

**Visualizing Learner Well-Being in Language Learning:  
An Exploratory Classroom Implementation Supporting Reflective Dialogue**

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### Abstract

This study introduces a language learning-specific conceptualization of learner well-being and presents the Language Learning Well-Being (LLWB) questionnaire as a web-based tool designed to support visualization and reflection. Drawing on Self-Determination Theory, positive psychology, and learner autonomy research, the LLWB framework organizes well-being into 15 interrelated dimensions, including meaning, positive emotions, relatedness, autonomy, time, vitality, and achievement. The 60-item instrument generates dimension-level scores displayed as individualized radar charts, enabling learners to view profiles in their learning experiences. Content validity was examined through expert review using Aiken's V coefficient, and item refinement remains ongoing. The tool was piloted with university students in a self-access learning context at two points within one semester. No specific intervention aimed at enhancing well-being was implemented between administrations given the developmental nature of this pilot phase; accordingly, no substantial statistical changes were observed. However, the visualizations revealed consistent configurations across dimensions that learners found personally meaningful. The findings suggest that making well-being visible through multidimensional visualization may support autonomy-supportive learning by encouraging reflection and serving as a potential shared reference point for reflective dialogue.

本研究は、語学学習に特化した学習者ウェルビーイングの概念化を提示し、Web上で利用可能な可視化・内省支援ツール Language Learning Well-Being (LLWB) を紹介する。LLWBは自己決定理論、ポジティブ心理学、学習者オートノミー研究を基盤とし、学習の意義、ポジティブ感情、関係性、自律性、時間、健康、達成感など15の相互関連する側面からウェルビーイングを捉える。60項目の質問紙の回答はレーダーチャートとして可視化され、学習経験のプロファイルとして把握される。内容妥当性は専門家評価に基づき Aiken の V 係数により検証され、現在も改訂が進められている。本研究では大学のセルフアクセス環境において一学期間に2回パイロット調査を実施した。両時点間で特定の介入は行われなかったため、大きな統計的变化は見られなかったが、可視化により側面間の関係性や学習者の経験の特徴が明確になった。これらの結果は、ウェルビーイングの可視化と内省を促し、自律学習支援に資する可能性を示唆している。

*Keywords:* learner well-being, reflective dialogue, learner autonomy, visualization, autonomy-supportive pedagogy

Language learning is often discussed in terms of strategies, goal setting, and self-regulation (Benson, 2011; Holec, 1981). However, even learners who demonstrate strong strategic skills may experience fluctuations in motivation, vitality, and sense of meaning (Ryan & Deci, 2017). These shifts are not always immediately visible to learners themselves, making it difficult to recognize how their psychological experiences influence engagement over time (Mercer & Gregersen, 2020). Learner autonomy has long been positioned as a central aim of language education (Benson, 2011; Holec, 1981; Little, 2007). Yet sustaining autonomy involves more than managing strategies effectively. Learners' sense of agency is closely connected to their emotional experiences, relationships, sense of balance, and overall well-being both inside and outside the classroom (Mercer & Gregersen, 2020; Ryan & Deci, 2017). When well-being is unsettled, even capable learners may find it difficult to maintain engagement or a sense of fulfillment in their learning. Although learner well-being has received increasing attention in applied linguistics, the construct often remains abstract and challenging to articulate (Mercer & Gregersen, 2020; Oxford, 2016). Well-being shifts across contexts and time (Hiver & Al-Hoorie, 2020), yet learners are rarely given structured opportunities to observe these profiles or to reflect on how they relate to their developing autonomy. Without ways to make well-being more visible and open to dialogue, its role in sustaining autonomous learning may remain insufficiently explored.

In this study, a distinction is made between behavioral aspects of learning (e.g., strategy use, goal setting, and self-regulation) and psychological aspects (e.g., motivation, vitality, sense of meaning, and engagement), with learner well-being conceptualized primarily in relation to the latter. In addition, while autonomy is used as a central construct referring to learners' capacity to take charge of their learning, agency is understood here as a more situated expression of this capacity within specific contexts.

