

## The Development and Validation of an EFL Teachers' Intellectual Perseverance Scale

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EFL Teachers, Intellectual Perseverance, Teaching Resilience, Goal-Orientation, Emotional Resilience

### ABSTRACT

Intellectual perseverance is an emerging construct in research related to teacher classroom resilience. Evidence suggests that teachers with intellectual perseverance are likely to persevere and have commitment when facing challenges. Considering the critical role of intellectual perseverance in language teaching, this study aims to develop and validate a reliable instrument that measures EFL teachers' intellectual perseverance in the face of challenges. Utilizing a mixed-methods approach, the literature was reviewed to conceptualize and identify the key dimensions of intellectual perseverance related to EFL teaching. Based on the findings, an initial scale was developed, including fifty-one items in a pool to be evaluated for face and content validity. Through using the views of the experts some items were modified and 30 items remained. A pilot study involving a criterion-based sampling of 227 EFL teachers was conducted to assess the validity and reliability of the scale. Exploratory Factor analysis and Cronbach's alpha analysis explained a strong internal consistency and construct validity. Based on the analysis, three sub-constructs were found for the 23 remaining items including teaching resilience, goal-orientation, and emotional resilience. The study findings suggest that the developed scale is valid and reliable to be used by language education researchers and policy makers.

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## Introduction

Teachers have a fundamental role in determining the educational experiences of students. More specifically in a language teaching context, language teachers play a more pivotal role as they have to facilitate learning (Horwitz, 2020) and also play the role of motivators (Richards, 2022; Seven, 2020), or even sometimes cultural ambassadors (Fischer, et al., 2021; Wang, 2023).

As a complex and multifaceted field, language education requires an array of skills, knowledge, and personal teaching attributes. Thus, language teaching effectiveness is reliant on teachers' abilities as well as characteristics. Language education entails many challenges to be faced by language teachers (Hossain, 2024; Johnson, 2016; Yang, 2024) and intellectual perseverance can be a vital source of empowerment and success for language teachers (Clemente, 2022; Clemente, 2024; King, 2014; Vanney, et al., 2024).

Intellectual perseverance refers to the attitude of persisting in the face of challenges in order to carry out intellectual activities toward achieving one's intellectual objectives, and it involves exhibiting the qualities of intellectual bravery and self-regulation, which are both forms of intellectual perseverance (Andrea & Mirko, 2021; Battaly, 2017).

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In domains like education, intellectual perseverance is crucial for providing productive participation and achieving deep understanding and success (DiNapoli, 2019). Among the several attributes needed, intellectual perseverance seems to stand out as a significant quality, receiving growing attention especially in educational psychology in the context of teaching (Schöpfer & Hernandez, 2024).

Moreover, intellectual perseverance entails sustained effort and commitment in the face of difficulties and it is an essential element in language education and for language teachers. This is true as language teaching contexts include several obstacles and challenges, comprising learning styles diversity (Ojong, 2023), learners' needs variety (Alshraah, et al., 2023), or cultural variations (Hossain, 2024; Semião, et al., 2023).

The fundamentals of intellectual perseverance can be understood through diverse points, including how different it is in comparison with the related theories like grit and persistent, its role in different domains such as education, and its relationship with other psychological traits (DiNapoli, 2023). Perseverance is often overlapped with the concept of "grit," which combines perseverance and passion for long-term goals (Credé & Tynan, 2021). Intellectual perseverance is combined with grit and persistence, expressly in educational contexts. However, these concepts have distinct definitions and importance. For example, in educational contexts, perseverance deals with prolonged effort and commitment to do problem-solving, this is distinct from the general grit trait or the more general concept of persistence (DiNapoli, 2023; King, 2021).

Comparing the above-mentioned constructs based on their definitions, focus, and characteristics can help us understand the differences. Intellectual perseverance is cognitive in focus (Galița & Bonta, 2023) and applies to understanding complex ideas through critical thinking (Hattie & Timperley, 2007) as well as deep engagement (Seligman, 2018). Grit is passion-based, and it applies to long-term goals. Also, it is behavioral, unlike intellectual perseverance, which is cognitive (Sigmundsson & Haga, 2024). As for persistence, it is defined as a continued sort of effort for a goal notwithstanding challenges. It is considered as both cognitive and behavioral and can be applied to both short-term and long-term goals (Howard & Crayne, 2019).

Researchers such as Howard (2023) consider intellectual perseverance as a challenging matter as it is not quite clear if this is a sort of inherited trait or not. However, other scholars distinguish perseverance as a personality trait (Fernández-Martín et al, 2020) or cognitive character trait (Galița & Bonta, 2023) which can contribute to the effectiveness of knowledge achievement or intellectual inquiry.

Despite the recognized position of intellectual perseverance specifically in education, there exists a remarkable gap in the literature regarding a reliable and valid measurement tool for assessing this construct in the EFL context and for EFL teachers. Thus, there seems to be a need for a tailored instrument which can accurately capture the different dimensions of intellectual perseverance within the EFL teaching context. Accordingly, the present study seeks to answer the following research questions:

RQ1: What are the underlying elements of the EFL teachers' intellectual perseverance?

RQ2: Is the developed EFL teachers' intellectual perseverance scale reliable and valid?

## Intellectual Perseverance

Intellectual perseverance refers to the tendency of overcoming obstacles, in order to continue to perform intellectual actions, following one's intellectual goals. This suggests that perseverance, as part of a broader set of personality traits, contributes to learning outcomes as well as success of individuals (McDermott, et al., 2015). Intellectual perseverance can be regarded as a character that has an important role in success and making progress (Khindri, 2022). An agent exercises intellectually virtuous perseverance when it continues an intellectual endeavor for an appropriate amount of time, with considerable effort, in the pursuit of intellectual goals, despite the presence of obstacles and challenges (King, 2021). Intellectual perseverance entails the ability to make sound judgments regarding which intellectual goals are worth pursuing, principally when there is a convincing belief that success in a project is a genuine opportunity (Clemente, 2022). The trait of intellectual perseverance includes being mentally persistent and resilient with regards to one's epistemic projects.

