

Expositions

Non-cognitive Skills to Be Researched: Insights Gained From Educational Psychology

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How can teachers help their students to learn English effectively? What are the skills important for their growth as language learners? These are fundamental questions that many English teachers have. To keep students motivated and engaged, teachers may wonder if there are important skills other than English language proficiency. In this paper, I propose that non-cognitive skills should be studied, and I introduce three well-operationalized terms: (1) *grit*, (2) *optimism*, and (3) *resilience* which might help language teachers interested in dealing with the questions posed above. After I discuss the importance of focusing on non-cognitive skills in language teaching, I introduce grit, optimism, and resilience, three noteworthy research topics which are important for understanding students who are studying foreign languages in Japan. While grit has been studied extensively in recent years within the field of Applied Linguistics, the other two topics, optimism and resilience, have received less attention. Towards the end of this paper, I take another look at non-cognitive skills using insights from the field of Positive Psychology and discuss how these topics can be studied in Applied Linguistics. It is hoped that this paper informs how language teachers can better work with students.

本稿では、日本における英語学習者の非認知能力に関して研究することの重要性に関して議論をする。非認知能力をどのように定義できるかを議論したのち、グリット、楽観性、レジリエン

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スの3つの非認知能力を取り上げ、可能な限り応用言語学関連の先行文献を中心に紹介する。言語テストでよい成績をとるために重要な認知的能力を身に着けると同時に言語学習者としての成長に重要な非認知能力とはどのようなものであろうか、また教師はどのように効果的に英語を学習できるように手助けができるだろうか。そういった疑問に関して本稿では議論を行う。最後に国内の英語学習者の非認知能力を研究する際の注意点や留意点に関して取り上げる。

Keywords: grit; non-cognitive skills; optimism; resilience

What Are Non-Cognitive Skills?

Imagining how language teachers grade students in their classes, one can picture that teachers usually evaluate their performance not only on the results of tests, which require cognitive skills, but also based on class performance, which requires regular attendance. Students also need to pay attention to teachers' instructions and work with other classmates. For learning foreign languages, nobody disagrees about the importance of both cognitive and non-cognitive skills. Touching upon such points in the book *Giving Kids a Fair Chance*, Heckman (2017) explains:

life success depends on more than cognitive skills. Non-cognitive characteristics – including physical and mental health, as well as perseverance, attentiveness, and other socio-emotional qualities – are also essential. While public attention tends to focus on cognitive skills... non-cognitive characteristics also contribute to social success and in fact help to determine scores on the tests that we use to evaluate cognitive achievement. (p. 4)

In this quote, however, note that “characteristics”, not “skills”, was used. Non-cognitive skills can be perceived broadly. Khine (2016) observed:

The notion of ‘non-cognitive’ has many phraseological collocations. Among frequently used collocators are constructs, traits, skills, factors, abilities, variables, outcomes, attributes, and predictors... To name a few, grit, tenacity, curiosity, attitudes, self-concept, self-efficacy, anxiety, coping strategies, motivation, perseverance, confidence are among those frequently referred to in the literature. (p. 3)

For the sake of clarity, I use non-cognitive skills in this paper although they can be perceived as non-cognitive traits or simply attitudes. The Japanese translation of non-cognitive skills, “*hi-ninchi nouryoku*” or “*hi-ninchi*

skill” are commonly used in the title of book publications in Japan (e.g., Moriguchi, 2019; Nakayama, 2018; Oshio, 2021), and interested readers should consult these publications to understand the topics covered in this paper in Japanese.

Heckman cautions that the non-cognitive skills not measurable by standardized tests are rather important for helping all children to be successful in their lives. Heckman and Rubinstein (2001) observe:

Widespread use of standardized achievement and ability tests for admissions and educational evaluation are premised on the belief that the skills that can be tested are essential for success in schooling, a central premise of the educational-testing movement since its inception. (p. 145)

In teaching a college level test preparation course, for instance, while teachers certainly need to help clarify points to be studied, students could also benefit from learning about non-cognitive skills. As Kikuchi (2006) discussed, many colleges need to admit and welcome a variety of students in this era so that they can meet enrollment targets. While most students can concentrate on courses and attempt to improve test scores, some students may not possess the motivation and perseverance to study after entering college. While teachers certainly need to help clarify points to be studied, students themselves certainly need to develop non-cognitive skills to persevere and keep learning the language with energy.

Grit

Grit is arguably the most well-studied construct in our field, among other non-cognitive skills. Duckworth et al. (2007) defines it as “perseverance and passion for long-term goals” (p. 1087) and explain that it “entails working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress” (pp. 1087-1088). This is certainly an important non-cognitive skill for language learners, who need to study and practice many hours or even years to possess a good command of the language.