In response to this pedagogical need, this study introduces the Language Learning Well-Being (LLWB) tool, a visualization-based digital instrument designed to support ongoing reflection in language learning. The study positions the tool within autonomy-supportive pedagogy and reports on an exploratory classroom implementation. Given the exploratory nature of this pilot implementation, the study addresses the following research questions:

1. What profiles of learner well-being emerge across multiple dimensions through the LLWB questionnaire in a pilot self-access implementation?
2. How do learners make sense of their visualized well-being profiles?

In this study, the term “profile” refers to the configuration of scores across the 15 well-being dimensions as visualized in the radar chart. The following section outlines the theoretical foundations that inform the conceptualization of learner well-being and the design of the LLWB tool.

### **Theoretical Foundations: Autonomy and Learner Well-Being**

#### **Learner Autonomy and Psychological Sustainability**

Learner autonomy has long been regarded as a central concept in language education. Since Holec’s (1981) definition of autonomy as the ability to take charge of one’s own learning, research has emphasized learners’ capacity to set goals, select strategies, monitor progress, and evaluate outcomes. Later studies expanded this perspective by highlighting the cognitive, metacognitive, and contextual dimensions of control (Benson, 2011), as well as the relational and dialogic processes through which autonomy develops (Little, 2007). Therefore, autonomy is understood not simply as independent action, but as a socially situated and mediated capacity. At the same time, sustaining autonomy over time involves more than effective strategy use. Learners who appear strategically capable may still experience fluctuations in motivation, emotional energy, or sense of purpose. From the perspective of self-determination theory, ongoing engagement is supported by the satisfaction of basic psychological needs, including autonomy, competence, and relatedness (Ryan & Deci, 2017). When these needs are not sufficiently met, learners’ capacity to sustain agency may gradually weaken.

These observations suggest that autonomy can be viewed not only as behavioral self-direction but also as a psychologically sustainable process. In extended and often uncertain language learning journeys, conditions that nurture vitality, connectedness, and a sense of balance become increasingly important. From this perspective, learner well-being emerges not as an additional outcome, but as a foundational dimension of sustaining autonomy.

#### **Learner Well-Being in Language Learning**

##### ***The Dynamic and Multidimensional Nature of Learner Well-Being***

Learner well-being has been conceptualized as a multidimensional construct that extends beyond momentary happiness to encompass meaning, relationships, functioning, and personal growth (Ryff, 1989; Seligman, 2011). In educational contexts, well-being involves both feeling good and functioning effectively within social and contextual environments. It is increasingly understood as something that emerges through interaction, engagement, and

shared experience rather than as a purely internal state (Mercer & Gregersen, 2020). Within language learning, interest in well-being has grown as researchers have acknowledged the long-term and emotionally demanding nature of the process. Language learning involves sustained motivation, identity development, and social participation. Experiences such as enjoyment, anxiety, resilience, and hope shape learners' engagement and persistence over time (Dörnyei, 2009; Pekrun, 2006). In this view, well-being can be seen not simply as an outcome of successful learning but as a condition that supports ongoing engagement and autonomy (Mercer & Gregersen, 2020).

Several theoretical perspectives contribute to this understanding. Self-determination theory emphasizes the importance of autonomy, competence, and relatedness for optimal functioning (Ryan & Deci, 2017). Positive psychology highlights the roles of positive emotion, engagement, relationships, meaning, and accomplishment (Seligman, 2011). In the field of language education, Oxford's (2016) EMPATHICS framework brings together emotional, motivational, and contextual dimensions specific to language learning. Together, these perspectives suggest that learner well-being is inherently multidimensional.

Importantly, well-being in language learning is not static. Learners' psychological experiences shift across time and contexts as they respond to changing task demands, relationships, and life circumstances. From a complexity perspective, well-being may be understood as emerging from the interaction of multiple factors rather than as a stable trait (Hiver & Al-Hoorie, 2020). Even small contextual changes may influence learners' sense of vitality or balance, making one-time assessments insufficient for capturing lived experience.

