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Resilience, immunity, L2-teacher grit, and reflective teaching in language instruction: in service classes matters

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Abstract

A professional training or staff development endeavor is known as an in-service program. During these programs, professionals get training and have the opportunity to discuss their work with others who are in their peer group. In the context of the field of education, the term "in-service classes" refers to the process by which instructors participate in additional education or training over the duration of their job in order to maintain or improve their level of professional knowledge, abilities, and practices. In spite of the fact that publicizing in-service programs for language teachers is of utmost significance, not enough focus has been placed on elaborating how they contribute to teacher-related traits. In this study, an effort was made to compare and contrast the outcomes and progress of language instructors who attended or did not attend an in-service program, as well as the effects of this decision on the teachers' resilience, immunity, L2-teacher grit, and reflective teaching. This research was of a quasi-experimental type, and it included participation from 103 English as a Foreign Language (EFL) teachers. During this research project, members of the first group, known as the control group, were not required to attend any in-service courses, whereas members of the second group, known as the experimental group, were. According to the findings of the MANOVA, EFL teachers who participated in in-service training courses had a significantly better level of resilience, immunity, L2-teacher grit, and reflectivity. It is hoped that the outcomes of this study will shed light on the significant contributions offered by in-service training programs and open up new avenues for the mental well-being of EFL teachers.

Keywords: Resilience, Immunity, L2-teacher grit, Reflective teaching, In service classes, EFL teachers

Introduction

Education's future is in the hands of its teachers, who serve as its designers. Teachers have a vital role in shaping their classrooms, fostering positive relationships with students, identifying warning signals, modeling positive behavior, and fostering growth. The success of a society rests on its educators, who must themselves be well-educated, dedicated, enthusiastic, and accountable for inspiring their pupils to think critically and creatively. Crucial to the topic at hand, a job as potentially precarious as

this one merit further in-depth consideration from several perspectives. A more critical evaluation of teaching experiences, increased self-awareness and self-regulation (Akbari et al., 2010), increased self-efficacy (Zheng et al., 2022), and improved resilience (Ayoobiyan & Rashidi, 2021) can all result from teachers engaging in reflective practice. In addition, the use of intuition, insight, and artistic ability may be fostered via reflective education as a metacognitive skill (Shirazizadeh et al., 2019). This powerful armor may fortify educators against threats. Teacher reflection may enhance immunity because, as Jacob et al. (2017) argues, it gives educators a valuable chance to look back and forth to respond to every stressful event.

Managing one's qualities or skills is inherent in the idea of resilience since instructors need to have attributes like perseverance, self-confidence, self-discipline, sound judgment, flexibility, positive relationships, and the capacity to handle and manage impediments (Beltman, 2021; Gu, 2018). The ability to bounce back from the stresses and setbacks that come with teaching is known as resilience, and it is of paramount importance in the classroom because of the many positive outcomes it may bring about (Brown et al., 2021). Resilience is currently seen to be the result of a person's own strengths and their environment coming together (Gu, 2018). Therefore, in order to present a full conceptualization of teacher resilience, it is essential to include both internal and external protective variables (Ainsworth & Oldfield, 2019; Namaziandost & Heydarnejad, 2023).

Resilience has been defined in different ways by different researchers. For example, some see it as a quality that helps educators maintain their commitment to teaching (Brunetti, 2006) while others see it as a process of development that occurs over time" that includes the ability to adapt to different situations and increase one's competence in the face of adverse conditions (Bobek, 2002). In this regard, Galante et al. (2018) performed a practical randomized controlled trial in which they used an insight meditation program to increase college students' resiliency. Insight meditation was studied for its potential educational benefits and its effect on instructors' stress and anxiety levels. Furthermore, Polat and Iskender (2018) did descriptive research and discovered that TR is associated to feelings of contentment at work, a lack of exhaustion on the job, dedication to the company, and a positive assessment of the workplace. The effects of teachers' degrees of resilience on their commitment and efficacy were shown by study conducted by Lacaba et al. (2020).