To intellectually persevere means not to give up and finish the cognitive task while being confronted with challenges and difficulties (Turner, 2022). Intellectual perseverance, as defined by Duckworth (2016), is the skill to stay focused and be determined in the face of challenges and setbacks, and lead to the accomplishment of long-term goals. In the context of EFL teaching, this quality is essential for educators to overcome the unique challenges they often face, such as language barriers, cultural differences, and limited resources (Barkhuizen et al., 2013). Some individuals might be motivated to achieve their intellectual goals and persist in the face of obstacles because those goals bring a reward which is related to financial matters. On the other hand, an agent might be motivated and stay focused because of a sense of competitiveness to see a project through until it is finished. Such a person would show the trait of intellectual perseverance, but the trait would not be an intellectual virtue in this case (Turner, 2022).

The analysis of intellectual perseverance is considered as a disposition to appropriately overcome obstacles to one's precious intellectual goals out of the love of epistemic goals. It involves three key elements that play an important role including an appropriate response to obstacles, the consideration of worthwhile intellectual goals, and an epistemic motivation. The first one means sticking with intellectual projects for a specific amount of time, with respect to the value of the intellectual goals being sought. Secondly, it is crucial to assess the significance and worth of the intellectual goal which is sought for. For example, directing excessive effort on trivial goals cannot be virtuous. Accordingly, there must be a love of learning involved while encountering challenges while will individuals toward learning instead of merely seeking personal or external rewards. Thirdly, it is imperative to focus on intrinsic motivation as a sort of internal strength to overcome obstacles (Clemente, 2022).

Moreover, self-regulation in shaping intellectual perseverance cannot be ignored. Effective self-regulation strategies including goal-setting, self-monitoring, or adaptive learning strategies are essential factors for maintaining and putting effort over time (Zimmerman, 2008). Thus, we need to consider intellectual perseverance as a person-related trait which can be manifested in sustaining high expectations. However, whether such perseverance is echoed in individuals' character or actions depends partly to the individual's approach to challenges (King, 2021).

### **Distinction from Related Constructs**

In modern psychology, perseverance is often studied in relation with resilience and grit or persistence. However, there are distinctions among these terms and understanding such distinctions can help in defining the components of intellectual perseverance. Tiwari and Verma (2023) define grit as characterized by passion as well as sustained persistence for pursuing long-standing goals. It is a mixture of perseverance and passion that entails enduring challenging tasks and maintaining a long-term promise to get a particular goal. Concerning intellectual perseverance and grit, one must consider the fact that the former highlights the emotional aspect of continued effort. Thus, grit requires a deep-rooted passion for an explicit objective, thus, the individual will persevere to pursue the goal. In contrast, intellectual perseverance relies on the cognitive engagement through which one can tackle complex problems, irrespective of the long-term consequence (Wang, et al., 2017)

As for resilience, it began in fields like psychiatry and developmental psychology. It emphasizes the ability to get the upper hand on setbacks (Ledesma, 2014). It has been defined as the ability to bounce back from hindrances, adversities, or challenges. It involves both the emotional strength and the capability of recovering. It differs from intellectual perseverance in its focus on repossession instead of sustained engagement. Accordingly, resilient persons may demonstrate both perseverance and grit. But their main focus will be on coping with and adapting to challenges rather than sustained cognitive effort (Southwick, et al., 2014).

Persistence as another related construct is defined as the sustained effort for achieving a goal in spite of difficulties. This is mostly behavioral rather than cognitive and it is a necessary component of intellectual perseverance (DiNapoli, 2023). However, persistence does not necessarily necessitate any deep engagement or intellectual interest. Thus, as far as an educational context is concerned, intellectual perseverance requires both persistence and a desire to deeply understand.

### **Intellectual Perseverance Significance in Education**

Teachers' formative experiences as learners carve their perseverance and influence their classroom practices. Those who have developed perseverance by supportive relationships are more likely to provide empathetic care and support to their students, specifically in an educational community. This empathy lets students feel a sense of belonging and motivates them to persevere in their studies as well (Matthews, 2020).

Effective classroom management requires perseverance and assertiveness. To make this happen, teachers who persistently apply consistent and fair management strategies to create a productive, safe, and respectful learning environment are required. Such perseverance in sustaining high expectations and consistent practices is required for managing diverse classroom dynamics. Inexperienced teachers' capacity to reflect on and adapt to classroom challenges progresses through experience. Intellectual perseverance helps teachers move beyond mere descriptions of challenges to deeper reflections and problem-solving, which is essential for addressing classroom issues effectively (Jones, et al, 2013). This intellectual perseverance is essential due to its nature for overcoming challenges and doubts that may arise in the teaching profession environment, eventually leading to improved results and productivity for both educators and students (Parker, 2015).

The value of the intellectual virtue of epistemic autonomy has been at the center of attention. The issue that has been raised is how epistemic autonomy may be related to other intellectual virtues. Possibly, epistemic autonomy is closely related to a number of intellectual virtues like curiosity, inquisitiveness, intellectual courage, and intellectual perseverance (Matheson, 2024).

Teachers' intellectual perseverance can lead to the proviso of an autonomy supportive environment. This also entails collaborative problem-solving to promote student independence and resilience, ultimately augmenting performance and positive learning outlooks (Huescar Hernandez et al., 2020; Sengupta-Irving & Agarwal, 2017). As a pedagogical virtue, intellectual perseverance is substantial for teachers to tackle challenges and support students' intellectual development. This virtue includes a disposition to expend serious effort to overcome obstacles in teaching (Ward et al., 2022). The process of enhancing intellectual perseverance among teachers is essential for improving a culture of lasting learning and growth in educational settings (Hynes, 2022).

### **Intellectually Perseverant Teachers**

Literature on language teaching suggests that intellectual perseverance is tied to overall effectiveness and job satisfaction. Several factors may shape intellectual perseverance which include individual factors like personal beliefs or self-efficacy (Dweck, 2006). In language education, teachers possessing higher levels of intellectual perseverance can adapt themselves to the altering educational environments. They can also try new teaching strategies and be persistent in their struggles toward students' success (Soodmand Afshar & Doosti, 2016). Also, they are expected to be more operative in facilitating learning experiences and improving students' critical thinking skills (Hattie & Timperley, 2007). They can create environments that support student autonomy through creating and improving a supportive and motivating classroom atmosphere, even in the face of challenges (Huescar Hernandez et al., 2020).