Despite this growing theoretical recognition, learner well-being often remains difficult for learners themselves to articulate. Shifts in energy, connection, or meaning may be felt but not easily named. When such experiences remain implicit, they are less likely to be integrated into reflective dialogue, understood here as a collaborative process in which learners articulate and explore their learning experiences through interaction with others, or autonomy-supportive practice. This challenge points to the importance of pedagogical structures that help learners notice, describe, and interpret fluctuations in their well-being over time. A number of well-being measurement instruments have been developed in psychology, including Ryff's (1989) Psychological Well-Being Scale and assessments based on Seligman's (2011) PERMA model. While these scales provide valuable general indicators of psychological functioning, they were not designed specifically for the situated, longitudinal, and pedagogical realities of language learning. Moreover, most existing tools aim to produce aggregate indices rather than to function as reflective resources embedded in

dialogic practice. These limitations point to the need for a context-sensitive instrument that supports both measurement and reflective engagement within language learning environments.

### ***Conceptualizing Learner Well-Being Across 15 Dimensions***

Existing well-being frameworks have offered important insights into psychological functioning. However, most were developed as general models and were not designed specifically for the lived realities of language learning. Language learning is typically a prolonged and effortful process that unfolds across classroom and everyday contexts. It involves cognitive engagement, emotional regulation, identity development, relational dynamics, and the management of time and energy in daily life. In response to this complexity, the present study develops a language learning-specific conceptualization of learner well-being that draws on major theoretical traditions while remaining pedagogically usable.

The 15 dimensions were identified through an iterative process of theoretical integration and practical reflection. An initial review examined central well-being frameworks in psychology and applied linguistics, including self-determination theory (Ryan & Deci, 2017), the PERMA model (Seligman, 2011), and Oxford's (2016) EMPATHICS framework. This review generated a broad set of constructs related to psychological needs, affective experience, motivational resources, contextual conditions, and personal functioning. During the consolidation phase, areas of conceptual overlap were carefully considered. Constructs that appeared across multiple frameworks were compared and, where appropriate, integrated. For instance, engagement is emphasized in both PERMA and EMPATHICS, and perseverance shares conceptual space with resilience. Related constructs such as grit and persistence were therefore incorporated within resilience to maintain clarity and avoid redundancy. Optimism was examined in relation to positive emotions, and self-esteem and self-confidence were considered alongside competence, with distinctions evaluated in terms of pedagogical usefulness. Flow, while theoretically distinct, was integrated into engagement due to strong experiential overlap in language learning contexts. Through this iterative process, dimensions were retained when they demonstrated both clear theoretical grounding and practical relevance in advising practice and reflective dialogue. Constructs that lacked consistent resonance in language learning settings were not included. The resulting framework, therefore, reflects a dialogue between theory and practice rather than a simple aggregation of existing models.

***Development of the LLWB Framework***

In addition to theoretical integration, the framework was further refined through close attention to language learning-specific experiences. In advising practice, certain contextual factors repeatedly emerged that were less visible in general well-being scales. These included time management, vitality (such as sleep, health, and energy), digital well-being, physical environment, and financial pressures. Although often regarded as peripheral in psychological models, these factors were found to shape learners' engagement and persistence in meaningful ways (Mercer & Gregersen, 2020; Oxford, 2016). Their inclusion reflects an understanding of language learning as situated within broader life contexts rather than limited to classroom performance alone. The number of dimensions was also determined with pedagogical usability in mind. Initial mappings suggested a larger set of categories; however, a highly segmented structure made reflection more complex and potentially difficult for learners to interpret. The 15 dimensions were therefore selected as a balanced structure that maintains theoretical breadth while remaining practically manageable. The intention was not to provide an exhaustive taxonomy of well-being, but to offer a coherent framework that supports recognition of emerging patterns and facilitates reflective dialogue.

From a dynamic systems perspective, the 15 dimensions are conceptualized not as independent or additive variables, but as interrelated domains within a learner's lived experience. Changes in one area may influence patterns across others. For example, changes in time management can affect vitality, which may in turn shape engagement and perceptions of achievement. This relational view resonates with complexity-informed perspectives in applied linguistics, which highlight interaction and non-linearity among psychological processes (Hiver & Al-Hoorie, 2020). From this standpoint, well-being is viewed not as a stable trait, but as an evolving configuration shaped by ongoing interaction among dimensions.