The reason why it drew the attention of many scholars in language learning may be that this touches upon at least two important components of a classic definition of motivation (Dörnyei and Ushioda, 2011), how long and how hard they work on the goals. In fact, while grit does not cover the reason why people work on long-term goals, another component of

the classic definition of motivation, it looks simpler for researchers to operationalize.

It is notable that Duckworth et al. (2007) conceptualized grit by interviewing high achievers in a variety of disciplines such as journalism, medicine, law, investment, and painting, and not only academia. Their original 12-item questionnaire included two six-item sub-scales on Consistence of Interest (CI) and Perseverance of Effort (PE), respectively. A Japanese version was developed and included in Takehashi, et al. (2019).

Recently, a language-domain grit (L2-Grit) scale was developed by Teimouri et al. (2022). In addition to the 12 items of the L2-Grit scale that they developed, they used a variety of other measures in the questionnaire, such as language joy (Teimouri, 2018), language anxiety (Taguchi et al., 2009), fixed mindset (Dweck, 2016), intended effort (Taguchi et al., 2009), attention (Teimouri, 2018), L2 willingness-to-communicate (Yashima, 2002), domain-general grit (Duckworth et al., 2007), as well as the Big Five personality traits (Gosling et al., 2003). The questionnaire was administered to 191 L1 Persian students who were studying English translation at a private college. Notably, they collected data from different sources, not merely relying on the self-perception of learners determined by the survey. Students' grades in three English courses and their GPA were checked, and teachers' perceptions of student grit were collected after a semester-long course using two 10-point Likert scales. Teachers' perceptions of their English language proficiency were also collected using a self-report measure (Taguchi et al., 2009). They collected this data to discern the validity and reliability of the L2-Grit scale and its relationship to L2 learners' motivation/emotions and achievement.

One of the authors of the original paper conducted a follow-up study (Sudina et al., 2021). They sought 457 participants enrolled in six universities in different countries (Canada, Japan, South Korea, and the United States) and administered the questionnaire with a total of twenty-five items, including the L2-Grit scale, intrinsic motivation, anxiety, and personal goals scales, which was adapted from Schmidt et al. (1996). In addition, one item, the self-perceived proficiency scale adopted from Taguchi et al. (2009), was used. Although they were primarily interested in the participant differences between the contexts of English as a second language (ESL) and English as a foreign language (EFL), 322 (70%) of the participants were EFL students in Japan. They developed two versions of the survey, a bilingual English-Japanese version and a monolingual English version since the L1 of a majority of the respondents ($N = 362$) was Japanese.

Replication of Teimouri et al. (2022) was also conducted by Mikami (2024). Based on the survey results as well as L2-specific GPA and standardized test scores collected from 106 English majors attending a Japanese university, he found that the factor structure of L2-Grit was supported, and L2-Grit was a consistent predictor of L2-specific GPA and standardized test scores. Notably, he used three scales on non-cognitive skills available in Japanese: L2-Grit (Sudina et al., 2021), domain-general grit (Takehashi et al., 2019), and self-control (Ozaki et al., 2016). A short form of the Big Five personality traits (Namikawa et al., 2012) was also used. Interested readers should consult these sources to access the instruments available.

Optimism

The next construct, optimism, is arguably one of the key constructs in the field of positive psychology. In the previous section, I presented grit, which is important for understanding the energy and fuel for language learners' development. Optimism is the construct that can be seen as their positive perspectives towards language learning. Optimistic learners may be able to enjoy their journey in their language development. Less optimistic learners may worry whether they make mistakes in their production, or their progress might be slow, while more optimistic ones are not. They can perhaps focus on their drive to their journey without worrying too much about small details during the process. Using the popular explanation of how optimistic people look at the glass half-filled with water, they do not worry about whether they have enough resources to complete the task, while less optimistic learners may focus on such matters.

Optimism is defined as "an individual difference variable that reflects the extent to which people hold generalized favorable expectancies for their future" (Carver et al., 2010, p. 879). Carver and Scheier (2014) claimed such a trait-like variable as dispositional optimism, and there are instruments to measure it such as the LOT-R (Revised Life Orientation Test). The LOT-R (Scheier et al., 1994) has been widely used in research (Toyama, 2022), and a Japanese version, which consists of 20 items (assessing both optimism and pessimism with 10 items respectively), is available (Toyama, 2013).