On the road to professional growth, the metaphor of teacher immunity, which can be traced back to Hiver and Dornyei (2017), is a vital step for language teachers to take. It is a defensive mechanism that teachers have developed immunity to the great chaos and complexities that are present in the classroom. According to Hiver and Dornyei (2017), the use of this innovative concept might have either a positive or negative impact, depending on how it is carried out. The development of a robust immune system leads to enhanced health as well as a defense mechanism against the stress, burnout, and other negative conflicts that teachers face. On the other side, maladaptive immunity is associated with disastrous outcomes and is comparable to fossilization in the field of education. According to Rahmati et al.'s research, it has been related to a number of unfavorable consequences, such as an unwillingness to be open to new ideas and methods. According to Hiver and Dornyei (2017), a lack of productive and robust teaching

immunity might lead to hardened resistance and avoidance techniques on the side of educators.

In accordance with Rahimpour et al. (2020) as well as Canbay and Sönmez (2023), teachers of foreign languages may not have a lengthy career if they do not have any kind of immunity. That is to say, immunity permits successful teaching and allows for teacher reflection (Hiver & Dornyei, 2017; Rahmati et al., 2019), and it protects language instructors from numerous limits that are present in the milieu in which language instruction takes place. In a manner similar to how enhancing the consciousness of instructors via reflection encourages optimal teaching practice. Reflective thinking, which is founded on the practices of ongoing self-improvement, is the means through which higher levels of thought may be attained. By using self-reflection as a method of both education and assessment, teachers are given the opportunity and encouraged to reflect on their own teaching methods.

As defined by Rahmati et al. (2019), the concept of teacher immunity refers to a protective and adaptable reaction to the myriad of challenges that teachers confront on a daily basis in the classroom. As stated by Hiver and Dornyei (2017), the resistance of a teacher to the negative impacts of teaching, such as stress, burnout, and attrition, is a complex interaction of many different factors. Hiver and Dornyei (2017) focused on two aspects of this issue, both of which are essential to the well-being of the immunity of language teachers. To begin, much like biological immunity, teacher immunity functions as a defensive and protective response in times of crisis. This enables teachers to be more productive in the classroom. Second, it assists in the development of teachers' professional identities, which makes them more equipped to face attacks in the future.

Hiver and Dornyei (2017) stressed the significance of the role that identity, individual cognition, and conduct in social contexts play in the formation and functioning of teacher immunity. Specifically, they referred to these aspects as "crucial." In their study, Li et al. (2022) pointed out that immunity is sometimes forgotten about when thinking about what motivates language instructors and who those teachers are. According to the findings of Azari Noughabi and colleagues (2020), the effort, efficacy, devotion, and psychological well-being of educators are all molded by their identities, which are a mixture of their past, present, and future experiences as well as their constantly developing interpretations of various circumstances. Furthermore, according to Beauchamp and Thomas (2009), a sense of professional identity is essential to the levels of motivation, devotion, interest, and productivity that instructors exhibit when working with students in the classroom.

Higher-order thinking abilities (i.e., critical thinking) and reflective practices are emphasized more than a set of predetermined, prescriptive instructional approaches. Teachers may use reflection as a navigational tool to help them address a wide range of issues that arise over the course of instruction (Hung & Thuy, 2021).

It is more essential to promote higher-order thinking skills (such as critical thinking and creative thinking) and reflective practices than it is to focus on a set of planned and prescriptive teaching methods. According to Hung and Thuy (2021), teachers may utilize reflection as a navigational tool to assist them in addressing a broad variety of difficulties that come up over the course of education. Dewey's (1933) key work, "How we think: a re-statement of the relation of reflective thinking to the educational process," is usually

recognized as the beginning point for critically analyzing one's own practice of reflection in light of the prior literature. By reflection, Dewey means "active, persistent, and careful consideration of any belief or supposed forms of knowledge in the light of the grounds that support it" (p. 9). In an effort to provide more clarification on the idea of reflection, Schön (1983) introduced two new terms to the field: reflection in action and reflection on action. When educators are faced with an issue in the classroom, they engage in "reflection in action." When we look back at our teaching after the fact, we are engaging in reflection-on-action, the most prevalent kind of reflection (Akbari et al., 2010).

Immunizing and bettering educational programs, reflection stands in opposition to spontaneous and habitual behavior (Aliakbari et al., 2021). Better educational programs are the result of reflective planning. In the doing phase, reflection provides instructors with a wealth of helpful data that allows them to monitor student development. Teachers may evaluate their own and their students' development via reflection throughout the assessment stage (Judge et al., 2003). What this means is that it may be used to great effect as a diagnostic tool for gauging the success of lessons and the development of individual students. Similarly, Heydarnejad et al. (2021) suggested that reflective practice helps educators move beyond method-based behavior and into roles that need a deeper understanding of their subject matter. Reflective pedagogy, which uses reflection as a tool for teacher development, is divided into five parts (Akbari et al., 2010). The first aspect of the affective component, as emphasized by Richards and Farrell (2005), is instructors' knowledge of students' connection and emotional responses in class. Second, the second half of the cognitive structure improves teachers' efficiency in terms of reflection. Another piece of the jigsaw is critical thinking, which calls on educators to reflect critically on the moral, political, and historical dimensions of their work. The last section is applied, and it is this section that is meant to include reflective pedagogy.