The framework comprises the following 15 dimensions: meaning in learning, achievement, engagement, positive emotions, relationships, competence, autonomy, vitality, time, digital well-being, resilience, humor, physical environment, finance, and overall well-being. Together, these dimensions provide the conceptual foundation for the design of the Language Learning Well-Being (LLWB) questionnaire. To clarify the integrative process underlying this framework, Table 1 summarizes the principal theoretical sources informing each dimension. The table illustrates how the framework was developed through systematic integration across established well-being models, autonomy research, and advising practice.

**Table 1***Theoretical Grounding of the 15 Learner Well-Being Dimensions*

Dimension	Primary theoretical grounding
Meaning in learning	PERMA (Seligman, 2011); reflective dialogue (Kato & Mynard, 2016)
Achievement	PERMA; Self-Determination Theory (Ryan & Deci, 2017); Dweck (2006)
Engagement	PERMA; EMPATHICS (Oxford, 2016); reflective dialogue
Positive emotions	PERMA; EMPATHICS; Fredrickson (2001)
Relatedness	Self-Determination Theory; Mercer & Gregersen (2020); reflective dialogue
Competence	Self-Determination Theory; EMPATHICS
Autonomy	Self-Determination Theory; Tassinari (2012); reflective dialogue
Digital well-being	OECD (2013); UNESCO (2023)
Resilience	EMPATHICS; Martin & Marsh (2008); reflective dialogue
Finance	Self-Determination Theory (contextual resources); EMPATHICS
Physical environment	Mercer & Gregersen (2020); EMPATHICS
Time	EMPATHICS; reflective dialogue
Humor	EMPATHICS (character strengths); PERMA (positive emotion)
Vitality (health, sleep, exercise)	EMPATHICS; PERMA; Fisher (2000)
Overall well-being	Integrative construct across frameworks

As shown in Table 1, each dimension reflects cross-framework integration rather than reliance on a single theoretical source.

### **Advising in Language Learning and Reflective Dialogue**

Advising in language learning (ALL) has developed as a learner-centered approach that supports autonomy through intentional dialogue and structured reflection. Rather than focusing on direct instruction, advising creates dialogic spaces in which learners interpret

their experiences, question underlying assumptions, and take greater ownership of their learning decisions (Mozzon-McPherson, 2001; Mynard, 2020; Mynard & Carson, 2012). Reflection, in this context, is not treated as an isolated cognitive act but as a relational process shaped through interaction.

Research on autonomy has consistently emphasized the importance of reflection and learner awareness in sustaining self-directed learning. Tassinari (2012) described autonomy as a dynamic capacity that develops through ongoing reflection on goals, emotions, strategies, and contextual conditions. Building on this perspective, reflective dialogue has been conceptualized as a collaborative process in which learners and advisors co-construct meaning by exploring experiences, beliefs, and emotions related to learning (Kato & Mynard, 2016). Through purposeful questioning and empathic listening, advisors support learners in developing awareness and translating reflection into informed action (Mynard, 2020).

In practice, advising conversations frequently extend beyond strategy use to include learners' vitality, relationships, balance, and sense of purpose. This suggests a close connection between reflective dialogue and learner well-being. Advising approaches informed by Self-Determination Theory have been shown to nurture learners' psychological needs, thereby supporting both autonomy and well-being (Shelton-Strong, 2025). Recent work has further argued that advising can be conceptualized as a psychologically sustainable practice in which dialogue supports learners' ongoing meaning-making and well-being (Kato, 2026). From this perspective, advising can be understood as an autonomy-supportive environment that links dialogue with psychological sustainability.

At the same time, engaging in reflective dialogue requires a certain level of awareness. Learners may sense fluctuations in energy, connection, or motivation without being able to articulate them clearly. When such experiences remain tacit, it can be difficult to bring them fully into dialogue. This points to the value of structured scaffolding that helps learners notice and describe patterns in their well-being before or during reflective conversations. The present study responds to this need by introducing a visualization-based tool designed to support reflective dialogue within autonomy-supportive pedagogy.

Previous research suggests that autonomy cannot be sustained by strategic regulation alone. Rather, it is shaped by learners' evolving psychological experiences over time (Murray, 2021). While advising offers dialogic spaces for meaning-making, learners may benefit from additional support that helps them notice and articulate these experiences more clearly. The following section introduces the design of a visualization-based questionnaire developed with this purpose in mind.