It also needs to be mentioned that intellectual perseverance can be enhanced. Teachers can develop their intellectual perseverance through different strategies and approaches. Informal learning and mentorship through the contribution of trusted colleagues rather than formal support structures, can be used. So, choosing their own mentors, who are often peers teaching the same subjects, helps create a supportive and collaborative environment that makes perseverance develop (Colognesi et al., 2020). Critical thinking and character development practices are other ways that involve nurturing intellectual virtues like perseverance. Teachers can develop these characters by creating opportunities for students to engage in critical analysis and self-reflection, which also enhances their own perseverance (Bradberry & De Maio, 2019). Such improvements can be done through professional development programs, making teachers engaged in activities that promote higher-order cognitive skills, such as exploration and experimentation with new practices, and expansion of pedagogical knowledge, can enhance their intellectual perseverance. To put it into action, these activities should be involved into teacher training plans and professional development programs (Okanlawon, 2022). Additionally, since intellectual perseverance has been associated with increased resilience, problem-solving skills, and emotional intelligence, it is considered a key point in tackling the complexities of the EFL teaching profession (Dweck, 2006).

## Method

A sequential exploratory mixed method was employed involving both qualitative and quantitative methods in a sequential method. The first phase of the study included reviewing of the literature to conceptualize the constructs for scale development (Kyriazos & Stalikas, 2018). To analyze the collected data from the literature, emergent thematic coding was used. Coding in qualitative research is consisted of processes that allow collected data to be organized, categorized, and thematically sorted (Williams & Moser, 2019). The second stage followed a quantitative study approach to evaluate the psychometric properties of the instrument through employing reliability analysis and exploratory factor analysis.

### Participants and Setting

The sample included 227 (67 males and 160 females) pre-service and in-service English teachers who taught at institutions, governmental schools, primary schools, private schools, private classes and universities through convenience sampling. This kind of sampling is conducted based on availability and convenience of the researchers and is very common when probability sampling types are not feasible. A sample size of minimum 100 is required for conducting exploratory factors analysis (Jung & Lee, 2011). Other researchers also suggest that the number of participants must be 3 to 20 times of the number of variables (Mundfrom, et al., 2005). The age range of the EFL teachers was from 18 years old up to 60. The participants' age ranges were categorized into six distinct groups of 18-23 years (62), 24-29 years (99), 30-35 years (26), 36-40 years (20), 41-45 years (12), and above 45 years (8). Participants also possessed varying levels of academic qualifications including Bachelor's degree (97 participants), Master's degree (117 participants), and Doctorate (13 participants). The participants reported differing years of teaching experience, categorized as less than 5 years (126 participants), 5-10 years (59 participants), 11-15 years (18 participants), and over 15 years (24 participants).

### Instrument Development

To develop the instrument a systematic procedure based on Slavec and Drnovšek (2012) was employed. As the first step, the literature entailing intellectual perseverance was reviewed for the conceptualization of intellectual perseverance. A review of the literature helps to ensure the construct definition aligns with related theory and research in the field, while at the same time helping the researchers identify survey scales or items that could be used or adapted for the current purpose. Then, the survey items were written based on the literature. While the ideal number of items depends on several factors, including the complexity of the construct and the level at which one intends to assess it, the initial number of items in the item pool included 51. After that the response options to be used concerning suitability were selected which were the Likert scale based on the items' contents.

The next step included item face and content validation through expert views. The experts included 5 researchers with a solid background in applied linguistics and educational psychology. Face validity refers to what it is supposed to be measured by a test or questionnaire which has been developed (Bolarinwa, 2015). Content validity refers to the degree that a test or questionnaire comprehensively covers the domain or construct which intends to measure. This process involves evaluating whether the test items fully represent all aspects of the construct and are relevant to the subject matter. Content validity is often assessed by experts in the field

(Dörnyei & Taguchi, 2009; Polit & Beck, 2006; Rattray & Jones, 2007). Thus, a group of five experts was asked to provide comments, also inter-rater agreement was also considered. Based on the comments, additions and modifications were done and a number of 30 items remained. The questionnaire was web-based, including a Likert of 5-point from strongly agree to strongly disagree.

Finally, construct validation was conducted. Construct validity refers to the amount which a test or questionnaire accurately measures the theoretical construct it is about to measure. It involves demonstrating that the test relates to other measures as theoretically expected. In this study Exploratory Factor Analysis (EFA) as a statistical technique was used to identify the basic factor structure of the set of items. It helps discover the number and nature of hidden variables which explain the patterns of correlations among test items without imposing any presumed structure (Hair, et al, 2019; Watkins, 2018). For reliability, Cronbach’s Alpha evaluation was done through test-retest analysis. This relates to the correlation of items. High internal consistency (a higher Cronbach’s Alpha value) suggests that the items measure the same specific concept or construct (Tavakol & Dennick, 2011).

### Data Analysis and Results

Through reviewing the existing literature, researchers can generate a list of items that can inform the development of the scale through accurately defining the target construct (Kyriazos & Stalikas, 2018; Morgado et al., 2017; Ricci, et al. 2019; Slavec & Drnovšek, 2012).

### Qualitative Data Analysis Results

The qualitative data of the present study included the definitions found in an extensive review of the literature for ‘intellectual perseverance. In order to elicit the mentioned concept as well as for the purpose of generating the items, the literature reviewing was conducted (Ricci, et al. 2019).

Based on the study objective that was the development of a scale to measure intellectual perseverance of language teachers, emergent thematic coding was conducted. To achieve this purpose, the patterns and themes identification was carried out (Miles, et al., 2014; Stemler, 2000). To do so, following Roulston and Choi (2017) and Ezzy (2013), thematic coding was done employing the three stages of open, axial, and selective coding. To ensure reliability two coders coded the data who were experts in qualitative analysis.

**Table 1**

*Emergent themes based on the qualitative analysis of the literature*

Source	Item	Notes
	In my language class ....	

