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The impact of task-based instruction on learners' reading comprehension, L2 grit, anxiety, and motivation for L2 reading

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Abstract

Task-based instruction (TBI) is a pedagogical approach that centers on engaging learners in meaningful and communicative tasks to promote language acquisition, active participation, and practical language use. The primary objective of this investigation was to assess the influence of TBI on reading comprehension, motivation for L2 reading, anxiety, and L2 grit. Thus, two pre-existing classes from a large university in China were selected and one of them was assigned as the treatment and the other as the comparison group. An Oxford Quick Placement Test determined that the subjects possessed an intermediate level of proficiency. The experimental group received reading comprehension-based TBI, while the control group received traditional lecture-based strategy training. Each of the dependent variables was tested at two points of time. Based on a conducted t-test, while both groups knew exactly the same as time 1, the comparison group did less on the posttest in terms of reading comprehension skills than its treatment counterpart. The effect size was large. Furthermore, the results of a series of chi-squares showed that TBI had facilitating effects on motivation for L2 reading, language learning anxiety, and L2 grit, all with large effect sizes. That is, on the posttest, the number of motivated learners and grittier learners in the treatment group increased, while the number of high-anxiety learners in the experimental group decreased sharply. However, the participants' motivation for L2 reading, anxiety, and L2 grit did not significantly change after the treatment. The implications of the study are explained.

Keywords: Anxiety, Grit, Motivation for L2 reading, Reading comprehension, Task-based instruction

Introduction

English is commonly accepted as a universal language and is evolving into an official or second language in many nations given the speed at which globalization is taking place. As a result, the primary requirement for the majority of people nowadays is the capacity to comprehend the language and interact with others in English. Reading is undoubtedly the most important core skill for pupils learning a second language (Pallathadka et al., 2022). According to Okcü (2015), reading enables teachers to employ various activities and aid students in both the long- and short-term development of their language

abilities. In other words, through reading sessions, kids can hone other skills, broaden their vocabulary sources with new situations, and learn new grammar structures. Students must improve their reading comprehension abilities if they want to benefit from reading.

In many nations today, TBI is regarded as the gold standard for language teaching methods (Hiver & Wu, 2023). In the TBI method, students use the target language in a variety of classroom contexts that are natural (Abraham, 2015). Students can become active learners by exploring the meaning and using their own language to communicate. Every reading or other skill work objective has a specific purpose, but overall, all tasks focus on meaning and communication and support students in achieving their objectives with assurance and success (Willis, 1996). In reading lessons, TBI gives students a lot of useful and practical practice, allowing them to take risks without being concerned about their meaning being understood. Additionally, authentic texts or real-world scenarios in activities give students greater chances to communicate with classmates in their classes.

Understanding is how the reader builds the text using their prior knowledge, personal experiences, and details from the text (Long, 2015). Reading involves a dynamic interplay of communication between the reader and the writer. An important component of learning a language is improving one's reading comprehension abilities. Giving a written text significance is done in this manner. There are numerous methods for raising students' understanding levels. TBI, which places an emphasis on real-world tasks and mandates that students use the language in those settings, is one of these techniques (Chalak, 2015). One of the instructional methods that is now receiving a lot of attention is TBI. It allows for the seamless exchange of information and aids in students' confidence-building (Bhandari, 2020). Foreign language instruction has given a lot of attention to TBI, which focuses on fostering language use that is both meaningful and interactive (Pirzad et al., 2021).

TBI stands as a pedagogical approach uniquely suited to enriching second language acquisition (SLA). By immersing learners in real-world tasks requiring active use of the target language, TBI mirrors the dynamic nature of language communication (Hasnain & Halder, 2023). This focus on practical application aligns seamlessly with the essence of reading comprehension, where meaning is co-constructed through reader-text interaction (Pallathadka et al., 2022). TBI's emphasis on meaningful communication not only fosters language acquisition but also diminishes language anxiety by providing a supportive environment for learning through engagement (Xu & Fan, 2022). Thus, TBI emerges as a pivotal approach for enhancing reading comprehension and overall language proficiency.

TBI cannot be seen as a single, all-encompassing solution, according to Ellis (2017). According to him, tasks that are focused and those that aren't are both a part of hybrid/task-based language acquisition. He defined focused tasks as those whose main educational goal is for students to implicitly learn particular forms, which means that they are unaware of the forms they are absorbing. But, unfocused tasks place more emphasis on learners' engagement and meaning-making.

Working assiduously to overcome obstacles and retaining engagement and dedication over time in the face of failure, hardship, and growth plateaus are examples of grit, a

lower-order personality trait (Duckworth et al., 2007). It entails consistency and perseverance, or the propensity to invest sustained effort, in pursuit of the final goal. It is thought to play a significant role in determining how differently individuals with the same degree of cognitive capacity perform. Grittier individuals, for instance, are more likely to develop better language-related skill levels (such as L1 spelling proficiency), in part because they are more eager to practice deliberately (Duckworth et al., 2011).

Feelings of unease, fear, and stress are commonly associated with language anxiety that individuals experience when using or learning a second language (Ellis, 2015). Challenges may arise in the domains of speaking, writing, and comprehending the target language due to its influence. Language anxiety can significantly hinder acquisition by negatively affecting learners' confidence and motivation. According to Ellis (2015), language anxiety can arise from various factors, such as the apprehension of committing errors and the prospect of being evaluated by others, or feeling inadequate compared to native speakers. This anxiety often leads to avoidance behaviors and interferes with learners' active participation in language learning activities. Horwitz et al. (1986) suggest that it is a multifaceted concept influenced by individual differences, classroom dynamics, and cultural factors. Recognizing and addressing language anxiety is vital in creating supportive learning environments that facilitate effective language acquisition and communication skills.

Guthrie and Wigfield (2000) define reading motivation as an individual's personal goals, values, and beliefs regarding the content, tasks, and outcomes associated with reading. As an illustration, a young child might read books on different dog breeds to gain in-depth knowledge that will be valuable when their family (eventually) decides to adopt a puppy. Or, a teenager can meticulously read each novel prescribed by the school, even if they don't like them, in order to get good grades.

In a world where English is a universal language and globalization is accelerating (Ly, 2023), effective language comprehension and communication are vital. Reading comprehension is crucial for language learners, and TBI has emerged as an effective approach, emphasizing authentic language use and fostering confidence (Duong & Nguyen, 2021). TBI aligns with the dynamic nature of language interaction, benefitting comprehension skills and addressing language anxiety (Xu & Fan, 2022). Additionally, TBI's potential to nurture grit through perseverance (Duckworth et al., 2007) is noteworthy. This study investigates the effect of TBI on reading comprehension, motivation, anxiety, and grit.

Despite the growing significance of English and the paramount importance of reading comprehension in SLA, there remains a need to examine the influence of instructional approaches on enhancing text understanding, motivation for L2 reading, anxiety, and the development of L2 grit. While TBI is widely recognized as an effective teaching approach that promotes meaningful and communicative language use, its specific influence on these key aspects of language learning requires further investigation. Additionally, the relationship between L2 grit, characterized by perseverance and sustained effort, and language-related skill development remains a relatively unexplored area. Therefore, the following questions are tackled:

Research Question 1 Does task-based instruction have any significant effect on reading comprehension?