## Method

### Questionnaire Design and Visualization Principles

The Language Learning Well-Being (LLWB) questionnaire was developed to represent the 15-dimensional framework described in the previous section. Consistent with the view of well-being as dynamic and multidimensional, the tool was designed primarily as a reflective and dialogic resource rather than as a diagnostic instrument. This orientation draws on pedagogical work that positions structured reflection as central to learner development in language learning contexts (Mynard et al., 2023). Although established well-being scales such as PERMA-based instruments (Seligman, 2011) and Ryff's (1989) Psychological Well-Being Scale informed the broader conceptual background, the LLWB questionnaire was created specifically for language learning contexts. Its purpose is not to classify learners or generate fixed judgments, but to support awareness, comparison over time, and meaning-making within autonomy-supportive environments.

The questionnaire consists of 60 items, with four items representing each of the 15 dimensions. This number was selected to balance conceptual coverage with practical usability. Item development was guided by three considerations: theoretical alignment, experiential relevance, and clarity for reflection. Rather than relying on abstract psychological terminology, items were written to reflect learners' lived experiences. For example, items targeting meaning include statements such as "I feel that my language learning is important and valuable in my life," while the dimension of time includes statements such as "I can secure enough time for my language learning." Each dimension includes one negatively worded item. This design invites careful reading and aims to reduce the likelihood of uniform response patterns. It also encourages learners to reflect on possible tensions within their experience. For instance, alongside positively framed statements about engagement, learners encounter items such as "I often feel too exhausted to engage fully in language learning." Negatively worded items were reverse-scored prior to analysis. All items were rated on a 7-point Likert scale ranging from strongly disagree to strongly agree. A 7-point scale was chosen to capture nuanced differences while remaining manageable for reflective interpretation. The instrument was developed for bilingual use in Japanese and English. Translation was conducted through careful review to maintain conceptual equivalence, with attention to clarity and cultural appropriateness.

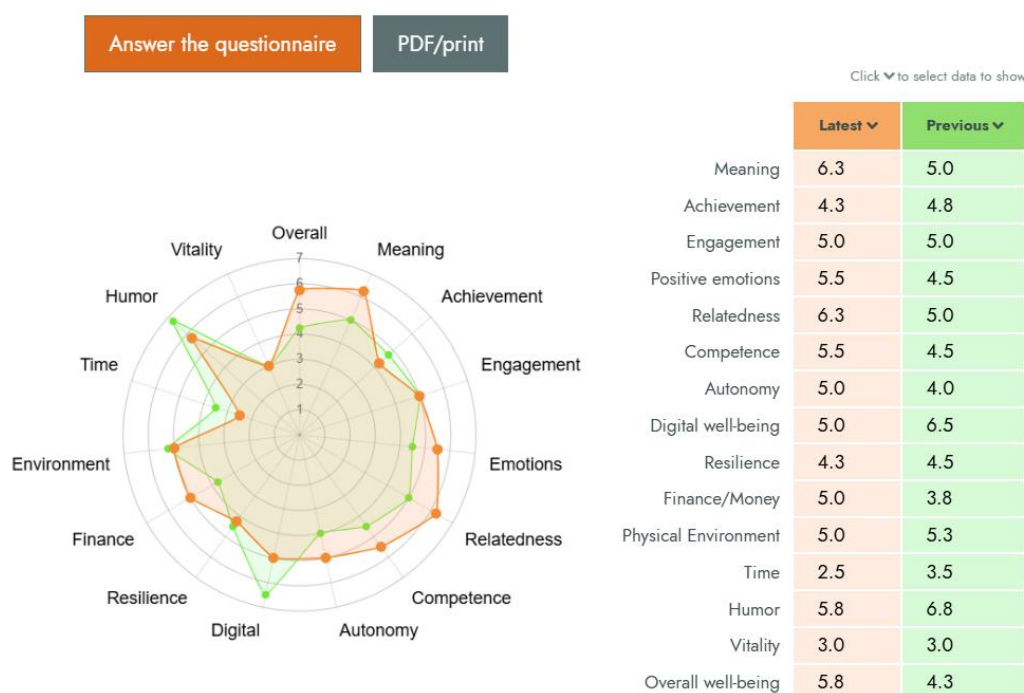
The understanding of well-being as a subjective and multilayered experience was influenced by Maeno and Maeno's (2022) well-being circle framework. The questionnaire

builds on an earlier exploratory learner well-being framework (Kato & Yoshinaga, 2026) and extends it through visualization and language-learning-specific refinement.