1	<p>Battaly (2017)</p> <p>King ( 2021)</p> <p>Credé, et al. (2017)</p> <p>Duckworth (2016)</p> <p>Dweck (2006)</p> <p>Huang &amp; Lajoie (2021)</p> <p>Sisk, et al. (2018)</p> <p>Alrefaai (2020)</p> <p>Villacañas de Castro (2017)</p>	<p>1. I persist in my teaching efforts even when faced with setbacks.</p> <p>2. I am willing to engage in thoughtful reflection in order to improve my teaching.</p> <p>3. I am not easily discouraged by negative feedback of my work.</p> <p>4. I am willing to explore new ideas in my teaching, even if they are strange.</p>	
2	<p>Turner (2022)</p> <p>King ( 2021)</p> <p>Galița &amp; Bonta (2023)</p> <p>Vanney, et al. (2024)</p> <p>Montas, et al (2021)</p> <p>Credé, et al. (2017)</p> <p>Saifullah &amp; Khan (2022)</p> <p>Wang, et al. (2017)</p>	<p>5. I regularly reflect on my teaching practices to overcome challenges and improve my effectiveness.</p> <p>6. I adapt my teaching strategies when I encounter obstacles to ensure my students' learning.</p> <p>7. I am willing to tackle difficult tasks in my teaching, even if they require significant time and effort.</p> <p>8. I respond to setbacks in my teaching with determination to improve and succeed.</p>	<p>Can merge with 1 &amp; 2</p> <p>Can merge with 1 &amp; 5</p>
3	<p>Barkhuizen, et al. (2013)</p> <p>Dörnyei &amp; Ushioda (2021)</p> <p>Duckworth (2016)</p> <p>Galița &amp; Bonta (2023)</p> <p>Dweck (2006)</p> <p>Khindri &amp; Rangnekar (2022)</p> <p>Totsika &amp; Hastings (2009)</p> <p>O'Neill &amp; Thomson (2013)</p> <p>Soodmand Afshar &amp; Doosti (2016)</p> <p>Montas, et al (2021)</p> <p>Credé, et al. (2017)</p> <p>Saifullah &amp; Khan (2022)</p> <p>Wang, et al. (2017)</p> <p>Duckworth &amp; Eskreis-Winkler (2020)</p> <p>Dweck (2016).</p> <p>Fischer, et al. (2021).</p> <p>Hochanadel &amp; Finamore (2015)</p> <p>Komaraju (2013)</p> <p>Ryan &amp; Deci (2020)</p> <p>Yeager et al. (2022).</p> <p>Zimmerman &amp; Schunk (2011)</p>	<p>9. I persist in my teaching efforts even when faced with significant challenges.</p> <p>10. I am willing to put in extra effort to help my students succeed, even if it requires additional time and work.</p> <p>11. I do not give up easily when my students struggle to grasp a concept.</p> <p>12. I am willing to try new teaching strategies, even if they are unfamiliar.</p> <p>13. I remain committed to my professional goals.</p> <p>14. I adapt my teaching methods to accommodate the diverse needs of my students.</p> <p>15. I actively seek out opportunities for professional growth to enhance my teaching skills.</p> <p>16. I maintain a positive attitude even when faced with challenging situations in my teaching.</p>	<p>Can merge with 1,5 &amp; 8</p> <p>Can merge with 4</p> <p>Can merge with 6</p>

4	<p>King ( 2021)</p> <p>Galița &amp; Bonta (2023)</p>	<p>17. I persist in my teaching efforts even when I encounter complicated problems with my students' language learning.</p> <p>18. I take the time to understand the complexities of the challenges my students face in learning a new language</p> <p>19. I encourage my students to seek help when they feel overwhelmed or frustrated with their language tasks.</p> <p>20. I adapt my teaching strategies to address the unique challenges that arise in my language classroom.</p> <p>21. I regularly reflect on my teaching practices to improve my ability to support students facing difficulties.</p>	<p>Can merge with 1,5 8 &amp; 9</p> <p>Can merge with 10 &amp; 7</p> <p>Can merge with 6 &amp; 14</p> <p>Can merge with 1,2 &amp; 5</p>
5	<p>Credé, et al. (2017)</p> <p>Khindri &amp; Rangnekar (2022)</p> <p>Totsika &amp; Hastings (2009)</p> <p>O'Neill &amp; Thomson (2013)</p> <p>Duckworth (2016)</p> <p>Dweck (2006)</p> <p>Vanney, et al. (2024)</p> <p>Huang &amp; Lajoie (2021)</p> <p>Sisk, et al. (2018)</p>	<p>22. I am motivated by a desire to acquire and share knowledge, which helps me persevere in my teaching.</p> <p>23. I seek help and resources when I face challenges in my teaching, rather than giving up</p> <p>24. I am aware of my personal obstacles and strive to overcome them in my teaching practice</p>	
6	<p>Credé, et al. (2017)</p> <p>Duckworth, et al. (2016)</p> <p>Dweck (2006)</p> <p>Khindri &amp; Rangnekar (2022)</p> <p>Totsika &amp; Hastings (2009)</p> <p>O'Neill &amp; Thomson (2013)</p> <p>Huang &amp; Lajoie (2021)</p> <p>Sisk, et al. (2018)</p>	<p>25. I am committed to overcoming challenges in my teaching, even when they are difficult</p> <p>26. I believe that my intelligence and teaching abilities can be developed through effort and perseverance.</p> <p>27. My motivation to teach is driven by a desire to achieve and share intellectual goals.</p>	<p>Can merge with 13 &amp; 4</p>
7	<p>Vanney, et al. (2024)</p>	<p>28. I continue to pursue my intellectual projects, even when faced with difficulties that make it challenging to achieve my goals.</p>	
8	<p>Dweck (2006)</p>	<p>29. I believe that my intellectual abilities can be developed through effort.</p> <p>30. I believe that intelligence and talent can be improved with hard work and dedication.</p>	
9	<p>Dweck (2006)</p> <p>Khindri &amp; Rangnekar (2022)</p> <p>Totsika &amp; Hastings (2009)</p> <p>O'Neill &amp; Thomson (2013)</p> <p>Dweck &amp; Yeager, (2019)</p>	<p>31. I am motivated to pursue teaching goals because I find them personally fulfilling</p> <p>32. I feel a sense of autonomy in my teaching approach.</p> <p>33. I actively monitor my teaching strategies to improve my effectiveness</p> <p>34. I feel satisfied with my accomplishments as a language teacher, despite the challenges I encounter</p>	<p>Motivation</p> <p>Reflection</p>