Research Question 2 Does task-based instruction have any significant effect on motivation for L2 reading?

Research Question 3 Does task-based instruction have any significant effect on L2 learners' anxiety?

Research Question 4 Does task-based instruction have any significant effect on L2 grit?

The research questions posed here are strategically designed to explore the intricate relationship between TBI and several key aspects of language acquisition. Investigating the impact of TBI on reading comprehension delves into how this approach influences learners' ability to construct meaning from texts. The exploration of TBI's effect on motivation for L2 reading addresses the potential of task-oriented language use to engage learners intrinsically. Similarly, the examination of TBI's influence on language anxiety responds to the need for effective strategies to alleviate the apprehensions that often hinder language learning. Finally, the investigation into TBI's impact on L2 grit is driven by the interest in uncovering how perseverance and sustained effort, essential components of grit, are fostered through task-based learning. By addressing these research questions, this study aims to not only contribute to the understanding of TBI's effectiveness but also provide insights into cultivating holistic language proficiency and motivation in second language learners.

This study could hold significant implications for language education and pedagogy. In a globalized world where English proficiency is essential, understanding the impact of TBI on critical aspects such as reading comprehension, motivation, anxiety, and grit can shape effective language teaching practices. TBI's potential to foster meaningful communication, alleviate anxiety, and promote perseverance can lead to more engaged and confident language learners. By unraveling the interplay between TBI and these key elements, this research could contribute to a deeper understanding of language acquisition and provides valuable insights into creating holistic language learning environments that empower students to excel in language learning and motivation.

By examining the interplay between TBI, reading comprehension, motivation, anxiety, and grit, we aim to fill the gap and provide insights into effective language teaching practices for enhancing second language learners' overall language proficiency and motivation.

The paper's structure is designed for clarity and coherence. The literature review covers both theoretical and empirical studies. The method section explains the research design, participants, instruments, and data procedures. Findings are then presented in the results section, and their implications are discussed in detail in the discussion section. The study concludes by addressing limitations and suggesting future research directions.

Literature review

Theoretical studies

Task-based instruction

The term TBI refers to a teaching strategy that was first applied in the 1980s and has gained significant attention and development in the teaching and acquisition of second

languages. According to Prabhu (1987), TBI is a teaching strategy that gives students communicative tasks and encourages idea-sharing in order to achieve the desired results. Therefore, TBI significantly affects the growth of communicative proficiency. According to Mckinnon and Rigby (2004, as referenced in Nahavandi & Mukundan, 2013), when teachers make their students' language relevant and understandable in the classroom, learners will digest it more naturally. The planning and instruction of TBI incorporate many tasks, which are the key components of language education, claim Richards and Rodgers (2001). In contrast to form-focused activities, the authors contend that learners' engagement in task-based work provides a more advantageous setting for triggering learning processes and ultimately, offers superior possibilities for language learning to unfold. The tasks that students do in TBI resemble what they encounter in real life; as a result, the importance of tasks cannot be overstated.

Many linguists and academics define tasks differently. According to Long (1985, as stated in Nunan, 2004), a task refers to specific assignments that can be completed for one's own advantage or the benefit of others, either without payment or in exchange for a benefit. With Nunan's (1998) definition, the term can be understood better. The job is separated into two categories based on its syllabus: real-world tasks and pedagogic tasks. While pedagogic tasks comprise various activities or exercises that students must perform in the classroom, real-world tasks relate to tasks that learners may be required to complete in genuine circumstances. Tasks are activities that require learners to communicate in the target language in order to accomplish a task, according to Willis (1996). To accomplish the tasks in the allotted time, meaningfully, and in the target language, learners must understand their goals. The primary goal of these tasks is communication; as a result, the process of completing tasks pays less attention to grammar or structure building. Therefore, a task in English reading classes can be described as a reading activity in which students can understand the meaning, modify the language used in the text, and produce the output by the target language with the support of teachers and other students.

Willis (1996) created a three-stage framework for TBI, comprising (1) pre-task, which provides an overview of the task, (2) task cycle, which includes the task, planning, and report, and (3) language focus, which includes analysis and practice.

Introducing and identifying the topic are the objectives of the pre-task phase. The instructor's job is to help learners remember what they already know about the subject; in other words, students must engage in lots of brainstorming exercises. There are instances when teachers need to put a lot of preparation into guiding students through the introduction of related-topic terms or phrases, spotting those words in the text, or allowing them to work together. Three elements make up the task cycle stage: task, planning, and report. Learners execute the tasks in pairs or groups throughout the task component. A facilitator is a teacher. Students plan their reports as part of the planning component. When appropriate, the teacher offers guidance. Students present their work in the target language during the report component. The teacher listens and provides comments. In-depth analysis of some particular language traits employed in the task cycle is possible during the language emphasis stage. To put it another way, after concentrating on meaning, the teacher will direct the class to pay attention to language use and form that will be helpful for them in the future.

Reading comprehension

By interacting with written language, Doff (1998) defined comprehension as the process of meaning-making. It's important to take different learner types and their requirements into account while teaching reading. Achieving a deeper understanding of the text is the reading's main purpose. Clarifying what is implied in the statement is one of its components (Spear-Swerling, 2006). Understanding is the outcome of some ideas or practices (Prados Sánchez et al., 2023). These processes entail mental models that represent the reader's prior knowledge, categorizing what the reader is aware of, and acting as the theory of his conception of the universe. The comprehension of both spoken and written language is a function of these cognitive systems. Perception and prediction are connected in some way. Accordingly, prediction entails posing queries as you consider the answers (Setayesh & Marzban, 2017). In order to help students read comprehension, teachers should focus on four key areas: giving authentic texts enough time, teaching students to concentrate on comprehension, offering students opportunities for group work, and providing an opportunity to discuss their responses with teachers (Fielding & Pearson, 1994). When meaning is created through writing, comprehension is attained. The reader's intention to read, along with previously held knowledge and language structure, all contribute to the meaning. The production and realization of language use this approach (Setayesh & Marzban, 2017). Understanding is defined as being aware of the text's available communicative environment and goal. Understanding is a means to learning the language being used, not an end in itself. According to Rezaei et al. (2017), learning a language is a creative, complex, and dynamic ability that incorporates numerous processes that are the main focus of the classroom.

Despite the requirement for extensive reading, during school and the subsequent stages of education, this ability is not acquired. It is frequently forgotten that reading is a problem-solving activity (Fazilatfar & Kargar Behbahani, 2018). Due to their incapacity to learn to read, many language learners are unable to comprehend language texts. They read more slowly than in their first language and with less grasp of what is required of them. Understanding what we are reading is included when we talk about reading. This concept is known as meaning creation. It takes precise word abilities, relevant domain knowledge, as well as a certain set of sensory processes, to create this meaning. These elements ought to be given special attention in learning contexts and at all stages of reading skill development (Rezaei et al., 2017).

Motivation for L2 reading

According to Readence et al. (1989), reading motivation is a particular emotion that causes readers to engage with or avoid a reading setting. Reading motivation is individuals' goals, principles, and ideas apropos the subjects, methods, and results of reading (Guthrie & Wigfield, 2000; Vaknin-Nusbaum & Tuckwiller, 2023). Researchers largely concur that reading motivation is multimodal despite previous studies' proposals to the contrary. Numerous research have suggested various models for it in L1 reading. Three categories to comprehensively capture the various dimensions of L1 reading motivation have been proposed by Wigfield and Guthrie (1997) including self-efficacy beliefs, intrinsic-extrinsic motivation and purpose for learning, and social aspects of motivation.