A central feature of the LLWB questionnaire is its visualization component. Upon completion, responses are converted into dimension-level scores and displayed in an individualized radar chart. Rather than producing a single composite score, the chart highlights relationships across well-being dimensions. This approach reflects an understanding of well-being as interconnected and encourages learners to notice relationships among dimensions. The LLWB questionnaire is intended for repeated use. Because well-being is viewed as evolving and context-sensitive, a single administration is not treated as definitive. Learners are encouraged to revisit the questionnaire at different stages of their learning and compare profiles over time. In this way, visualization supports reflective dialogue by providing a shared and concrete reference point. A sample screenshot of the web-based interface is provided in Figure 1. A prototype online version of the LLWB tool, including all questionnaire items, is currently available in both Japanese and English to support classroom and advising use. (URL <https://well-being-questionnaire.web.app/>)

**Figure 1**

*Screenshot of the Web-Based LLWB Questionnaire Showing a Visualized Well-Being Profile*



## Validation and Pilot Implementation

### *Content Validity*

Content validity of the LLWB questionnaire was examined through expert review using Aiken's V coefficient. Aiken's V was selected because it allows quantification of expert agreement regarding item relevance while accommodating small panels of specialists, which is common in instrument development research (Aiken, 1985; Penfield & Giacobbi, 2004). Five experts participated in the review process, including three Japanese scholars and two native English-speaking scholars. Reviewers had established backgrounds in learner autonomy, well-being research, Self-Determination Theory, positive psychology, and advising in language learning. The inclusion of both Japanese and English-speaking experts ensured conceptual clarity across the bilingual versions of the instrument.

All 60 items were evaluated for relevance to their intended dimension using a 4-point scale (1 = not relevant, 4 = highly relevant). A 4-point scale was selected to avoid a neutral midpoint and encourage clear evaluative judgment. For each item, Aiken's V coefficient was calculated using the standard formula:

$$V = \frac{\sum (s_i - l)}{[n(c - l)]}$$

where  $s_i$  represents each expert's rating,  $l$  the lowest possible rating,  $c$  the highest possible rating, and  $n$  the number of experts.

The overall mean Aiken's V across all items was 0.66. In line with commonly referenced interpretive guidelines for small expert panels, a value of 0.65 was adopted as a practical threshold for acceptable content validity. The majority of items met or exceeded this level. Subscale-level averages were also examined to identify dimensions requiring refinement. Items that received lower ratings in the expert review were revised to improve clarity and conceptual alignment. The revisions focused on refining wording rather than changing the underlying dimensions. For example, an autonomy item originally phrased as "I evaluate myself based on what I personally value, rather than what others consider important" was revised to "I make choices and decisions based on what I personally value." This revision reflected feedback that autonomy, within Self-Determination Theory, relates more directly to volitional action than to self-evaluation. In total, 21 items were revised before the questionnaire was implemented in the pilot study.

The LLWB questionnaire should be understood as an evolving instrument rather than a finished product. After the initial validation and revisions, a second phase of content review began with the same panel of experts. This follow-up allows comparison across versions and

supports continued refinement of item wording and conceptual clarity. This step-by-step approach reflects the developmental nature of the project. Validation is treated not as a one-time event, but as an ongoing process. The present study therefore reports findings based on the first revised version of the questionnaire.

### ***Participants and Procedure***

The LLWB questionnaire was piloted with 30 university students enrolled in a self-access learning module. The pilot implementation was guided by the following research questions: (1) What multidimensional learner well-being profiles emerged through the LLWB questionnaire in a pilot self-access implementation?; and (2) How did learners make sense of their visualized well-being profiles?

Participants included first-year ( $n = 24$ ), second-year ( $n = 3$ ), and fourth-year ( $n = 3$ ) English-major undergraduate students. The questionnaire was administered online at the beginning and end of the spring 2025 semester. Upon completion, participants received immediate visual feedback through the web-based interface. No structured reflective dialogue activities were implemented as part of the pilot; however, participants were invited to reflect on their visualized profiles, and brief qualitative feedback was collected through classroom discussions and obtained during an oral interview with the course instructors to explore their interpretations. Future research will incorporate structured reflective dialogue activities, including positive interventions, to examine their potential impact on learners' well-being profiles.