Grit is defined as the capacity to persevere through adversity and ultimately reap the rewards of one's efforts, despite setbacks, difficulties, and temporary setbacks in one's progress (Duckworth et al., 2007). Determination and stick-to-itiveness are therefore crucial to establishing grit (Hejazi & Sadoughi, 2022; Namaziandost et al., 2023b). A person who is passionate about anything is someone who has a strong desire to participate in or learn about that particular activity. One of the hallmarks of true grit is the ability to keep going in the face of adversity. To explain why some people are more likely to achieve than others, Duckworth et al. (2007) put out the grit hypothesis, which states that a person's likelihood of success is proportional to their interest in and dedication to the work at hand. Dale et al. (2018) found that "Grittier" people are the kind to look on the bright side of life and get things done.

Educators characterized by grit are individuals that exhibit unwavering determination in the midst of challenges and consistently demonstrate excitement for their vocation (Duckworth, 2016). In line with the findings of both Cormier et al. (2019) and Zheng et al. (2022), the concept of grit is contingent upon the specific context in which it is used. Teachers with grit in the area of second-language acquisition are those who persist in their studies and efforts despite obstacles. In light of the impending release of L2 grit for language instructors in 2021, it is essential to investigate its associations with other teacher-related notions. Zheng et al. (2022) also emphasized the significance of self-efficacy and emotion management in relation to TL2G in academic settings. Xu

(2022) reviewed the theoretical and empirical literature on teachers' motivation, self-efficacy, and perseverance, and came to the conclusion that toughness among L2 educators has received insufficient attention. The importance of grit as a predictor of foreign language proficiency among college students was highlighted by Baierschmidt (2022). Furthermore, Shabani et al. (2022) looked at how much EFL instructors' pedagogical ideas vary depending on their degrees of grit. They found that instructors with low grit and those with strong grit were significantly different on the various subscales of educational thinking.

In the last few years, there has been an increase in the amount of study done on the importance of reflective practice in the teaching of second languages. For instance, Shirazideh et al. (2019) used mixed-method study to find that reflective teaching was positively associated with resilience among Iranian EFL instructors. They identified this connection among EFL teachers. Aliakbari et al. (2020) provided more evidence that a positive association exists between the autonomy that is afforded to teachers, reflective practice, and overall job satisfaction. In addition, Namaziandost et al. (2023a) discovered that teachers' reflective practices improved when they received specialized education in the art of reflection. In the same vein, Slade et al. (2019) confirmed the possibility of an inverse association between reflective teaching and burnout among instructors.

Objectives of the current research

In spite of the significance and possible role that factors such as resilience, immunity, L2-teacher grit, and reflective teaching play in educational fields, most notably in the field of TEFL, there is still a lack of evidence regarding the extent and direction of the relationship among these factors as well as the possible influences that they may have on the teaching profession. The following educational deficits were the focus of this study, with the goal being to answer the following research question in the process:

(RQ) Can in-service training programs improve the state of resilience, immunity, L2-teacher grit, and reflective teaching in EFL Instruction?

Methodology

Participants and settings

This research had 103 participants total, all of whom were EFL teachers working in one of Afghanistan's schools (Kapisa, Logar, and Panjshir Provinces). The ages of the participants varied from 24 to 49, and their combined years of classroom experience totaled anywhere from 2 to 26 years. This is the profile of the instructors. There were 103 EFL instructors in all, 24 of whom were female and 79 of whom were male. The teachers came from a variety of socioeconomic backgrounds. There were 53 instructors who took part in the experiment in the experimental group, and there were 50 EFL teachers who took part in the control group. The participation of these students in this inquiry was fully voluntary, and previous to their engagement, they gave their consent to take part in this investigation after being adequately informed about its implications.