An intrinsic-extrinsic motivation model was then developed by Wang and Guthrie (2004) to exhaust L1 reading motivation. Extrinsic motivation, on the other hand, is driven by grades, compliance, competitiveness, social factors, and recognition. Intrinsic motivation, on the other hand, is driven by challenge, curiosity, and involvement. Scholarly inquiries into the building blocks of L2 reading motivation are few in comparison to L1 reading motivation. Asia has been the location of the majority of these investigations (e.g., Wang & Gan, 2021). Despite the fact that these researchers have discovered various aspects of L2 reading motivation within the context of their respective settings, they generally concur that the three most significant categories of reading motivation are extrinsic motivation, intrinsic motivation, and reading efficacy.

Within SLA, the role of reading motivation in L2 text understanding has not been given enough attention. Reading comprehension and intrinsic reading motivation often have a favorable association, according to other research (e.g., Dhanapala & Hirakawa, 2016). Studies, such as those by Ölmez (2015) and Park (2015), also demonstrated that there is a lack of correspondence between intrinsic reading motivation and L2 text understanding. Additionally, there have been conflicting findings on the predictive value of extrinsic reading drive in reading comprehension.

Anxiety

L2 anxiety has long been recognized as a crucial factor determining the success or failure of learning. It refers to the experience of tension and unease specifically linked to L2 contexts (Dewaele et al., 2023; MacIntyre & Gardner, 1994). These include state-trait anxiety brought on by transient circumstances or personality traits (Spielberger, 1983).

Horwitz et al. (1986) proposed that language anxiety is a unique combination of self-perceptions, beliefs, emotions, and behaviors emerging within classroom context due to the distinct nature of the learning process. It is crucial to remember that this kind of anxiety is only associated with language acquisition occurring in artificial situations, such as immersion while traveling or residing overseas. Horwitz et al. (1986) identified three interconnected types of anxiety constituting foreign language classroom anxiety: communication fear, apprehension of negative assessment, and exam anxiety. An individual's level of worry or anxiety related to actual or prospective engagement with others is known as communication apprehension (McCroskey, 1984).

Grit

Recent research has revealed that grit, generally characterized as unrelenting drive and steadfastness in pursuing long-term aspirations, can predict a variety of accomplishment outcomes in addition to conventional measurements like IQ and SAT (Duckworth et al., 2007). Besides inherent ability, grit provides supplementary predictive power for performance indicators and plays a pivotal role in success (Duckworth & Quinn, 2009). Grit or related concepts (such as industriousness) were stated as frequently as a skill while discussing the fundamental attributes required for high achievement with several people from a variety of occupations. Continuity of interest and tenacity of effort are two lower-order components that makeup grit. Age may also increase grit. As people age, they may come to value hard work and persistence in pursuit of a particular goal more (Duckworth et al., 2007). Grit exhibits no correlation with an individual's race, gender,

or academic performance (Credé, et al., 2017). Similarly, there is no association between grit and general intelligence or physical health (Eskreis-Winkler et al., 2014).

Grit is distinct from the desire for success. The urge for achievement, according to McClelland (1961), shows a person's propensity for finishing tasks that result in rapid (positive) feedback on their performance, particularly those that are neither too easy nor too tough. On the other hand, tenacious people purposefully set themselves long-term goals and stick to them in the face of challenges and setbacks (Duckworth et al., 2007). Resilience should be distinguished from grit. They share the characteristic of being able to withstand failure or adversity. However, what sets gritty individuals apart is their unwavering loyalty and commitment to a long-term goal, persisting in their pursuit over an extended period of time. Self-control, a Big Five conscientiousness subcomponent strongly correlated with grit (Credé et al., 2017), has also been claimed to be separate from grit. Although grit and self-control share the commonality of safeguarding one's goals from potential distractions and impulses, Duckworth et al. (2007) claim that what differentiates them is the nature of goals: Self-control involves protecting one's relatively short-term goals, whereas grit involves concentrating on one's long-term goals. Despite failures and losses, tenacious people stick to their highest-level goal over extended periods of time (Duckworth & Gross, 2014). However, those with self-control must arbitrate between lower-level objectives, which occasionally could necessitate acting in a contradictory manner.

Empirical studies

Reading comprehension

TBI influence on text grasping skills of EFL pupils was examined by Riazi Ahmadsaraei and Pourhosein Gilakjani in 2022. In order to achieve this, 60 EFLers were chosen on the basis of their results on the OQPT. The researchers subsequently divided them into an experimental and a control group. A pretest was administered to both groups at the start of the study to gauge their text grasping. The experimental group was then given ten sessions of treatment and TBI in reading comprehension. The control group, however, was given a placebo (reading instruction using the current strategy). Both groups participated in the reading posttest at the conclusion of the treatment. T-tests were used by the researchers to assess the data. The findings showed that TBI had a significant impact on EFLers' text grasping. The posttest scores of the two groups exhibited a substantial disparity. On reading comprehension on time 2, the experimental group outperformed the control group, and it made more progress overall than the control group. Riazi Ahmadsaraei and Pourhosein Gilakjani drew the conclusion that to boost students' text grasping skills, TBI activities ought to be incorporated into curriculum development.

English education has adopted the ideologies of task-based language learning and blended learning, which are both thought to be successful trends. In their study, Elahi and Mashhadi Heidar (2021) analyzed TBI influence and blended learning on text grasping of intermediate male and female pupils. The initial formation consisted of two treatment and two comparison groups. The two test groups received instruction using a blended, integrated approach based on TBI acquisition. In order to enhance participants' reading comprehension skills, the blended learning paradigm proposed by Staker and Horn (2012) was incorporated into Ellis' (2017) task-based model. In this novel

strategy, pupils participated in a diverse range of offline and online task-based text grasping activities, including both focused and unfocused tasks, while the comparison conditions received instruction in classic reading comprehension techniques. As a result, the ANCOVA results showed that significant differences were observed, with the pupils in the experimental groups outperforming those in the control groups. Additionally, the findings of the two-way ANOVA showed that there was little variation between the learning styles of male and female students across groups. The study's findings had pedagogical implications that recommended the incorporation of blended learning into TBI methodology. This paradigm shift could result in more pupil-centered classrooms, providing pupils with greater opportunities for active participation in their learning process. Most significantly, by creating engaging online reading comprehension exercises, teachers may help students improve their critical thinking and metacognitive abilities.

A fundamental skill for learning the English language is reading. However, due to a lack of exposure to actual literature, many EFL students struggle to master this skill. Regarding this matter, TBI is thought to be the best instructional strategy for effective reading learning. To ascertain TBI affects students' reading comprehension and attitudes toward this instructional strategy was the purpose of Nguyen (2022). This analysis was carried out at a university in the Mekong Delta where all majors are required to take English. The 58 students who made up the two groups—the experimental group and the control group—were not English majors. Two tools—tests and questionnaires—were used to gather information regarding students' reading abilities and attitudes toward the intervention. The results showed that TBI significantly enhanced text grasping of the treatment condition. Additionally, pupils expressed their support for the implementation of TBI in their reading classes. Hence, it is recommended that TBI be employed as the primary teaching strategy for learning the English language.