Unfortunately, while an interesting area of research could be assessing the optimism of language learners and the interaction of such traits with other variables, it is rare to find published research using instruments such as the LOT-R to assess the characteristics of language learners. However, motivation researchers such as Dörnyei (e.g., Dörnyei & Chan, 2013) and

Falout et al. (2011) have been discussing the importance of imagining vision and possible selves in the development of language learning. They have been discussing the importance of optimistic learners towards their future.

For example, Falout et al. (2011) developed the present communities of imagining (PCOIz) framework. In their study, teachers asked students to reflect on their past, and helped them to develop their sense of belonging to their class communities using a variety of activities including “making possible selves lists, describing possible selves, sharing job aspirations, reading and imagining about future work environments and attending an imaginary 10-year reunion” (p. 250). While there are not many empirical studies using optimism scales such as the LOT-R to test the relationship with other constructs (see Lei & Lei, 2022 for an example), it would be a good idea to include this construct in a study and find the relationship with other non-cognitive skills. In fact, one of the constructs theoretically related to optimism is resilience, and I will discuss this idea in the next section.

Resilience

In the APA Dictionary of Psychology, resilience is defined as “the process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands” (American Psychological Association, n.d., p. 273). In language classes, for instance, students may fail tests and have to retake the course. Even in recent years, while many students are admitted to and enter college, some students study extra years for the possibility of entering more prestigious universities. Under such circumstances, these students need to overcome a challenging time, which can often isolate them from friends who successfully finished taking classes, or who entered the universities that they wanted to join. The students left behind may need to make adjustments in their lives and cope with the mental stress, perhaps being flexible with their life choices.

There are a variety of scholars who include different constructs in their instruments measuring resilience. One noteworthy example developed in Japan is Hirano (2010), who introduced the Bidimensional Resilience Scale (BRS). The BRS includes 21 items in two dimensions: (1) innate factors such as optimism, control, sociability, and vitality, and (2) acquired factors such as problem-solving, self-understanding, and understanding others. Using the instrument in Japanese, she recently studied the relationship

between innate/acquired resilience and socio-demographic characteristics (e.g., sex, age, education level, employment status, the number of children, and household income) among approximately 3,800 Japanese adults (Ueno et al., 2021). She also studied the development of resilience among 1,284 Japanese adults (aged 20–69) over a 2-year interval: January 2017 and January 2019 (Ueno et al., 2020). In these studies, it was reported that while resilience seemed to be relatively stable among the sample of the study despite individual variation, socio-demographic characteristics could change resilience factors. Although these studies are not related to language learning, interested readers may consult them to understand how psychologists in Japan have studied resilience.

Hiver and Solarte (2022) provided a useful overview of the research done outside of our field, and suggested some directions for resilience research in the field of language education. The key findings from psychology literature include:

1. Resilience is a powerful individual capacity.
 2. Resilience develops as an adaptive and dynamic process in context.
 3. Resilience depends on “ordinary magic.”
 4. Resilience is responsive to intervention and can be promoted.
- (pp. 206-207)

Earlier work on resilience focused on understanding the characteristics of resilient individuals, the importance of their relationships with significant others, and the function of their socio-cultural surroundings. Hiver and Solarte (2022) observe the description of resilience in this vein:

There are two dimensions to this understanding of resilience. The first concerns the existence of a threat or a risk; Individuals are not thought of as resilient unless they have encountered a significant risk or have had to grapple with a threat to their normal functioning... The other dimension is the positive adaptation aspect, whether external (e.g., the absence of substance abuse or delinquency) or internal (e.g., psychological well-being). (p. 206)

While it is important to focus on individuals who experienced a difficult time or threat to their optimal functioning, as stated above, the second wave of research in resilience focused on understanding resilience as a

process of the interaction of social and psychological factors in the environments given (Wright et al., 2013). As Luthar (2006) argued, psychologists realized that environments are important for individuals to develop their resilience. Just like motivation scholars (e.g., Dörnyei and Ushioda, 2019) in the field of language teaching observed in the 2010's, researchers of resilience also realized the importance of studying dynamic interactions between the environment and individuals.

Touching upon the third view of resilience, Masten (2009) coined the term “ordinary magic” and stated that “resilience does not require extraordinary talents or resources, but instead depends on fundamental adaptive systems” (p. 32). As observed in Chiccetti (2010), ordinary people may not realize the common occurrence of resilience in our lives. Using the fundamental adaptive systems that humans possess, we are successfully coping with possible life difficulties. Although threats may occur when such adaptive systems are damaged or destroyed, we happen to experience many events and adapt based on the situation. Such fundamental adaptive systems that we use in our everyday lives can be seen as ordinary magic.