Instruments

To evaluate the resiliency of teachers, Connor and Davidson's CD-RISC (Connor & Davidson, 2003) was used. Several adjustments were made in order to adapt this scale

to an EFL instruction environment. For example, the wording and phrases was changed. The 26-item modified survey was scored using a 5-point Likert scale that ranged from 1 (not true at all) to 5 (true all the time). This scale was verified in a setting that was quite comparable. Three English as a Foreign Language university professors and four psychometricians were responsible for evaluating the face validity of this customized item. In addition, the dependability of this scale was rated as being satisfactory at 0.865.

Hiver (2017) created and validated the Language Teacher Immunity Instrument (LTII) to assess the participants' resistance. On a Likert scale from 1 (strongly disagree) to 6 (strongly agree), there are a total of 39 questions over 7 categories. The frequency spectrum of this instrument spans: Seven questions on teachers' beliefs about their own effectiveness in the classroom; five on burnout; five on resilience; five on attitudes; six on openness to change; six on affectivity in the classroom; and five on coping. Cronbach's alpha scores for the LTII in this research ranged from 0.805 to 0.894, indicating high reliability.

Teachers' L2 grit was evaluated using the L2-teacher grit scale (L2TGS) created and validated by Sudina et al. (2021). The tool has two scales, one measuring teachers' tenacity in the classroom and the other their enthusiasm and drive, with a total of 14 items to evaluate. This instrument was developed to evaluate persistence among EFL/ESL educators. The L2TGS seems to have adequate reliability, as shown by a Cronbach's alpha of 0.867.

The English Language Teacher Reflective Inventory (ELTRI) was created by Akbari et al. (2010) and consists of 29 questions divided into 5 categories, each with a 5-point scale for responses. The components include things like usefulness, cognition, the learner (emotions), metacognition, and significance. The Cronbach alpha coefficient of the reflective teaching questionnaire used in this study was calculated, and it was found to be 0.941 (with a confidence interval of 0.789 to 0.875).

Procedure

This study used a quasi-experimental design. A preliminary examination was carried out in advance of really beginning the investigation. The participants' resiliency, immunity, L2-teacher grit, and reflective teaching were evaluated during the course of this exam, which consisted of five portions. The treatment was then begun when this phase was completed. EFL teachers in CG did not attend in-service training courses during the period of this research. In-service training courses aimed to offer knowledge and applicable practices on resilience, immunity, L2-teacher grit, and reflective teaching were assigned to teachers who were a part of the EG and were given the assignment to participate in the in-service training courses. The construct of the selected materials for the in-service training courses were checked by five experts in the realm of TEFL and educational psychology. There was a total of twelve sessions scheduled for one semester in 2022. The concept of in-service teacher education program is used to describe any course of study designed for educators currently in the educational setting. The goal of this is to keep teachers at the cutting edge of their fields in terms of knowledge, techniques, and pedagogical effectiveness. Education for teachers already in the classroom is often seen as a continuation of training for future educators. The training programs included the practice of relevant ways to apply the aforementioned factors (i.e., resiliency, immunity,

L2-teacher grit, and reflective teaching). After the treatment had been completed, a post-test (i.e., the test of resilience, immunity, L2-teacher grit and reflective teaching) was given to both the control group (CG) and the experimental group (EG) in order to assess the EFL teachers’ development and the success of the project. In order to verify the accuracy of the findings, a total of six EFL university professors were responsible for analyzing the outcomes of the pre- and post-tests.

Data analysis

The one-way MANOVA test was used to assess the efficacy of the in-service training courses on of resilience, immunity, L2-teacher grit, and reflective teaching. MANOVA test offers regression analysis and analysis of variance for multiple dependent variables, using one or more component variables or covariates. For the purpose of this investigation, the in-service training courses served as the independent variable, while the resilience, immunity, l2-teacher grit, and reflective teaching served as the dependent variables. Before executing the MANOVA analysis, the underlying assumptions were verified, including those pertaining to normality, sample size, outliers, linearity, homogeneity of regression, and so on.