Motivation

In a study published in 2020, Chua and Ying investigated the impact of TBI on the learning motivation of 52 non-native Mandarin speakers at the beginning level. The research used a mix method design. By utilizing paired-sample *t*-test, the quantitative questionnaire data were analyzed to investigate the distinctions between the pre-treatment survey and the first-cycle post-treatment survey, as well as between the first-cycle post-treatment survey and the second-cycle post-treatment survey. To identify the variables influencing learning motivation, semi-structured interviews were conducted with 11 distinct grade-based students out of a total of 52 students in the three survey stages. The analysis revealed a significant improvement between the first and the second post-treatment survey ($t(51) = -3.52, p > 0.05$) and a nonstatistically significant decrease between the pre-treatment survey and first-cycle post-treatment survey ($t(51) = 1.04, p > 0.05$) in learning motivation. The results of the interview revealed that the use of TBI, a busy schedule, and assistance from Mandarin native speakers all had an impact on the learners' willingness to study. The researchers concluded that TBI can boost students' motivation to learn over the long run. Additionally, the study suggested that TBI might perform well given a sufficient language input task and the assistance of native Mandarin speakers prior to the output task.

The goal of NamazianDost et al. (2017) was to examine the impact of task-based language instruction on Ahvaz junior high school students' motivation and grammatical proficiency. 80 participants were ultimately chosen after a homogeneity exam was given to 100 pupils to meet the study's targets. They were then split into two smaller groups, the control group and the experimental group. As a pre-test, they were given a validated teacher-made grammar test that covered the topics that were planned to be covered in both groups before the treatment began. Additionally, both groups received a motivation questionnaire at the onset. Traditional instruction was provided to the control group, with grammar being taught through teacher-led examples and drills. In contrast, the experimental group experienced the treatment, which involved the implementation of task-based teaching for grammar instruction. The same teacher-made grammar test was given to the two groups as a posttest following the completion of 12 sessions of treatment. The Paired and Independent Samples t-test was used to assess the data. Significant differences in performance were observed, with the experimental group outperforming the control group. The experimental groups typically fared better than the control groups. Additionally, the results of the motivation survey indicated a substantial difference in the post-test motivation between the groups, indicating a considerable rise in motivation for the experimental group.

ESP courses have been seen as essential for future professionals' academic preparation in a variety of fields of study. Their broad range primarily entails the acquisition of a foreign language, the understanding of specialized terminology, and the growth of abilities pertinent to pupils' future employment requirements. Contemporary studies have looked at how task-based language teaching is put into practice, how projects are designed and completed, and how technology is used to improve digital competence. However, very few researchers have looked at how these three crucial components are combined in an ESP lesson and how that affects students' motivation. Rodríguez-Peñarroja (2022) investigated the motivational benefits of integrating project-based learning with various communicative tasks. A study was planned and organized around communicative tasks that included using YouTube as a source of multimodal input. Students were given a modified version of the intrinsic motivation questionnaire to gauge their motivation. The findings showed that participants' motivation and academic achievement have strong positive relationships and that the motivation subscales tested have high mean scores.

Anxiety

Whether it is TBI or the learning of a second language, motivation, and anxiety are important factors in the teaching and learning process. Fatima and Pervaiz (2023) sought to better understand Pakistani English as a Second Language (ESL) students' motivation and anxiety levels. This study's methodology was a quantitative research design. Additionally, Structural Equation Modeling was used to set up the connection between task anxiety and foreign language anxiety as well as to document the relationship between task motivation and L2 motivation. Eighty ESL students from Sargodha's two public colleges took part in the study. After watching a cartoon clip, students were required to narrate it in English. They were also questioned regarding task motivation and task anxiety. The findings demonstrated that task motivation comprises three components:

a task diagnostic tool, a task-positive attitude, and a task-negative attitude. The notion of task anxiety also demonstrates three settings, including anxiety, anxiety connected to language, and anxiety relief. The findings also showed that motivation and anxiety had a significant impact on TBI. The outcomes could be used to inform teachers about the motivational techniques that their students employ. Finally, the study will help ESL instructors inspire their pupils and comprehend their worries. The video narration task was the sole focus of this investigation. Therefore, it is advised to use a large sample size and to expand future studies by covering more tasks.

Ramamurthy's (2019) goals were to find out if ESL students have speaking anxiety, look at the connection between language anxiety and speaking abilities, and find out how the task-based method affected students' speaking anxiety. This quasi-experimental study involved 30 ESL students with low proficiency diplomas who ranged in age from 18 to 24. To explore the presence of speaking anxiety a questionnaire was administered to these purposive samples. To ascertain task-based effect, the pre-test and post-test, which were derived from IELTS speaking test cases, were administered. The researcher created task sheets with images connected to routines, events, and processes in order to carry out the seven-week program. Based on the outcomes, the learners experience anxiety related to communication apprehension, anxiety in English language classes, and fear of receiving a poor grade. The grades were obtained at a lower level the more concerned the students grew. The grades received on the post-test have improved as a consequence of the intervention's task-based strategy.

Grit

A psychological factor known as grit, which is a synthesis of persistence and zeal for lasting aspirations, has recently received scholarly interest. This psychological research is important because it adds to the broad body of ongoing research on cognitive characteristics. The ground-breaking study by Plonsky and Ghanbar (2018) validated a tool to assess what they refer to as L2 grit in the context of Iranian EFL. Wei et al. (2020) confirmed the two-fold structure of L2 grit identified in the seminal research in the Chinese context and discovered that there were different levels of association observed between the chosen socio-biographical variables and L2 grit. As an improved method of data analysis, this study also suggests giving a variety of impact sizes for each predictor in a hierarchical regression.

It is crucial to comprehend the function of happy feelings and how they affect students' general academic progress and well-being. In order to achieve this, Ghafouri and Tahriri (2023) investigated the association between two under-researched elements living within the realm of L2 emotions and goal success, namely L2 grit and academic buoyancy, by using positive psychology and control-value theory. To this purpose, the L2 grit and academic buoyancy scores were used to survey 263 junior high school pupils. According to the findings of the analyses of correlation, regression, and MANOVA, L2 grit and L2 buoyancy are substantially associated, and their underlying constituents have a powerful capacity for prediction. Men and women exhibited considerably different levels of grit, according to analyses. The authors suggested that favorable outcomes might result from acknowledging the existence of grit and academic buoyancy in learners.