	Vansteenkiste, et al. (2010) Zimmerman & Schunk (2011) Galița & Bonta (2023) Duckworth & Eskreis-Winkler (2020)  Parker (2015) Yeager et al. (2022) Luthans, et al. (2013)	35. I effectively manage stress in order to stay committed to my teaching objectives	Can merge with 1,2 & 5
10	Galița & Bonta (2023) Vanne, et al. (2024)	36. I am mentally resilient when my teaching strategies do not work as planned. 37. I tend to continue working on lesson plans or educational projects, even if I encounter obstacles 38. I believe that perseverance is essential in achieving successful outcomes in language teaching	Can merge with 6 & 24
11	Hattie & Timperley (2007) DiNapoli (2023)	39. I approach difficult topics in the curriculum with enthusiasm and a problem-solving attitude. 40. I embrace complex problems in my teaching practice and work through them systematically.	Can merge with 1,2, & 5
12	Khindri & Rangnekar (2022) Totsika & Hastings (2009) O'Neill & Thomson (2013) Qingyan et al. (2023) Montas, et al (2021) Credé, et al. (2017) Saifullah & Khan (2022) Wang, et al. (2017)	41. I actively pursue professional development opportunities to enhance my teaching. 42. I am resilient when confronted with unexpected challenges in my teaching career	Can merge with 15
13	Alrefaai (2020) Villacañas de Castro (2017)	43. I am able to manage my emotions effectively when faced with difficult or stressful situations in the classroom	
14	Huéscar Hernández, et al. (2020) Sengupta-Irving & Agarwal (2017) Ward, et al. (2022) Sukarno, et al. (2024)	44. I value collaborative problem-solving in my language classroom. 45. I persist in helping my students overcome challenges during group activities.	Collective Problem-Solving Can merge with 39
15	Colognesi, et al. (2020) Ward, et al. (2022) Clemente (2022) Okonlawon (2022)	46. I feel equipped to handle unexpected difficulties during lessons. 47. I believe that engaging in inquiry-oriented discussions enhances my ability to persevere in teaching. 48. I encourage my students to engage in critical thinking, which also helps me develop my perseverance. 49. I create opportunities for self-reflection in my classroom to foster perseverance in both myself and my students.	Navigating Instructional Obstacles Professional development Critical Thinking and Character Development
16	Huéscar Hernández, et al. (2020) Matthews (2020) Keese, et al. (2018) Jones, et al. (2013)	50. I strive to create a classroom environment that supports student autonomy. 51. I feel capable of adapting my teaching strategies in response to classroom difficulties.	Classroom Management

### Quantitative Data Analysis Results

This section encompasses the preliminary analysis of the collected data and the exploratory factor analysis (EFA) of the scale as well as the reliability analysis.

Table 2 summarizes the descriptive statistics of the proposed scale, including the mean, standard deviation, variance, and range (minimum and maximum values).

Also, the normality of the dataset was assessed using Skewness and kurtosis values:

- Skewness: Measures the symmetry of the data distribution.
- Kurtosis: Indicates the distribution's tail weight.

**Table 2**

*Descriptive statistics for the proposed Scale*

Intellectual Perseverance	
Mean	94.3040
Median	94.0000
Std. Deviation	9.4882
Variance	90.0270
Range	69.0000
Minimum	46.0000
Maximum	115.0000

According to West, et al. (1995), Skewness and Kurtosis values within  $\pm 1$  are considered "very good," while values within  $\pm 2$  are "acceptable." The Skewness and Kurtosis statistics fell within the "very good" and "unacceptable" ranges, respectively. Additionally, the Kolmogorov-Smirnov test was conducted, yielding a p-value of 0.057, confirming the normality of the data distribution. The results are detailed in Table 3.

**Table 3**

*Test of Normality for the Intellectual Perseverance Data*

	Scale name
Skewness	-0.634
Std. Error of Skewness	0.162
Kurtosis	2.387
Std. Error of Kurtosis	0.322
K-S test statistic	0.059
K-S sig.	0.057

Table 4 presents Cronbach's alpha reliability coefficients for the proposed scale and its factors. A reliability threshold of 0.7 is considered good, while 0.8 is very good (Ursachi et al.,

2015). Despite factor 3 slightly falling below this threshold, it was retained to maintain full-scale reliability. The results of the test-retest analysis are presented as follows.

**Table 4**

*Reliability Statistics*

Factor	Reli	No. Items
1	0.837	11
2	0.742	6
3	0.697	6
Full scale	0.871	23

The exploratory factor analysis (EFA) aimed to identify the underlying structure of the scale using SPSS (Version 27). Key steps and findings are detailed below. Data suitability for factor analysis was checked as follows (Table 5)

- Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy: 0.880 (above the threshold of 0.60).
- Bartlett’s Test of Sphericity: Statistically significant ( $p < 0.005$ ), indicating sufficient inter-item correlations.

**Table 5**

*KMO and Bartlett’s Test*

<b>KMO and Bartlett's Test</b>			
Kaiser-Meyer-Olkin Adequacy.	Measure	of Sampling	.880
Bartlett's Sphericity	Test	of Approx. Chi-Square	1979.729
		df	435
		Sig.	.000

Using principal axis factoring (PAF) with Varimax rotation, eight factors with eigenvalues  $>1$  were initially identified. The purpose was to identify the underlying components that could explain the variance in answers among the items. Based on the results, these factors explained the following percentages of variance: 26.035%, 6.840%, 4.797%, 4.148%, 3.950%, 3.740%, 3.573%, and 3.531% (Table 6). The number of factors to be retained was evaluated through eigenvalue threshold (greater than 1). Also, the scree plot presents a visual illustration (figure 1) for each factor.

**Table 6**

*Principal Component Analysis for the initial items*

<b>Total Variance Explained</b>			
Component	Initial Eigenvalues	Extraction Sums of Squared	Rotation Sums of Squared
		Loadings	Loadings

	% of			% of			% of		
	Tota	Varianc	Cumulativ	Tota	Varianc	Cumulativ	Tota	Varianc	Cumulativ
	l	e	e %	l	e	e %	l	e	e %
1	7.81	26.035	26.035	7.81	26.035	26.035	4.65	15.509	15.509
2	2.05	6.840	32.875	2.05	6.840	32.875	3.66	12.219	27.729
3	1.43	4.797	37.672	1.43	4.797	37.672	2.98	9.943	37.672
4	1.24	4.148	41.820						
5	1.18	3.950	45.769						
6	1.12	3.740	49.509						
7	1.07	3.573	53.082						
8	1.05	3.531	56.612						
9	.984	3.279	59.892						
10	.947	3.156	63.048						
11	.881	2.936	65.984						
12	.826	2.754	68.738						
13	.814	2.715	71.453						
14	.770	2.567	74.020						
15	.719	2.396	76.415						
16	.672	2.242	78.657						
17	.641	2.137	80.794						
18	.605	2.017	82.810						
19	.577	1.923	84.733						
20	.564	1.880	86.613						
21	.547	1.825	88.438						
22	.517	1.722	90.161						
23	.444	1.480	91.641						
24	.419	1.397	93.038						
25	.392	1.308	94.346						
26	.383	1.275	95.621						
27	.368	1.228	96.848						
28	.356	1.187	98.036						
29	.305	1.015	99.051						
30	.285	.949	100.000						

Extraction Method: Principal Component Analysis.

