascertain the potential nonlinear and dynamic nature of language acquisition and language learners (Buehl & Beck, 2015; Fives, Lacatena, & Gerard, 2015) in conjunction with research findings on learning from studies on psychological reactance (Chartrand et al., 2007; Quick & Considine, 2008; Kim et al., 2013; Rains, 2013) in order to construct a comprehensive learning model. Psychological reactance is a psychological mindset that can lead to various forms of oppositional behaviors like rudeness, disagreement, and defiance. The findings were also consistent with the results obtained in previous studies indicating that motivated instruction can enhance the ability of EFL/ESL teachers to overcome educational difficulties (Troia & Graham, 2003; Singer & Scollay, 2006; Bai, 2009). In relation to both novice and experienced teachers, this study yielded results that align with Frijters, Ten Dam, and Rijlaarsdam (2008), arguing that “motivation to teach should increase over time, rather than decrease” (p. 66).

6. Conclusion

Nonlinear dynamic motivational strategies have shown a significantly positive impact on Iranian EFL learners’ ability to prevent various forms of psychological reactance. The study highlighted that NDMSs were more effective in preventing incivility and minimizing resistance than dissent management. The difference in responses between teachers and students regarding reactance management by NDMSs

was influenced by various factors such as the relationship between students and teachers, student involvement in the learning process, and the overall learning environment. Both students and teachers had similar opinions on the effects of NDMSs, emphasizing their effectiveness in motivating students, creating a supportive learning environment, and reducing anxiety. The study also suggested that integrating technology and authentic materials could further enhance the effectiveness of NDMSs in motivating students. NDMSs were described as effective tools for managing resistance and creating motivated individual learners who can identify dynamic motivational factors and recognize the diversity among their classmates.

The findings suggest that NDMSs play a crucial role in shaping a positive learning environment and managing psychological reactance among Iranian EFL learners while also contributing to the promotion of motivation and engagement within the language learning context. These conclusions point to the potential for further research and the exploration of additional factors that may influence the effectiveness of NDMSs in language learning environments. Motivation within the language learning process has predominantly been ascribed to learners, with scholars typically framing it as learner-centric. Despite numerous studies in the academic literature (Atkinson, 2000; Baum, 2002; Gardner, 2007) underscoring the significance and essentiality of both teacher and student motivation, a precise and comprehensive delineation of motivation remains elusive. Thus, underscoring the pivotal role of motivation in the language teaching process, educators depict it as the inherent core drive and zeal necessary for sustaining and directing the language instruction process.

The study established the efficacy of NDMSs as a valid means for reducing and handling psychological resistance in second language contexts. Consequently, it can be reasonably inferred that constraining learners' expressions, choices, and alternatives in a disheartening and authoritarian L2 classroom induce contrary behaviors, which educators should strive to circumvent. The research also validated a favorable perception held by teachers and students regarding the utility of NDMSs in diminishing and controlling psychological

resistance. The study's primary objective aimed to leverage the assortment of motivational factors in L2 learners to foster an uplifting motivational environment for all learners. Significant progress has been observed in L2 motivation research since the initial dichotomous framework between integrative and instrumental perspectives proposed by Gardner (1985). However, there remains considerable room for advancement in empowering teachers to assume greater responsibility in evaluating the motivation levels of their students. The close interplay between L2 theory and research is crucial. It should not be disregarded, as its sustenance is critical to the future development of L2 motivation research and its practical implementation within educational settings. Consequently, educators underscore the paramount importance of motivation within their professional domain. The views of the participants are in alignment with the overarching conceptualization of motivation put forth by Dörnyei (2001, p. 7), who posited that "motivation explains why people decide to do something, how hard they are going to pursue it and how long they are willing to sustain the activity."

As mentioned earlier, the study aimed to identify the factors affected by utilizing NDMSs. The main factor was related to the relationship between the teacher and the learner. Teacher motivation had a solid link to student motivation. Teacher's intrinsic motivation was associated with student autonomous motivation and inversely correlated with student-controlled motivation and amotivation. This aligns with the results of prior research studies, including those conducted by Roth et al. (2007) and Lam et al. (2009). Cellar and Wade (1988) elucidated the rationale behind these notable connections by applying Bandura's (1977) Social Learning Theory, which posits that individuals learn through observing and mimicking the actions of a role model. In the context of the link between teachers' autonomous motivation and students' motivation, pupils are likely to mirror their teachers' zeal and passion during their involvement in activities.

A significant enhancement resulting from implementing NDMSs offers robust backing for the efficacy and significance of motivational aspects in pedagogical approaches for educators. It is crucial to

furnish students with adequate motivational scaffolding to enhance language acquisition and overall learning outcomes, particularly in English. Notably, it has been observed that teachers, despite initial enthusiasm, may experience demotivation over time due to various factors. Therefore, fostering and nurturing students' and teachers' intrinsic motivation and creativity in educational practices should be a prioritized agenda for every educational administration. It is imperative to underscore that adopting diverse, supportive strategies can be pivotal in engendering sufficient motivation and optimizing language acquisition for EFL learners. Consequently, fostering a conducive environment that cultivates enthusiasm, creativity, and wholehearted engagement in the teaching and learning process should be a global paramount objective for educational policymakers.

The study highlights a significant pedagogical implication concerning the adverse impact of test-oriented classes on the management and reduction of NDMSs. These classes heighten the likelihood of NDMSs manifesting in various forms, such as incivility, dissent, and resistance, as well as contributing to self-doubt, anxiety, and frustration among learners and teachers. Furthermore, they not only equip some teachers with test scores to coerce or suppress learner autonomy but also enable them to evade their obligation to design innovative and engaging activities that align with learners' diverse and fluctuating motivations. Several teacher participants tacitly acknowledged the presence of conditions within L2 teaching-learning environments that provoke reactance. Consequently, it is imperative to implement pedagogical reforms to mitigate the adversarial characteristics of test-oriented classes that impact second language teaching/learning settings. Another implication pertains to the potential of reinforcing NDMSs in avoiding incivility, mitigating resistance, and controlling dissent while concurrently addressing the motivational requirements of L2 learners. Emphasizing an NDMS-oriented pedagogical approach fosters learner-friendly environments tailored to individual L2 learner motivation.

This study presents several recommendations for future research in the field of education. The study might be replicated with a larger

participant pool to enhance the generalizability of the findings to a broader population. Given that some participants were excluded from the original study, a larger sample size is deemed necessary to mitigate the challenges arising from participant dropouts. It is advised that future replications involve diverse age groups, as age has been identified as a critical factor influencing the significance of contributory factors in the learning process. The researchers recommend that gender considerations be integrated into subsequent studies. Various studies have highlighted gender as a moderator variable that substantially impacts research results. Exploring gender differences can offer valuable insights into the nuances of educational outcomes. Expanding the study to settings beyond universities, such as high schools and institutes, can offer a broader perspective on the topic under investigation. Future studies may study additional factors such as EFL teachers' cognitive and affective traits, educational contexts, and more. Achieving a comprehensive understanding of the intricate nature of NDMSs in the second language (L2) context necessitates an immersive approach within the classroom environment, engaging researchers, teachers, and students. This inclusive engagement facilitates a deeper exploration of the motivations and perceptions of all stakeholders, thereby enabling theorists and educators to grasp the dynamics at play.

Conflict of interests

The authors declare that they have no conflict of interest.

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