The reviewed empirical studies collectively shed light on the multifaceted impact of TBI on various aspects of language acquisition. Concerning reading comprehension, Riazi Ahmadsaraei and Pourhosein Gilakjani (2022) demonstrated that TBI significantly enhances EFL learners' reading comprehension skills, suggesting its efficacy in curriculum development. Elahi and Mashhadi Heidar (2021) similarly found that TBI combined with blended learning fosters reading comprehension among intermediate learners. Nguyen (2022) extended these findings highlighting TBI's positive influence on reading skills and learners' attitudes toward this instructional approach. Moving to motivation, Chua and Lin (2020) discovered that TBI positively affects the learning motivation of non-native Mandarin speakers. NamazianDost et al. (2017) demonstrated TBI's positive correlation with motivation and grammatical proficiency among junior high school students. Moreover, Rodríguez-Peñarroja (2022) illuminated the motivational benefits of integrating project-based learning with communicative tasks. Lastly, in addressing language anxiety, Malik and Pervaz (2023) underscored the relationship between task anxiety, language anxiety, and motivation. Ramamurthy (2019) explored the reduction of speaking anxiety through TBI, emphasizing its potential for alleviating learners' apprehensions. In the realm of grit, Plonsky and Ghanbar (2018) and Wei et al. (2020) validated and expanded the concept of L2 grit, showcasing its relevance in language learning contexts. Ghafouri and Tahriri (2023) explored the connection between L2 grit and academic buoyancy, revealing their predictive power in understanding learners' progress and well-being. These cumulative findings collectively underscore the diverse and substantial impacts of TBI on reading comprehension, motivation, anxiety reduction, and the cultivation of grit in language learners.

In light of the growing recognition of English as a global language and the crucial role of reading comprehension in SLA, there is a pressing need to investigate the influence of instructional approaches on enhancing reading comprehension, motivation for L2 reading, anxiety, and the development of L2 grit. While TBI is widely acknowledged as a valuable teaching approach fostering meaningful and communicative language use, its specific impact on these key aspects of language learning requires further exploration. Furthermore, the relationship between L2 grit, characterized by perseverance and sustained effort, and the development of language-related skills remains an explored area. By examining the interplay between TBI, reading comprehension, motivation, and grit, this research endeavors to contribute to the existing literature and provide insights into effective language teaching practices for enhancing overall language proficiency and motivation among second language learners.

Method

Design

Using a quasi-experimental pretest–posttest design we explored TBI influence on reading comprehension, motivation for L2 reading, anxiety, and the development of L2 grit. The design involved the selection of intact groups of L2 learners from two different language classrooms. This design allows for the examination of cause-and-effect relationships without full randomization of participants into groups. Intact groups of L2 learners were selected from two distinct language classrooms. The treatment groups received the TBI intervention, while the comparison group followed a traditional instructional

approach. While randomization was not feasible due to the nature of intact classroom groups, efforts were made to minimize potential bias by ensuring that the groups were comparable in terms of relevant characteristics such as proficiency level and demographic factors.

Setting and participants

This study was conducted at a large university in China, with the participants consisting of B.A. learners matriculated in general English courses. The participants were selected from two intact classes, each comprising 25 students, who had a prior English learning experience of 6 years before gaining admission to the university. One group was selected as the treatment, and the other as the comparison group. The subjects' age spanned from 18 to 28 years. The university setting provided an appropriate context for investigating the effects of TBI on reading comprehension, motivation for L2 reading, anxiety, and the development of L2 grit among students pursuing higher education. The participants' English language proficiency level, which was checked through an OQPT, and all learners were determined as intermediate learners, and educational background made them suitable candidates for exploring the objectives. Ethical considerations were ensured, and the participants voluntarily agreed to participate by providing their consent.

Instruments

OQPT

The proficiency level of the participants was determined using OQPT, which identified all learners as intermediate-level English language learners. The OQPT is a language proficiency test designed to assess the English language skills of non-native speakers. It is commonly used by language institutions around the world to determine the appropriate level of instruction for students. The test evaluates language abilities and provides an objective measure of a student's English language proficiency. The test takes approximately one hour to complete and consists of multiple-choice and short-answer questions. All participants scored between 28 and 47 indicating their intermediate level.

Reading comprehension test

To assess their reading comprehension abilities, an instructor-made test was designed based on the content of the Select Readings (intermediate) textbook. The test had 30 items including fill-in-the-blank, true/false, short-answer, and multiple-choice questions. To evaluate the test's construct validity, known-group technique was employed, ensuring that the test accurately measures the intended construct. The reliability of the instrument was confirmed by Cronbach's alpha value. For the posttest, a similar test with different items was administered, maintaining the validity and reliability established for the pretest.

Measures of anxiety, motivation for reading, and L2 grit

To measure the participants' anxiety levels, Spielberger's (1983) State-Trait Anxiety Inventory (STAI) scale was employed. Furthermore, the participants' motivation for L2 reading was measured using Wigfield and Guthrie's (1995) validated motivations for reading questionnaire (MRQ). The MRQ has demonstrated robust psychometric

properties and is widely recognized for its ability to effectively capture motivation-related constructs in the context of reading. Additionally, to measure L2 grit, Duckworth et al. (2007) scale was administered. It is worth mentioning that all the instruments were administered on two occasions.

Data collection procedures

The data collection procedures involved multiple tools to gather information on various variables. Firstly, to determine the participants' proficiency level, OQPT was administered to assess their language proficiency as intermediate learners. This test provided an initial baseline for the participants' language abilities. To measure the participants' reading comprehension, two reliable and valid instructor-made tests were administered. To assess the participants' anxiety levels, Spielberger's (1983) STAI scale was employed on two occasions. Additionally, the participants' motivation for L2 reading was assessed using MRQ. Furthermore, in order to assess L2 grit, we employed Duckworth et al.'s (2007) scale.

Regarding the treatment of TBI, it was offered to the participants in a structured manner. The instructional approach involved the use of communicative and meaningful tasks designed to enhance reading comprehension skills. The tasks engaged the learners in authentic and interactive language use, promoting their understanding and application of reading strategies. The participants were exposed to a series of task-based activities that required them to actively engage with authentic reading materials, such as newspaper articles, short stories, and academic texts. These activities focused on promoting reading comprehension skills, encouraging critical thinking, and fostering meaningful interaction among learners. TBI was implemented by the instructor in a classroom setting. The instructor provided clear instruction, facilitated group discussions, and monitored the participants' progress throughout the tasks. The instructional sessions were interactive, allowing the participants to collaborate, share ideas, and receive feedback from both the teacher and their peers. By incorporating TBI into the study, the aim was to provide a meaningful and communicative learning experience that would potentially enhance the participants' reading comprehension abilities, motivation for L2 reading, L2 grit, and potentially reduce anxiety levels.

The implementation of TBI was executed through a series of structured and communicative activities. These tasks were carefully designed to foster meaningful engagement and enhance reading comprehension skills. For instance, participants actively interacted with authentic reading materials, such as newspaper articles, short stories, and academic texts. Through group discussions, collaborative activities, and analysis of these materials, learners were encouraged to apply reading strategies, think critically, and engage in meaningful discussions. These tasks provided opportunities for the participants to interact with the language in real-world contexts, promoting deeper understanding and application of reading strategies. The instructor played a pivotal role by guiding discussions, offering clear instructions, and facilitating the overall learning process. This approach aimed to create an interactive and supportive environment, fostering collaboration and feedback exchange among participants. By utilizing such meaningful communicative tasks, the study aimed to uncover the potential impact of TBI on reading

comprehension skills, L2 reading motivation, anxiety reduction, and the development of L2 grit among learners.