Results

A one-way MANOVA was carried out in order to make a comparison between the pre-test and post-test scores of the students in the EG and CG groups with regard to teacher resilience, teacher immunity, l2-teacher grit, and reflective teaching. This statistical test is used in situations in which there is one independent variable (in this example, in service courses in language education, which emerges as the experimental vs. control groups), and two or more associated dependent variables (TR, TI, L2TG, and RT in this particular scenario). Before running the MANOVA test, its assumptions were verified. These included the test’s normality, sample size, absence of outliers, linearity, and homogeneity of regression, amongst other things. The comparison of the EG and CG learners’ performance on the TR, TI, L2TG, and RT pretests is shown in Tables 1 and 2:

Table 1 Descriptive statistics results comparing EG and CG on the pretest of teacher resilience, teacher immunity, L2-teacher grit, and reflective teaching

	Groups	Mean	Std. deviation	N
TR Pre	EG	75.6415	13.76184	53
	CG	52.7200	16.51102	50
	Total	64.5146	18.97463	103
TI Pre	EG	130.3962	23.83545	53
	CG	120.2600	17.46111	50
	Total	125.4757	21.49457	103
L2TG Pre	EG	40.8302	11.09008	53
	CG	45.2400	11.93274	50
	Total	42.9709	11.66229	103
RT Pre	EG	62.7736	26.04481	53
	CG	45.7000	22.26304	50
	Total	54.4854	25.64075	103

Table 2 MANOVA results comparing EG and CG on pretest of teacher resilience, teacher immunity, L2-teacher grit, and reflective teaching

Effect		Value	F	Hypothesis df	Error df	Sig	Partial Eta Squared
Groups	Pillai's Trace	.42	17.94	4.00	98.00	.09	.03
	Wilks' Lambda	.57	17.94	4.00	98.00	.09	.03
	Hotelling's Trace	.73	17.94	4.00	98.000	.09	.03
	Roy's Largest Root	.73	17.94	4.00	98.00	.09	.03

Table 3 Descriptive statistics results comparing EG and CG on the posttest of teacher resilience, teacher immunity, L2-teacher grit, and reflective teaching

	Groups	Mean	Std. deviation	N
TR Post	EG	91.67	25.36	53
	CG	57.68	18.07	50
	Total	75.17	27.86	103
TI Post	EG	150.96	28.15	53
	CG	125.66	21.91	50
	Total	138.67	28.21	103
L2TG Post	EG	58.32	8.80	53
	CG	56.40	26.66	50
	Total	57.38	19.54	103
RT Post	EG	93.69	28.17	53
	CG	53.34	25.73	50
	Total	74.10	33.67	103

Table 1 displays the mean scores obtained by the EG and CG before taking the pretest for TR, TI, L2TG, and RT. On each of them, there was only a little disparity in the mean scores of the two groups (with the exception of those on which the mean scores of the EG and CG were almost identical). In order for the researcher to determine whether or not the differences were statistically significant, they were required to consult the MANOVA table, which may be seen below (Table 2):

The Wilk's Lambda statistic, which is the most often reported statistic, is given as 0.57. The significance level of the Wilk's Lambda test statistic was determined to be 0.09, indicating that it above the predetermined threshold of 0.05. This finding indicates that there were no statistically significant differences between the EG and CG groups in terms of their pretest scores for the dependent variables. The following section presents the outcomes of a comparable data analysis methodology conducted on the posttest scores of TR, TI, L2TG, and RT for both the experimental group (EG) and control group (CG). Any potential modifications seen in the posttest results may be ascribed to the therapy administered to the experimental group, which included the use of in-service courses for language teaching.

As can be seen in Table 3, the EG and CG both had posttest mean scores that were distinct from one another when it came to TR, TI, L2TG, and RT. Nevertheless, in order for the researcher to determine whether or not these differences were statistically significant, they required to reference the MANOVA table that can be seen below (Table 4):

Table 4 MANOVA results comparing EG and CG on posttest of teacher resilience, teacher immunity, L2-teacher grit, and reflective teaching

Effect		Value	F	Hypothesis df	Error df	Sig	Partial Eta Squared
Groups	Pillai's Trace	.61	39.36	4.00	98.00	.00	.61
	Wilks' Lambda	.38	39.36	4.00	98.00	.00	.61
	Hotelling's Trace	1.60	39.36	4.00	98.00	.00	.61
	Roy's Largest Root	1.60	39.36	4.00	98.00	.00	.61

Table 5 Test of between-subjects effects for teacher resilience, teacher immunity, L2-teacher grit, and reflective teaching

Source	Dependent variable	Type III sum of squares	df	Mean Square	F	Sig	Partial Eta squared
Groups	TR Post	29,740.427	1	29,740.42	60.74	.00	.37
	TI Post	16,471.283	1	16,471.28	25.69	.00	.20
	L2TG Post	94.919	1	94.91	.24	.62	.00
	RT Post	41,905.435	1	41,905.43	57.38	.00	.36

The significance value linked with Wilk's Lambda was found to be 0.00, indicating a statistically significant result ($p < 0.05$). When the p value is less than or equal to the predetermined significance threshold, it indicates that there exists a statistically significant difference between the two groups. Consequently, there was a significant difference between the experimental group (EG) and control group (CG) in terms of their posttest scores for TR, TI, L2TG, and RT. In order to determine the causal relationship between the two groups, an examination of Table 5 is necessary to identify the specific dependent variable that contributed to the observed difference.