Table 7 depicts the rotated factor matrix for all the three components of the proposed scale.

**Table 7**

*Rotated Factor Matrix*

		Component		
		1	2	3
q1	I persist in my teaching effort even when faced with setbacks.	0.418		
q3	I regularly reflect on my teaching practices to overcome challenges.	0.682		
q5	I do not give up easily when my students struggle to grasp a concept.	0.476		
q7	I remain committed to my professional goals.	0.556		
q8	I adapt my teaching methods to accommodate the diverse needs of my students.	0.480		
q10	I regularly reflect on my teaching practices to improve my ability to support students facing difficulties.	0.735		
q11	I am motivated by a desire to acquire and share knowledge in my field.	0.476		
q12	I seek help and resources when I face challenges in my teaching, rather than giving up.	0.663		
q13	I am aware of my personal obstacles and strive to overcome them in my teaching practice.	0.572		
q16	I believe that my intellectual abilities can be developed through effort.	0.425		
q25	I actively pursue professional development opportunities to enhance my teaching.	0.544		
q15	My motivation to teach is driven by a desire to achieve and share intellectual goals.		0.661	
q17	I am motivated to pursue my teaching goals because I find them personally fulfilling.		0.550	
q19	I feel satisfied with my accomplishments as a language teacher, despite the challenges I encounter.		0.553	
q27	I value collaborative problem-solving activities in my language classroom.		0.501	
q28	I persist in helping my students overcome challenges during group activities.		0.563	
q30	I believe that engaging in inquiry-oriented discussions enhances my ability to persevere in teaching.		0.687	
q2	I am not easily discouraged by negative feedback of my teaching.			0.530
q9	I maintain a positive attitude even when faced with challenging situations in my teaching.			0.602
q20	I effectively manage my stress in order to stay committed to the teaching objectives.			0.692
q21	I am mentally resilient when my teaching strategies do not work as planned.			0.614
q26	I am able to manage my emotions effectively when faced with difficult or stressful situations in the classroom.			0.574
q29	I feel equipped to handle unexpected difficulties during lessons.			0.570

		Component		
		1	2	3
q4	I am willing to put in extra effort to help my students succeed, even if it requires additional time and work.	0.431	0.427	
q6	I am willing to try new teaching strategies, even if they are unfamiliar.			
q14	I believe that my teaching abilities can be developed through perseverance.			
q18	I am autonomous in my teaching approach.			
q22	I tend to continue working on lesson plans or educational projects, even if I encounter obstacles.			
q23	I believe that perseverance is essential in achieving successful outcomes in language teaching.	0.485	0.403	
q24	I embrace complex problems in my teaching practice and I systematically work through them.			

Items with cross-loadings or low factor loadings (<0.30) were iteratively removed, resulting in a refined 23-item scale (Table 8). Each item's loading on the extracted factors was evaluated accordingly. Items having loadings below 0.30 were considered weak and were considered as candidates for removal. Additionally, those items that showed cross-loadings were scrutinized. Thus, this process continued until an interpretable factor structure emerged, leaving the scale with 23 items.

**Table 8**

*Rotated Factor Matrix after Removing the Items*

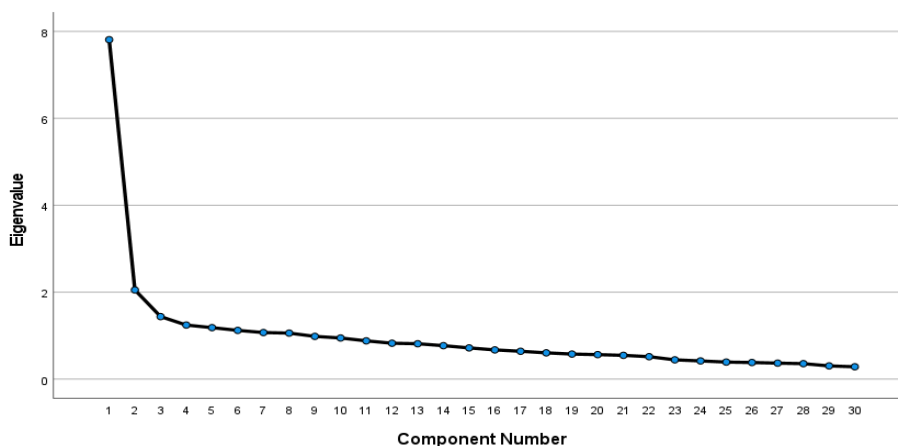
		Component		
		1	2	3
q1	I persist in my teaching effort even when faced with setbacks.	0.418		
q3	I regularly reflect on my teaching practices to overcome challenges.	0.682		
q5	I do not give up easily when my students struggle to grasp a concept.	0.476		
q7	I remain committed to my professional goals.	0.556		
q8	I adapt my teaching methods to accommodate the diverse needs of my students.	0.480		
q10	I regularly reflect on my teaching practices to improve my ability to support students facing difficulties.	0.735		
q11	I am motivated by a desire to acquire and share knowledge in my field.	0.476		
q12	I seek help and resources when I face challenges in my teaching, rather than giving up.	0.663		
q13	I am aware of my personal obstacles and strive to overcome them in my teaching practice.	0.572		
q16	I believe that my intellectual abilities can be developed through effort.	0.425		
q25	I actively pursue professional development opportunities to	0.544		