### **Findings**

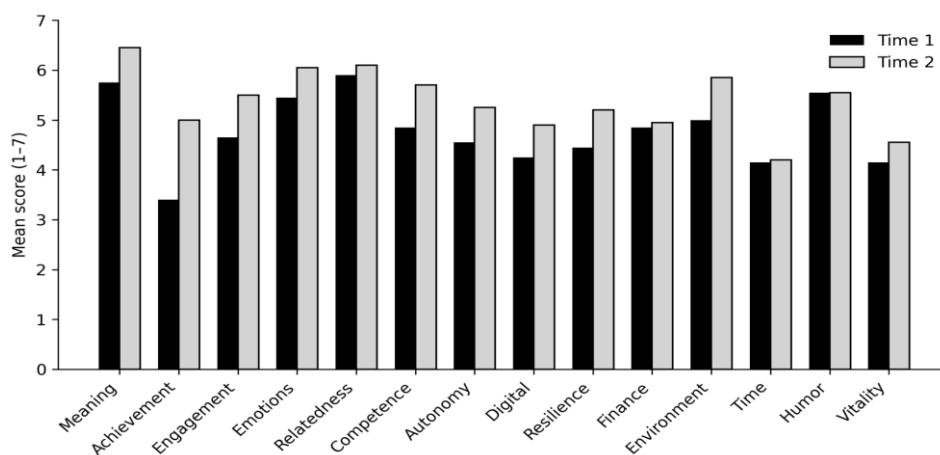
As this study was exploratory in nature and involved a relatively small sample, no inferential statistical analyses were conducted. The descriptive profiles are therefore presented to illustrate tendencies rather than to claim statistical effects. Descriptive results from the first administration showed variation across the 15 well-being dimensions. Higher mean scores were observed in meaning in learning ( $M = 5.75$ ), positive emotions ( $M = 5.45$ ), relatedness ( $M = 5.90$ ), and humor ( $M = 5.55$ ). In contrast, lower mean scores appeared in achievement ( $M = 3.40$ ), time ( $M = 4.15$ ), and vitality ( $M = 4.15$ ). These profile-based findings suggest that learners felt emotionally engaged and relationally connected to their learning, while at the same time perceiving less progress and fewer personal resources, such as time and energy.

A second administration was conducted at the end of the semester, approximately two months after the first. Figure 2 presents mean scores across the two time points. As shown in

Figure 2, differences between Time 1 and Time 2 remained minimal across most dimensions, indicating relative stability over the semester. While modest upward shifts were observed in several dimensions, including achievement, competence, and environment, overall differences between Time 1 and Time 2 remained minimal. For example, time remained relatively stable (4.15 → 4.20), and humor showed no noticeable change (5.55 → 5.55).

**Figure 2**

*Mean Scores Across 15 Learner Well-Being Dimensions at Two Time Points (n = 30)*



*Note.* Scores range from 1 to 7.

The relative stability across the semester was not unexpected, as no intentional well-being intervention was introduced. The questionnaire was used primarily as a reflective and dialogic resource rather than as a structured enhancement program. In this context, the absence of substantial change can be understood as theoretically coherent rather than problematic. More noteworthy than overall change was the consistency of the profiles across dimensions. Across both administrations, meaning in learning, positive emotions, relatedness, and humor remained comparatively high, whereas achievement, time, and vitality consistently appeared among the lower-scoring dimensions. This configuration suggests that learners valued and emotionally engaged with language learning, yet did not uniformly experience a strong sense of progress or sufficient time and energy.

Qualitative insights were drawn from classroom discussions following completion of the questionnaire. These insights were obtained through an oral interview with the course instructors and were examined thematically to identify recurring themes. The classroom discussions provided further insight into how learners engaged with their visualized profiles. Many students reported that the radar chart encouraged comparison across dimensions and

made previously diffuse concerns easier to articulate. Several noted that language progress did not necessarily correspond to overall well-being, prompting reflection on balance rather than performance alone. Repeated use appeared particularly meaningful: learners who completed the questionnaire twice described greater awareness of subtle shifts and interconnections among dimensions. Some initially focused primarily on lower scores and required facilitative prompts to identify strengths and possible next steps, highlighting the importance of guided dialogue. The bilingual format was generally perceived as accessible and easy to interpret.