In the context of this study, the control group served as a comparison group that did not receive the TBI treatment. While the experimental group received the TBI aimed at enhancing reading comprehension, the control group engaged in regular classroom activities that were part of their standard English curriculum. The control group followed the regular instructional approach employed by the institution, which typically included traditional teaching methods such as lectures, textbook exercises, and teacher-led discussions. These activities focused on the development of reading comprehension skills but did not involve the specific TBI implemented in the treatment group.

Data analysis procedures

The collected data on motivation for L2 reading, anxiety, and L2 grit were nominalized to distinguish between motivated and unmotivated learners, high-anxiety and low-anxiety learners, and gritty and non-gritty learners. The data analysis procedures involved several steps. Firstly, descriptive statistics such as frequencies and percentages were computed to provide an overview of the distribution of participants across the different nominalized categories. Subsequently, inferential statistical techniques were employed to calculate the similarities and differences between the variables of interest. Chi-square tests were conducted to analyze the associations between motivation, anxiety, and grit. Additionally, to explore the disparity in text understanding, independent sample t-tests were employed. The significance level was set at 0.05, and to gauge the practical significance of the findings, effect sizes were calculated. Finally, the results were interpreted and discussed.

Results

The impact of task-based instruction on reading comprehension

To assess the impact of TBI on text understanding on two occasions, it is necessary to perform an independent samples t-test (Pallant, 2020). But, before that, ensuring the normality of the data is crucial. To this end, a one-sample Kolmogorov–Smirnov (K-S) test needs to be run (Pallant, 2020) (Table 1).

Table 2 includes descriptive statistics. Both groups performed similarly on test of reading comprehension (Mean = 3.680, SD = 1.842 vs. Mean = 3.760, SD = 1.854). However,

Table 1 One-sample Kolmogorov–Smirnov test

		Group	Reading pretest	Reading posttest
N		50	50	50
Normal parameters ^{a,b}	Mean	1.500	3.720	7.380
	SD	0.505	1.829	4.663
Most extreme differences	Absolute	0.339	0.162	0.176
	Positive	0.339	0.162	0.176
	Negative	−0.339	−0.118	−0.114
Kolmogorov–Smirnov Z		2.396	1.146	1.247
Asymp. Sig. (2-tailed)		0.000	0.144	0.089

Based on the results of the K-S test, the data exhibits normality on both occasions, as the significance value is higher than the designated significance level ($p > 0.05$)

Table 2 Descriptive data—TBI influence on reading comprehension

	Group	N	Mean	SD	Std. error mean
Reading pretest	Experimental	25	3.680	1.842	0.368
	Control	25	3.760	1.854	0.370
Reading posttest	Experimental	25	10.480	4.646	0.929
	Control	25	4.280	1.671	0.334

on posttest, the TBI condition outperformed than the non-TBI condition on the test of the same construct (Mean = 10.480, SD = 4.646 vs. Mean = 4.280, SD = 1.671) (Table 3).

The homogeneity assumption was substantiated by the results of Levene's test as the Sig. value exceeded 0.05 on both tests ($p > 0.05$). Furthermore, t-test demonstrated that on pretest the two groups' reading comprehension was similar ($F = 0.190$, $df = 48$, $p > 0.05$, Mean difference = 0.879). However, on the posttest, TBI learners' reading comprehension was significantly better than non-TBI learners ($F = 22.089$, $df = 48$, $p < 0.05$, Mean difference = 6.200). The effect size turned out to be large (0.45). Actually, Cohen (1988) interprets the eta squared of 0.01 as small, 0.06 as moderate, and 0.14 and higher as large.

The impact of task-based instruction on motivation for L2 reading

To assess TBI influence on motivation for L2 reading, because we had nominalized the motivation construct as motivated versus unmotivated learners, a chi-square for group independence was conducted (Pallant, 2020).

Table 4 shows that on pretest, there were only 5 motivated learners in the TBI group, and 4 motivated ones in the non-TBI group, respectively, and the rest were unmotivated learners (Tables 5, 6).

On time 2, however, the number of motivated learners increased sharply. There are now 19 motivated learners in the TBI group. However, non-TBI group motivation did not change sharply as there are only 6 motivated learners in the non-TBI group on the second occasion.

Table 7 demonstrates that TBI and non-TBI conditions disparity in terms of motivation for L2 reading is significant on the posttest ($df = 1$, $p < 0.05$). The effect size was also large (Cramer's $V = 0.520$). Cohen (1988) identified 0.10 effect size as small, 0.30 as moderate, and 0.50 as large. Please note that, for space limitations, the table indicating the effect size is not presented.

The impact of task-based instruction on anxiety

In order to measure the impact of TBI on anxiety, because we had nominalized the anxiety construct as high-anxiety vs. low-anxiety learners, a chi-square for group independence was conducted (Pallant, 2020).

Table 8 shows that on pretest, there were 17 high-anxiety learners in the TBI group, and 18 high-anxiety ones in the non-TBI group, respectively, and the rest were low-anxiety learners (Tables 9, 10).

On time 2, however, the number of high-anxiety learners decreased sharply. There are now 20 low-anxiety learners in the TBI group. However, non-TBI group anxiety did not

Table 3 Independent samples test—TBI influence on reading comprehension

	Levene's test for equality of variances		t-test for equality of means						
	F	Sig	t	df	Sig. (2-tailed)	Mean difference	Std. error difference	95% Confidence interval of the difference	
								Lower	Upper
Reading pretest	0.190	0.665	−0.153	48	0.879	−0.0800	0.522	−1.131	0.971
			−0.153	47.998	0.879	−0.0800	0.522	−1.131	0.971
Reading posttest	22.089	0.235	6.277	48	0.000	6.200	0.987	4.214	8.185
			6.277	30.107	0.000	6.200	0.987	4.183	8.216

Table 4 Crosstab—TBI influence on motivation on pretest

		Motivation time1		Total
		Motivated	Unmotivated	
Group	Experimental	5	20	25
	Control	4	21	25
Total		9	41	50

Table 5 Chi-square tests—TBI influence on motivation on pretest

	Value	df	Asymp. sig. (2-sided)	Exact sig. (2-sided)	Exact sig. (1-sided)
Pearson chi-square	0.136	1	0.713		
Continuity correction ^b	0.000	1	1.000		
Likelihood ratio	0.136	1	0.713		
Fisher's exact test				1.000	0.500
Linear-by-linear association	0.133	1	0.716		
N of valid cases	50				

Based on the outcomes of the chi-square test at ($df = 1$), the difference between motivated and unmotivated learners was not significant ($p > 0.05$)

Table 6 Crosstab—TBI influence on motivation on posttest

		Motivation time2		Total
		Motivated	Unmotivated	
Group	Experimental	19	6	25
	Control	6	19	25
Total		25	25	50

Table 7 Chi-square tests—TBI influence on motivation on posttest

	Value	df	Asymp. sig. (2-sided)	Exact sig. (2-sided)	Exact sig. (1-sided)
Pearson Chi-square	13.520	1	0.000		
Continuity correction	11.520	1	0.001		
Likelihood ratio	14.207	1	0.000		
Fisher's exact test				0.001	0.000
Linear-by-linear association	13.250	1	0.000		
N of valid cases	50				

Table 8 Crosstab—TBI influence on anxiety on pretest

		Anxiety time1		Total
		High anxiety	Low anxiety	
Group	Experimental	17	8	25
	Control	18	7	25
Total		35	15	50