	Component		
	1	2	3
enhance my teaching.			
q15 My motivation to teach is driven by a desire to achieve and share intellectual goals.		0.661	
q17 I am motivated to pursue my teaching goals because I find them personally fulfilling.		0.550	
q19 I feel satisfied with my accomplishments as a language teacher, despite the challenges I encounter.		0.553	
q27 I value collaborative problem-solving activities in my language classroom.		0.501	
q28 I persist in helping my students overcome challenges during group activities.		0.563	
q30 I believe that engaging in inquiry-oriented discussions enhances my ability to persevere in teaching.		0.687	
q2 I am not easily discouraged by negative feedback of my teaching.			0.530
q9 I maintain a positive attitude even when faced with challenging situations in my teaching.			0.602
q20 I effectively manage my stress in order to stay committed to the teaching objectives.			0.692
q21 I am mentally resilient when my teaching strategies do not work as planned.			0.614
q26 I am able to manage my emotions effectively when faced with difficult or stressful situations in the classroom.			0.574
q29 I feel equipped to handle unexpected difficulties during lessons.			0.570

The scree plot analysis and variance explained led to the retention of a three-factor solution, cumulatively accounting for 37.672% of the variance (Figure 1). The scree plot illustrates the eigenvalues and confirms the robustness of the three-factor solution.

**Figure 1**

*Scree Plot Showing the Number of Factors*



Factors were interpreted based on their content and theoretical underpinnings:

- Factor 1(teaching resilience): Items 1, 3, 5, 7, 8, 10, 11, 12, 13, 16, and 25.
- Factor 2 (goal-orientation): Items 15, 17, 19, 27, 28, and 30.
- Factor 3 (emotional resilience): Items 2, 9, 20, 21, 26, and 29.

Table 9 presents the factors and their related items as follows. The factors including teaching resilience, goal-orientation, and emotional resilience are presented with their items.

**Table 9**

*The Three Factors and their Related Items*

Factors	No.	Item
Teaching Resilience	q1	I persist in my teaching effort even when faced with setbacks.
	q3	I regularly reflect on my teaching practices to overcome challenges.
	q5	I do not give up easily when my students struggle to grasp a concept.
	q7	I remain committed to my professional goals.
	q8	I adapt my teaching methods to accommodate the diverse needs of my students.
	q10	I regularly reflect on my teaching practices to improve my ability to support students facing difficulties.
	q11	I am motivated by a desire to acquire and share knowledge in my field.
	q12	I seek help and resources when I face challenges in my teaching, rather than giving up.
	q13	I am aware of my personal obstacles and strive to overcome them in my teaching practice.
	q16	I believe that my intellectual abilities can be developed through effort.
	q25	I actively pursue professional development opportunities to enhance my teaching.
	q15	My motivation to teach is driven by a desire to achieve and share intellectual goals.
	q17	I am motivated to pursue my teaching goals because I find them personally fulfilling.
	q19	I feel satisfied with my accomplishments as a language teacher, despite the challenges I encounter.
	Goal-orientation	q27
q28		I persist in helping my students overcome challenges during group activities.
q30		I believe that engaging in inquiry-oriented discussions enhances my ability to persevere in teaching.
q2		I am not easily discouraged by negative feedback of my teaching.
q9		I maintain a positive attitude even when faced with challenging situations in my teaching.
Emotional Resilience	q20	I effectively manage my stress in order to stay committed to the teaching objectives.
	q21	I am mentally resilient when my teaching strategies do not work as planned.

- I am able to manage my emotions effectively when faced with difficult  
 q26 or stressful situations in the classroom.  
 q29 I feel equipped to handle unexpected difficulties during lessons.

Table 10 presents the item total statistics. Also it entails the Cronbach's alpha if the item is deleted.

**Table 10**

*Item-Total Statistics*

	Scale Mean if Item Deleted	Scale Variance Item Deleted	Corrected if Item-Total Correlation	Cronbach's Alpha if Item Deleted
I persist in my teaching effort even when faced with setbacks.	90.2907	84.358	.333	.869
I regularly reflect on my teaching practices to overcome challenges.	90.1410	83.715	.427	.866
I do not give up easily when my students struggle to grasp a concept.	89.9692	83.481	.459	.865
I remain committed to my professional goals.	89.9780	82.880	.519	.864
I adapt my teaching methods to accommodate the diverse needs of my students.	90.0308	83.623	.504	.864
I regularly reflect on my teaching practices to improve my ability to support students facing difficulties.	90.1013	82.941	.517	.864
I am motivated by a desire to acquire and share knowledge in my field.	90.0617	82.571	.495	.864
I seek help and resources when I face challenges in my teaching, rather than giving up.	89.9383	82.023	.564	.862
I am aware of my personal obstacles and strive to overcome them in my teaching practice.	90.1674	82.565	.527	.863
I believe that my intellectual abilities can be developed through effort.	90.0396	83.941	.457	.866
I actively pursue professional development opportunities to enhance my teaching.	90.1145	81.429	.526	.863

	Scale Mean if Deleted	Scale Variance if Item Deleted	Corrected if Item-Total Correlation	Cronbach's Alpha if Item Deleted
My motivation to teach is driven by a desire to achieve and share intellectual goals.	90.2291	82.620	.442	.866
I am motivated to pursue my teaching goals because I find them personally fulfilling.	90.2511	81.490	.502	.864
I feel satisfied with my accomplishments as a language teacher, despite the challenges I encounter.	90.3392	80.827	.480	.865
I value collaborative problem-solving activities in my language classroom.	90.0837	84.272	.377	.868
I persist in helping my students overcome challenges during group activities.	90.0132	82.341	.544	.863
I believe that engaging in inquiry-oriented discussions enhances my ability to persevere in teaching.	90.3304	82.196	.489	.864
I am not easily discouraged by negative feedback of my teaching.	90.5815	82.041	.365	.869
I maintain a positive attitude even when faced with challenging situations in my teaching.	90.2819	82.256	.421	.867
I effectively manage my stress in order to stay committed to the teaching objectives.	90.3128	83.888	.370	.868
I am mentally resilient when my teaching strategies do not work as planned.	90.7004	83.423	.328	.870
I am able to manage my emotions effectively when faced with difficult or stressful situations in the classroom.	90.3392	84.137	.311	.870
I feel equipped to handle unexpected difficulties during lessons.	90.3921	82.585	.424	.866

### Discussion

The present study employed a mixed method with the attempt to develop and validate an EFL Teachers' Intellectual Perseverance Scale (ETIP). The results of the analysis of data highlight three fundamental constructs associated with intellectual perseverance including teaching resilience, goal orientation, and emotional resilience.