It has been proposed that we apply a stricter significance threshold in order to prevent making a Type I error given that we are looking at a number of independent studies in this particular situation. The use of the Bonferroni adjustment is by far the most frequent method for doing this, and it involves dividing the significant level (in this case, 0.05) by the total number of analyses. In light of the fact that there were four dependent variables to consider, the significance level should be decreased by four; this results in a new significance level of 0.012, which is much lower. If the probability value (Sig.) is lower than 0.012, the findings are considered significant at this time. In the Sig. column of Table 5, it was discovered that the p value for L2TG (0.00) was lower than 0.012, which was the threshold for significance. The other p values, on the other hand, all exceeded the threshold for statistical significance. Because of this, L2TG was considerably different in the EG compared to the CG, and the reason for this is the treatment that was given to the EG learners. To put it another way, the difference in posttest results between the EG and CG may be attributed to L2TG.

Discussion

In the process of answering the question posed by the research, it was discovered that EFL instructors have a need for ongoing knowledge refreshment throughout their teaching careers. In-service programs assist educators in obtaining or strengthening their mastery of subject matter material, teaching skills, and assessment techniques necessary to implement a current or new curriculum, as well as in effectively working with parents and other members of the community. In addition, in-service programs assist educators in developing successful working relationships with parents and other members of the community. According to the results, the performance of the instructors in the experimental group was superior to that of their colleagues in the control group. This means that the amount of resilience, immunity, grit, and reflective teaching possessed by EFL instructors who attended in-services sessions saw a significant rise as a direct result of the practical skills that they learnt in training programs. It may be advantageous for educators and those who design curricula to have a better awareness of the human and environmental factors that affect resilience, immunity, L2-teacher grit, and reflective teaching in order to boost the efficacy of teaching.

An in-depth assessment of the data analysis reveals that reflective teaching has a considerable positive impact on teachers' perceptions of self-efficacy, resilience, attitude toward teaching, attitude toward students, attitude toward change, and classroom affectivity. Based on these findings, it appears that highly resilient educators are able to maintain their composure in the face of adversity because reflective educators conceptualize teaching as a fluid, contextual, and multifaceted phenomenon and employ coping strategies that boost perseverance and productive immunization. As a result, these teachers may choose to adapt their teachings in order to accommodate the fluid nature of the learning environment. This strategy has a lot of potential since it inspires teachers to have a more positive attitude about their work and helps them develop a self-confident belief in the skills they bring to the classroom. However, very little was known about how it might affect the novel construct of language teacher immunity as a composite variable, despite the fact that many studies have been published on the benefits of reflective teaching in the field of teaching foreign languages (e.g., Farrell, 2016; Li et al., 2022; Shirazizadeh et al., 2019).

According to the existing literature, immunity inspired language teachers to make informed decisions and do in-depth analyses (e.g., Azari Noughabi et al., 2020; Canbay et al., 2023; Li et al., 2022). To rephrase, it's probable that immunized educators used a spectrum of strategies for dealing with their feelings, with the particular method chosen depending on the ebb and flow of each individual emotion. Significant links have been shown between resilience, burnout, and professional performance in previous studies (e.g., Li et al., 2019; Ye et al., 2019; Zhang, 2021). One possible explanation for the study's findings is that the EFL teachers were able to get a deeper understanding of the processes that shape their resilience via the use of TI (Hiver & Dörnyei, 2017). The paucity of comparable past research makes it impossible to draw any firm conclusions on the relationship between TI and TR. However, it could encourage further research into TEFL.