Table 9 Chi-square tests—TBI influence on anxiety on pretest

	Value	df	Asymp. sig. (2-sided)	Exact sig. (2-sided)	Exact sig. (1-sided)
Pearson chi-square	0.095	1	0.758		
Continuity correction	0.000	1	1.000		
Likelihood ratio	0.095	1	0.758		
Fisher's exact test				1.000	0.500
Linear-by-linear association	0.093	1	0.760		
N of valid cases	50				

Based on the outcomes of the chi-square test at ($df = 1$), the difference between high and low-anxiety learners was not significant ($p > 0.05$)

Table 10 Crosstab—TBI influence on anxiety on posttest

		Anxiety time2		Total
		High anxiety	Low anxiety	
Group	Experimental	5	20	25
	Control	17	8	25
Total		22	28	50

Table 11 Chi-square tests—TBI influence on anxiety on posttest

	Value	df	Asymp. sig. (2-sided)	Exact sig. (2-sided)	Exact sig. (1-sided)
Pearson chi-square	11.688	1	0.001		
Continuity correction	9.821	1	0.002		
Likelihood ratio	12.229	1	0.000		
Fisher's exact test				0.001	0.001
Linear-by-linear association	11.455	1	0.001		
N of valid cases	50				

change sharply as there are only 8 high-anxiety learners in the non-TBI group on the second occasion.

Table 11 demonstrates that TBI and non-TBI conditions disparity in terms of anxiety is significant on the posttest ($df = 1$, $p < 0.05$). The effect size was almost large (Cramer's $V = 0.483$).

The impact of task-based instruction on L2 grit

To assess the impact of TBI on L2 grit, because we had nominalized the L2 grit construct as gritty versus non-gritty learners, a chi-square for group independence was conducted (Pallant, 2020).

Table 12 shows that on pretest, there were just 4 gritty learners in the TBI group, and 3 gritty ones in the non-TBI group, respectively, and the rest were non-gritty learners (Tables 13, 14).

On time 2, however, the number of gritty learners increased sharply. There are now 18 gritty learners in the TBI group. However, non-TBI group grittiness did not change sharply as there are 20 non-gritty learners in the non-TBI group on the second occasion.

Table 12 Crosstab—TBI influence on L2 grit on pretest

		Grit time1		Total
		Gritty	Non-gritty	
Group	Experimental	4	21	25
	Control	3	22	25
Total		7	43	50

Table 13 Chi-square tests—TBI influence on L2 grit on pretest

	Value	df	Asymp. sig. (2-sided)	Exact sig. (2-sided)	Exact sig. (1-sided)
Pearson chi-square	0.166	1	0.684		
Continuity correction	0.000	1	1.000		
Likelihood ratio	0.167	1	0.683		
Fisher's exact test				1.000	0.500
Linear-by-linear association	0.163	1	0.687		
N of Valid cases	50				

Based on the outcomes of the chi-square test at ($df = 1$), the difference between gritty and non-gritty learners was not significant ($p > 0.05$)

Table 14 Crosstab—TBI influence on L2 grit on posttest

		Grit time2		Total
		Gritty	Non-gritty	
Group	Experimental	18	7	25
	Control	5	20	25
Total		23	27	50

Table 15 Chi-square tests—TBI influence on L2 grit on posttest

	Value	df	Asymp. sig. (2-sided)	Exact sig. (2-sided)	Exact sig. (1-sided)
Pearson chi-square	13.607	1	0.000		
Continuity correction	11.594	1	0.001		
Likelihood ratio	14.327	1	0.000		
Fisher's exact test				0.001	0.000
Linear-by-linear association	13.335	1	0.000		
N of valid cases	50				

Table 15 demonstrates that TBI and non-TBI conditions disparity in terms of L2 grit is significant on the posttest ($df = 1$, $p < 0.05$). The effect size was large (Cramer's $V = 0.522$).

Discussion

The study's results align with the research questions and emphasize the positive impact of TBI on language learning. In terms of reading comprehension, TBI demonstrated a significant effect, with the TBI group displaying improved posttest scores and a large effect size. Regarding motivation, the TBI group showed a substantial increase in

motivated learners compared to the non-TBI group, underscoring TBI's role in enhancing motivation for L2 reading. Anxiety reduction was evident in the TBI group, where high-anxiety learners decreased significantly, while the non-TBI group's anxiety levels remained relatively unchanged, supported by a substantial effect size. For L2 grit, TBI led to a marked increase in gritty learners in the TBI group, with significant disparity and a substantial effect size. Overall, we analyzed TBI influence on various aspects of language learning, including text understanding, motivation for L2 reading, anxiety levels, and L2 grit. The findings yield valuable insight into the effectiveness of TBI in promoting these aspects of language learning.

This study sheds new light on TBI and its impact of language learning. A key novelty is the exploration of TBI's influence on L2 grit, an area not studied previously. The findings align with the research questions, revealing TBI's positive effects on various aspects. Reading comprehension improved significantly with TBI, as did motivation for L2 reading. Anxiety decreased notably among TBI learners, and TBI also fostered higher levels of L2 grit. The study's robust methodology enhances the results.

Regarding text understanding, the outcomes revealed that TBI had a significant influence on posttest performance. The TBI condition outperformed the non-TBI condition, suggesting that TBI enhances reading comprehension abilities. These results are consistent with previous research (Elahi & Mashhadi Heidar, 2021; Nguyen, 2022; Riazi Ahmad-saraei & Pourhosein Gilakjani, 2022) highlighting the benefits of TBI in improving reading skills. The effect size was reported as large, indicating a substantial impact of TBI on reading comprehension. One pitfall regarding the investigations cited above on TBI influence on text understanding was that none of the cited studies had reported the effect size which casts doubt on their findings. Therefore, by calculating the effect size, this study aimed to overcome the shortcomings of the previous studies and provide more insights into TBI influence on text understanding.

On time 2, the study identified a notable disparity in motivation for L2 reading between the conditions. Specifically, the TBI condition exhibited elevated levels of motivation compared to the non-TBI condition. This finding suggests that TBI can effectively enhance learners' motivation for reading in the target language. The effect size was reported as large, emphasizing the practical significance of this finding. This finding is consistent of Chua and Lin (2020), NamazianDost et al. (2017), and Rodríguez-Peñarroja (2022) who found that TBI could affect motivation for language learning. Notwithstanding, our analysis is slightly varied from those of the above-mentioned analysts as we specifically investigated the effect of TBI on motivation for L2 reading that they did not. Additionally, the above-mentioned studies had not reported the effect sizes of their results. By reporting the effect size, this study tried to fare better than the previous studies.

Furthermore, the study explored TBI influence on anxiety levels. The results indicated a significant reduction in anxiety among the TBI condition, unlike the non-TBI condition. This aligns with prior analysis highlighting the anxiety-reducing effects of TBI (Fatima & Perviaz, 2023; Ramamurthy, 2019). Although Fatima and Perviaz (2023) analyzed the TBI influence in general on anxiety, and Ramamurthy (2019) examined its effect of speaking anxiety, this study was slightly different from theirs as we investigated the efficacy of Reading comprehension-based TBI on learning anxiety. In this respect,

this study is different from those of the cited researchers. Furthermore, because these researchers had not reported their results' effect sizes, the results of our study appear to be more trustworthy compared to them.