Teaching resilience encompasses the educators' ability to persevere in face of challenges and setbacks in classroom environments. Intellectual perseverance has been linked to increased resilience, problem-solving skills, and emotional intelligence, which are essential for detecting the complexities and constructions of the EFL teaching profession (Dweck, 2006). Resilience is an essential factor in raising interest and engagement in educational settings and it is a central feature of an educator's cognitive and emotional repertoire (Barkhuizen, et al., 2013). One of such educational settings belongs to language teaching contexts where resilience can have a crucial role. This is because teachers commonly encounter challenges due to varied students' needs, cultural differences, or curricular loads (Stewart & Reinders, 2024).

Educators who have higher levels of resilience are more expected to approach their teaching with a sense of self-efficacy and confidence both of which are necessary in intellectual perseverance (Fathi et al., 2021; Hiver & Dörnyei, 2017). Resilient educators show higher levels of adaptability and employ better coping strategies to improve their teaching effectiveness (Mansfield, et al., 2016). Moreover, the unavoidable challenges that might be faced by EFL teachers make emotional resilience principally critical. Challenges such as managing frustration over language barriers or the addressing of language learners' diverse learning paces can be included within this area. This can help EFL teachers with navigating the pressures within the classroom while at the same time fosters a long-term commitment in teachers to cater for their professional growth as well as student success.

Having goal orientation is another component found in this study. In fact intellectual perseverance is the ability to overcome challenges and obstacles in seeking intellectual goals. It involves long-lasting effort and resilience when facing problems or difficulties (Battaly, 2017; DiNapoli, 2023; King, 2021; Turner, 2022). It is also clarified by Akin and Arslan (2014) that strong goal orientation leads to efficiency in exertions amidst challenges that can ultimately bring about the acknowledgment of long-term objectives. A study conducted by Sadeghi et al. (2021) maintains that language teachers who have a growth mindset which is a closely related factor to goal orientation are more likely to embrace encounters and consider failures as chances for growing. Moreover, goal orientation can affect how language teachers will respond to setbacks. Research suggests that teachers who have higher goal orientation are more likely to adopt coping strategies if facing obstacles (Hiver & Dörnyei, 2017).

The third factor defining intellectual perseverance is emotional resilience. It relates to the individual's ability to improve from setbacks and preserve emotional constancy. Muhammad et al. (2022) refer to the fact that possessing higher levels of emotional resilience equips individuals to persist through challenges. This component is an indispensable issue for language teachers as they often face various dynamics within the classrooms. Research indicates that emotionally resilient teachers can handle classroom challenges, which directly impacts their intellectual perseverance (Xue, 2021). Such educators can maintain their commitment to their teaching profession despite setbacks and persist in achieving their goals. Emotional resilience can equip teachers with the ability to manage tension effectively which will be contributing to their intellectual perseverance as they remain dedicated (Hiver & Dörnyei, 2017). Through enhancing emotional resilience, EFL teachers can manage the intricacies of language learning settings which will result in a more positive educational atmosphere.

### Conclusion

The present study was an attempt to develop and validate the EFL Teachers' Intellectual Perseverance Scale (ETIP). The measure was aimed to be a significant tool intended to measure

the intellectual perseverance of EFL teachers. Through employing a mixed-methods approach, the researcher provided comprehensive insights into the psychometric properties of the scale. The analysis revealed three fundamental constructs, including teaching resilience, goal orientation, and emotional resilience.

A reliable and valid 23-item scale was concluded, explaining three distinct and interconnected factors that underlined EFL teachers' intellectual perseverance. The first factor, teaching resilience, requires the ability of navigating encounters in classroom settings. The literature also highlights resilience as an underlying factor of intellectual perseverance (Dweck, 2006). Resilience authorizes individuals to make progress from failures, get accustomed to changing situations, and persevere in their cognitive quests. Besides, resilience is associated with emotional regulation, which allows persons to thrive in demanding situations or manage anxiety which may otherwise obstruct their intellectual engagement (Seligman, 2018).

The other underlying component based on the analysis was found as goal Orientation. Goal Orientation encompasses the purpose to pursue intellectual goals in spite of facing obstacles (Turner, 2022). It is also believed that teachers with a strong goal orientation are more likely to accept effective coping policies when confronted with challenges (Credé & Tynan, 2021). Goal orientation can shape the cognitive, emotional, as well as behavioral reactions to challenges. Goal orientation will also lead to increased effort and persistence (Elliot & McGregor, 2001).

The last component was found as emotional resilience which pertains to an individual's capacity to maintain emotional stability. This aspect is chiefly critical for EFL teachers in their dynamic teaching settings. Emotionally resilient teachers can effectively manage tension, to enhance their effectiveness as well as commitment to their teaching profession (Alrefaai & Shah, 2020). Emotional resilience maintains intellectual perseverance, enabling individuals to preserve focus and effort in the face of challenges. It denotes to the capability of adapting to tension, striving, and modification while preserving psychological well-being (Southwick et al., 2014). This capability aids individuals to tackle setbacks, which is central in sustaining intellectual engagement (Soodmand Afshar & Doosti, 2016; Southwick et al. 2014).

The analysis of the literature defining and conceptualizing intellectual perseverance also supports these underlying constructs. Based on the data analysis, it was also found that the developed scale enjoys an acceptable reliability index of 0.87 (with the underlying factors of teaching resilience (0.83), goal-orientation (0.74), and emotional resilience (0.69) ).

Thus, it can be safely employed in studies related to language education, educational psychology, teacher professional development and related areas of research. The study findings have profound implications for EFL teacher training programs as well as professional development courses. Training programs may incorporate strategies that help in developing these attributes which will in turn enable the teachers to improve their intellectual perseverance and navigate their roles complexities. For example, workshops on emotional regulation can be provided to enhance intellectual perseverance or goal-setting exercises can be delivered to boost intellectual perseverance.

Future researchers can explore the applicability and validity of this scale in different cultural contexts to test it in various regions to observe if the constructs still remain. Other studies may also focus on the relationships between intellectual perseverance and other relevant variables such as teacher efficacy, job satisfaction, burnout, and teacher achievement.

Furthermore, due to the nature of intellectual perseverance, EFL teachers' intellectual perseverance can be studied to find its influences on their teaching practices, student engagement, and learning outcomes.

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