Finally, Hiver and Solarte (2022) observe that by the appropriate intervention, resilience can be promoted. They emphasize the importance of significant others such as family members, peers, teachers, and mentors. They state that resilience “relies on gaining human capital along with social capital and marshaling these both in adaptive responses to challenges and crises (p. 207)”. Along this line, Masten (2009) states that it is important to reduce risk exposure, increase resources, and mobilize and facilitate powerful protective adaptive systems among youths to promote resilience (see Joyce et al., 2018 for a useful review of interventions that promote resilience).

With Hiver and Solarte's (2022) summary in hand, one may realize how complicated it is to research resilience in language learning. In order to research resilience in language learners' development following the definition cited at the beginning of this section, a researcher needs to evaluate language learners' flexibility and adjustment to both internal and external demands when they adapt to difficult life experiences. It may not be an easy task operationalizing this research term to conduct research related to individuals who we see in our classroom.

To focus more on the academic aspect of resilience among students, Martin (2013) coined the term ‘academic buoyancy’, differentiating it from academic resilience, and developed the construct in a paper titled, “Academic buoyancy and academic resilience: Exploring ‘everyday’ and ‘classic’ resilience in the face of academic adversity.” He defined it as:

Academic buoyancy has been defined as a capacity to overcome setbacks, challenges, and difficulties that are part of everyday academic life. Academic resilience has been defined as a capacity to overcome acute and/or chronic adversity that is seen as a major threat to a student's educational development. (p. 488)

While many students experience and negotiate the ups and downs of everyday academic life, few students probably experience acute or chronic adversity. Martin and Marsh (2009) argued that academic resilience studies typically tended to focus on ethnic groups situated in adverse conditions such as poverty or gang violence, or clinical groups such as students with learning disabilities. Thus, academic resilience studies “tend not to refer to a relatively large number of students experiencing ‘everyday’ adversities (p. 355).” For those of us who are interested in assisting language learners who go through difficult academic situations every day and helping them to be resilient in such situations, the distinction between academic buoyancy and resilience is noteworthy. Furthermore, Martin and Marsh (2009) suggest two approaches to studying them:

The first is the variable-focused approach that tests linkages among measures of degree of risk/adversity and qualities that may protect the person from negative consequences and outcomes. The second is the person-focused approach that compares people with different profiles to ascertain what differentiates resilient individuals from non-resilient individuals... We consider it important to conceptualize and assess academic buoyancy and academic resilience from both perspectives. (p. 358)

The two approaches suggested above certainly help us consider our research approach. While researchers may try to collect as much data as possible to increase their N-size, we should also consider collecting data from those with different profiles to differentiate the students whom we are interested in studying.

Possible Link With the Field of Positive Psychology

As proposed in Seligman and Csikszentmihalyi (2000) for psychology in general, studies of Positive Psychology in language learning may be

categorized according to three pillars: (1) language learners' experiences such as positive emotions, (2) language learners' positive character traits, which can lead to individual differences in language learning, and (3) positive institutions, which are ways to set up schools, classrooms, families, and governments that facilitate flourishing among language learners.

How are these topics related to the discussion of non-cognitive skills? The second of these pillars overlaps with the focus of this paper. Typically, referring to *character strengths* or simply *strengths*, scholars in the field of positive psychology have identified constructs that help us function optimally. For instance, Peterson and Seligman (2004) created the Values in Action inventory of strengths, identifying 24 strengths. Linley (2008) also listed 60 strengths, which are "a pre-existing capacity for a particular way of behaving, thinking, or feeling that is authentic and energizing to the user, and enables optimal functioning, development and performance" (p. 9). More specific to language learners' strengths, Lake (2016) proposed an L2 positive self-system, the idea of looking at strengths related to L2-self concepts, which can be divided into the global positive self, the positive L2 self, and the situational and dynamic L2 self.

In a more recent study, Kikuchi and Lake (2021), administered a survey on five separate occasions to about 1,000 college students when they were freshmen and sophomores in order to test the stability of Lake's model (see also, Chen et al., 2020). Constructs in the model were Curiosity, Flourishing, and Hope (global positive self); Interested in L2 self, Mastery Goal Orientation, and Passion (the positive L2 self); and L2 Self-efficacy in L2 listening, speaking, and reading (the situational L2 self). Curiosity, Flourishing and Hope, three character strengths at a global level, have been well-researched topics in the field of Positive Psychology and were included in the model along with constructs such as Passion, L2 Mastery Goal Orientation, and self-efficacy. The researchers found that the global positive self-variables (Curiosity, Flourishing, and Hope) correlated with the L2 domain self-variables (Interested in L2 self, Mastery Goal Orientation, and Passion) more strongly than the three L2 self-efficacy variables.