Additionally, we examined TBI impact on L2 grit, referring to learners' commitment and zeal for accomplishing enduring learning targets. The analysis identified a significant disparity between the two conditions on the posttest, with the TBI condition demonstrating higher levels of L2 grit. This suggests that TBI can effectively foster grit in language learners, which may lead to increased motivation, persistence, and ultimately better language learning outcomes. The effect size was reported as large, highlighting the substantial impact of TBI on developing L2 grit. The literature lack a study investigating the effect of TBI on L2 grit, thus this can be counted as one of the novelties of this study.

In the experimental condition, participants received TBI designed to elevate their comprehension capabilities. The TBI activities involved engaging learners in authentic reading tasks that required them to actively interact with the text, such as summarizing, analyzing, and discussing the content. We, conversely, exposed the non-TBI condition to conventional instruction that focused on explicit teaching of reading comprehension strategies through lectures and exercises.

The results can be attributed to the unique characteristics of TBI and its focus on meaningful communication and engagement. TBI's emphasis on authentic, interactive tasks facilitated learners' active participation and collaboration, creating a conducive environment for comprehension skills development. Through exposure to a variety of reading materials and tasks, participants in the TBI group honed their reading skills. This heightened engagement likely contributed to increased motivation for L2 reading, as learners found relevance and autonomy in their learning journey. Moreover, the interactive nature of TBI reduced language anxiety by promoting supportive interactions and reducing the fear of making mistakes. The cultivation of L2 grit through TBI can be attributed to the perseverance of problem-solving inherent in its tasks, fostering learners' resilience and sustained effort. Overall, TBI's learner-centered, communicative approach seems to have synergistically influenced these variables, leading to the positive outcomes observed in this study.

It is notable to underscore that we took measures to minimize potential biases and increase the internal validity of the study. For instance, they ensured that the instructional materials and procedures were standardized across both groups. Additionally, steps were taken to address any potential confounding variables and control for factors that could influence the outcomes, such as the participants' prior language proficiency and educational background.

By employing a rigorous methodology, including random assignment, pre and posttest measurements, and appropriate statistical analyses, the study was able to provide robust evidence on TBI impact on text understanding, motivation for L2 reading, anxiety levels, and L2 grit. These methodological considerations enhance the study's reliability and validity of the findings, making them more generalizable and applicable to other language learning contexts.

The results of this study shed light on the effectiveness of TBI in language education, aligning with Krashen's Affective Filter Hypothesis (1985). The findings show how TBI's emphasis on authentic, meaningful tasks effectively reduces language anxiety,

enhances motivation, and fosters grit among language learners. By creating a supportive and engaging learning environment through TBI, the affective filter, which encompasses emotional factors that can hinder language acquisition, is lowered. Learners' reduced anxiety levels, increased motivation, and enhanced perseverance exemplify how TBI cultivates a positive affective state conducive to language learning. In this way, the study's outcomes reinforce the significance of creating emotionally supportive classroom contexts, in accordance with Krashen's hypothesis, which facilitates effective language acquisition.

The outcomes hold substantial implications for language education and learning. Firstly, the results demonstrate that TBI can significantly improve reading comprehension skills among language learners. The TBI condition outperformed the non-TBI condition on the posttest, indicating that TBI can be an effective approach for enhancing reading comprehension abilities. This suggests that teachers and curriculum designers should consider integrating task-based activities into their language instruction to promote meaningful engagement with texts and improve reading comprehension outcomes.

Furthermore, the study revealed that TBI yielded significant influence on motivation for L2 reading. The experimental group exhibited a significant increase in motivated learners on the posttest. It suggests that task-based activities, which promote active participation, autonomy, and relevance, can contribute to fostering learners' intrinsic motivation and interest in reading. Educators should consider incorporating task-based approaches to tap into learners' intrinsic motivation and create an engaging and enjoyable learning environment that promotes L2 reading motivation.

Another significant finding was TBI impact on anxiety among language learners. The results indicated a substantial decrease in anxiety levels in the TBI condition on the posttest. TBI, with its focus on communicative and interactive activities, can contribute to the establishment of a conducive learning environment with reduced levels of anxiety. This highlights the potential of TBI in reducing language learning anxiety, which is known to hinder language performance and hinder learners' overall language development. Language educators should be aware of the role of instructional approaches, such as TBI, in creating a positive and anxiety-reducing classroom environment to promote development.

Lastly, this inquiry revealed that TBI had a huge impact on learners' L2 grit, with a higher proportion of gritty learners in the TBI condition on time 2. This suggests that TBI, with its emphasis on perseverance, problem-solving, and active engagement, can foster the development of resilience and persistence in language learners. Understanding the role of instructional approaches in developing learners' grit can inform language teaching practices by emphasizing the cultivation of positive learning dispositions and promoting learner autonomy.

Overall, the study's findings carry significant implications for language education stakeholders, including teachers, material developers, and policy-makers. Language teachers can draw concrete strategies from TBI to enhance their instructional practices, fostering reading comprehension, motivation, reduced anxiety, and grit development. Tailoring instruction with task-based activities that align with learners' interests and promote active engagement can create a dynamic learning environment. Material developers can use these results to design authentic, interactive, and task-oriented instructional resources that resonate with learners' needs and preferences, contributing

to well-rounded proficiency. Policy-makers can leverage the positive impact of TBI to inform educational decisions, integrating task-based approaches into policies, supporting educators' professional development, and encouraging the creating of TBI-based materials for consistent and effective language education. Collectively, these implications advance comprehensive, engaging, and effective language learning experiences.

Conclusion

In conclusion, the study provides noteworthy findings enhancing our understanding of the benefits associated with TBI. The findings underscore the potential of TBI in improving reading comprehension, enhancing motivation for L2 reading, reducing anxiety levels, and promoting the development of L2 grit. Language educators can use these findings to inform their instructional practices and design more effective and engaging language learning experiences. By integrating task-based activities and creating supportive learning environments, educators can foster positive learning outcomes and contribute to the overall success and satisfaction of language learners.

In spite of the study's positive outcomes, it suffers from a few limitations. One of the shortcomings of the study is its trial in controlling for language proficiency and language background to increase internal validity. However, as the internal validity increases, the external validity decreases (Mackey & Gass, 2022). Future studies are surely needed to obviate the shortcoming. One more drawback is that the study did not examine cognitive variables' moderating role on the outcomes. Future studies could delve into the effects of individual differences (e.g. working memory, field (in)dependence, learning style, etc.) as moderating variables on the dependent variables of the research to illuminate the effects of TBI on reading comprehension, motivation for L2 reading, anxiety and grit.

Abbreviations

TBI	Task-based instruction
OQPT	Oxford Quick Placement Test
L2	Second language
SLA	Second language acquisition
IQ	Intelligence quotient
SAT	Scholastic Assessment Test
EFL	English as a Foreign Language
ANOVA	Analysis of variance
ESP	English for specific/special purposes
MANOVA	Multivariate analysis of variance
STAI	State-trait anxiety inventory
MRQ	Motivations for reading questionnaire
K-S	Kolmogorov–Smirnov Test

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Author contributions

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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

Competing interests

The authors declare no competing interests.

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