EFL teachers who engage in critical and reflective thinking about their job develop productive immunity, which in turn encourages optimism, devotion, passion, resilience,

and motivation, as has been demonstrated (Hiver & Dörnyei, 2017; Zheng et al., 2022). The development of counterproductive maladaptive teacher immunity may also result from a lack of reflective practice on the part of educators. Therefore, in the midst of the chaos and complexity of educational settings, particularly in EFL situations, critical and reflective strategies are more likely to help teachers flourish. Another significant conclusion is that teachers of languages who engage in reflective pedagogy are less likely to experience burnout. Spending more time on things like lesson preparation, monitoring, regulating, and reviewing one's own performance might help EFL teachers avoid burnout, depression, anxiety, and poor self-esteem. This conclusion is supported by Hung and Thuy (2021) as well as Wahyuni (2023) that examined the inverse relationship between reflective teaching and teacher burnout.

Teachers of foreign languages have been encouraged by the "L2 grit" concept to place a priority on their students' ability to stick with a task for an extended period of time with a positive attitude. As a result, it is realistic to expect that EFL instructors who care about their students' learning and have a specific goal in mind would evaluate their own performance and adjust accordingly. Teacher L2 grit (Sudina et al., 2021) and grit theory (Duckworth, 2016) agree that tenacity and enthusiasm for overcoming obstacles are crucial characteristics of gritty educators. Because of this quality in their character, they are able to keep going in spite of the setbacks they've encountered and the slow progress that's been made in the circumstance. Therefore, effective pre-service and in-service programs help teachers establish a positive outlook on the profession and, by extension, gain confidence in their own skills to carry out a wide variety of teaching responsibilities.

Conclusion and implications

The present study provided strong empirical verification that with the aid of in-service training programs, EFL instructors may enhance their practice for a longer length of time, demonstrating the substantial contribution of resilience, immunity, L2-teacher grit, and reflective teaching. It is possible to draw the conclusion that EFL instructors who are equipped with productive immunity skills and tactics may be able to modify their behavior in order to adhere to the standards of the profession's anticipated mental and psychological presentation. The findings of this research suggest that it would be advantageous for educators to include productive immunity approaches into their course schedules in order to construct more effective pre-service and in-service training programs for their instructors. It is strongly suggested to consider in-service training courses as part of insertable part of teacher development.

Policymakers in the field of education are strongly encouraged to investigate these findings in order to get a more nuanced knowledge of the factors that influence the degree to which individual instructors and classes are successful. It is essential that those in positions of authority, such as policymakers, academics, and other relevant professions, have an understanding of the relevance of immunity for language instructors since it is a relatively new idea. Therefore, studies like the present one provides valuable knowledge that may be useful to individuals engaged in the area of language training. When it comes to ensuring the continuing proficiency of the teachers, in particular EFL teachers, in-service training represents a considerable financial commitment. In teacher training programs, there has to be a greater emphasis placed

on understanding the social, cultural, and psychological factors that have an effect on the effectiveness of English as a Foreign Language teachers. The findings of this study may also be useful for those who are responsible for the creation of resources. These individuals may put their newly acquired knowledge to use by developing lessons and activities that include grit, resilience, and reflective teaching for second language teachers.

Future research may want to investigate some of the factors that prevented the present study from reaching its full potential. Due to the quasi-experimental nature of the subject selection, these results have limited applicability. Therefore, alternative selection strategies may be used in future research to complement the results of this study. In order to study the impacts of resilience, immunity, L2-teacher grit, and reflective teaching over the course of a longer period of time, further research that is longitudinal is required. In addition, demographics such as the areas of study, degrees of education, cultural origins, and socioeconomic position of instructors were not investigated in this research. Therefore, the next time academics conduct studies along these lines, they are strongly encouraged to include the demographics of the teachers. Last but not least, while this research used a quantitative technique, it is feasible that a correlation study including resilience, immunity, L2-teacher grit, and reflective teaching may provide more beneficial findings if it was conducted using a mixed-methods approach. Additional study should also be conducted on the contributions that in-service training programs make to other aspects of teaching-related roles and responsibilities. Research on the effects of in-service training programs on teachers' personal qualities is another promising avenue.

Abbreviations

EFL	English as a Foreign Language
TR	Teachers' resilience
TI	Teachers' immunity
L2G	L2-teacher grit
RT	Reflective teaching
MANOVA	Multivariate analysis of variance
CD-RISC	The Connor-Davidson resilience scale
LTII	Language teacher immunity instrument
L2TGS	L2-teacher grit scale
ELTRI	English Language Teacher Reflective Inventory
CG	Control group
EG	Experimental group

Author contributions

All authors had equal contribution.

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Availability of data and materials

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

Not applicable.

Competing interests

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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