In another study (Chen et al., 2021), they used measurements of Grit, Interested L2 Self, Grit for L2 learning, L2 listening/reading self-efficacy, and listening/reading anxiety, and tested the model using a survey distributed to 441 Japanese university students. In this study, Grit was measured at two different levels, the global and L2 domain levels. All correlations were found to be statistically significant $p < .05$, except for L2 listening/reading anxiety with grit. Based on their findings, they discussed how general grit

is linked to L2 listening/reading self-efficacy and suggested a possible link between grit for L2 learning and L2 achievement.

As these studies suggest, a promising area of research is to hypothesize a model including research terms used in Positive Psychology and terms related to non-cognitive skills. In the next section, I move on to discuss more concrete ideas for both teachers and researchers.

What Can Language Teachers and Researchers Do About Learners' Non-cognitive Skills?

As a scholar interested in how teachers interact with students to help motivate them to study English in Japan, I often think about what this Japanese word, *ganbare* (try hard), really means when used to encourage students. As a learner of English as well, I recall that I heard this word being used when teachers were asking students to study harder or making compliments about their hard work, as in *Ganbatta-ne* (You tried hard)! When language teachers give this kind of compliment, they should be aware that students used both cognitive and non-cognitive skills for their accomplishments. While students memorized lists of vocabulary and acquired the cognitive strategies to work on readings on the test, they also acquired an ability to be gritty and optimistic to reach their goal, and they were resilient when sometimes receiving poor test results along the way.

While I was considering potential research topics for *JALT Journal* readers, I thought that discussing the importance of non-cognitive skills and introducing terms like Grit, Optimism, and Resilience would help teachers to understand what we may be telling students to do when using a word like *ganbare* (try hard). Students need to be grittier, keep setting proximal goals without being distracted, and be resilient to overcome difficulties in their learning. Of course, there are other non-cognitive skills to be researched, but as someone who intensively studied demotivation among Japanese learners of English about a decade ago (Kikuchi, 2009; Kikuchi & Sakai, 2009; Sakai & Kikuchi, 2009), these research terms strike me the most, as they may explain not only the process of being demotivated, but also of bouncing back to be motivated to continue the long process of language learning.

Although I have been discussing the importance of studying grit, optimism, and resilience in this paper, I also need to point out one caveat for researchers. When we study non-cognitive skills, we should be very careful in operationalizing them. For instance, there has been criticism that grit

is just another newly created research term and we should be cautious in conducting research on this topic. Crede (2018), one of the strong critics of the idea of grit, argues that:

grit is a combination of perseverance and passion... grit scores and perseverance scores are so strongly correlated with one of the Big Five personality traits—conscientiousness—as to suggest that overall grit and perseverance as currently assessed are simply a relabeling of conscientiousness. This apparent “old wine in new bottles” phenomenon suggests that enthusiasm for grit may largely be based on the jangle fallacy, which is the belief that two very similar things are distinct merely because they have different names. (pp. 607-608)

As I have been preparing for this paper, I noticed that there is criticism about many non-cognitive skills like with grit above. Although there are a variety of research terms to be studied among non-cognitive skills, I argue for the importance of carefully designing a study based on a thorough understanding of what researchers are focusing on.

Martin and Marsh (2009) suggested that non-cognitive skills such as academic buoyancy and resilience can be studied using either a variable-focused or person-focused approach. Researchers may study non-cognitive skills and the direct/indirect effects of predictors on the variables that they would like to focus on. Alternatively, researchers can profile learners experiencing critical events and study the trajectory of such students using a case study approach focusing on persons.

For researchers interested in studying the topics described in this paper, here are some suggestions. After reading how researchers study academic resilience and academic buoyancy, which are two related constructs (Martin & Marsh, 2009), I constructed the following steps for researching non-cognitive skills such as Grit, Optimism, and Resilience:

1. Identify a group of learners who succeeded in learning a foreign language over a long period of time.
2. Identify key incidents or persons that helped the learners to focus on language learning using a variety of sources (e.g., interviews involving a variety of people involved, not only questionnaires).

3. Study how their non-cognitive skills developed during the process of language learning, ideally with the collection of data at multiple times.

Studying the non-cognitive skills that language learners possess and develop may not be an easy task. Although there are a variety of instruments available to assess some non-cognitive skills, I believe that researchers should carefully design a study not just by distributing a survey to a group of students, like throwing a net to see what kind of fish might be in it. I hope that this paper will inspire future research on non-cognitive skills in language learning in Japan, where many learners are striving to develop their language for their own success.

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