Although limited in scale and exploratory in nature, this pilot implementation suggests that the LLWB questionnaire can reveal structural profiles of learner well-being and support reflective awareness within autonomy-supportive contexts. The next phase of this research will involve the design and implementation of targeted well-being-oriented pedagogical interventions to examine whether intentional support produces measurable shifts in specific dimensions.

### **Discussion**

The findings offer tentative responses to the two exploratory research questions. First, the LLWB questionnaire revealed relatively stable multidimensional profiles across the two administrations. Meaning, positive emotions, relatedness, and humor tended to appear higher, whereas achievement, time, and vitality appeared lower. These configurations suggest that emotional engagement did not always align with perceived progress or available resources. Second, learners' reflections indicate that the visualization supported the interpretation of their experiences. The radar chart helped learners compare dimensions and articulate previously diffuse concerns, functioning as a shared reference point in advising dialogue.

### **Visualization as Pre-Dialogic Scaffolding**

The primary contribution of the LLWB questionnaire lies not only in the scores it produces, but in the reflective space that visualization creates. Reflection has long been recognized as central to learner development in language education (Mynard et al., 2023). The present study extends this perspective by exploring how visualization may support reflection before dialogue begins. Although structured reflective dialogue was not implemented in this pilot study, the visualized profiles were positioned as potential shared reference points that could support reflective dialogue in advising or classroom contexts.

When learners see their experiences displayed graphically, what feels vague or difficult to explain becomes visible. Once visible, it becomes easier to talk about. In this way, the radar chart serves as a mediational artifact that supports reflection rather than evaluation.

The pilot findings showed uneven well-being profiles across dimensions. Meaning, positive emotions, and relatedness were relatively high. Achievement, time, and vitality were lower. These differences are important because they reveal relationships among dimensions. A single overall score would not show this structure. The visualization allowed learners to notice how different aspects of their learning experience were connected. Students' responses help clarify this process. Many said that the wheel chart helped them compare dimensions and talk more deeply in peer and advising contexts. Some noticed subtle shifts when they completed the questionnaire a second time. Others realized that language progress did not always match their overall sense of well-being. A few focused first on lower scores. This made the role of guided dialogue especially important, as it helped them reinterpret their profiles more constructively. Taken together, these findings suggest that visualization can function as pre-dialogic scaffolding. It provides a shared reference point. It reduces the difficulty of putting complex feelings into words. It supports movement toward more structured reflection.

### **Stability and the Dynamic Nature of Well-Being**

Two administrations were conducted, but significant overall shifts were not observed. This was not unexpected, as no intentional well-being intervention took place during the semester. Well-being does not necessarily increase through routine participation in learning. The relative stability may reflect a form of dynamic balance. When learners compared their profiles, changes appeared as shifts in configuration rather than clear improvement or decline. This finding aligns with complexity-informed perspectives, which view psychological states as context-sensitive and evolving rather than linear.

### **Theoretical Implications: Autonomy as Psychologically Sustainable**

The multidimensional profiles observed in this study suggest that learner autonomy depends on more than strategies or goal-setting. Agency appears closely connected to affective tone, relational support, available time, and physical vitality. This perspective also aligns with relational views of autonomy, which highlight the role of high-quality relationships in sustaining learner agency over time (Kato, 2022). Viewing well-being as an enabling condition shifts the focus from performance to sustainability. The LLWB questionnaire offers learners a way to monitor these conditions over time. Autonomy, in this

sense, becomes an ongoing process rather than a fixed outcome. It appears to be shaped through learners' relationships, contexts, and evolving life conditions, rather than existing as a stable personal quality.

### **Pedagogical Implications for Self-Access Learning and Advising**

The findings show how visualization can be used within autonomy-supportive pedagogy without imposing fixed targets. In advising and self-access contexts, the radar chart can serve as a shared tool that helps learners talk not only about strategies, but also about workload, relationships, health, and balance. The LLWB questionnaire does not prescribe what a "good" profile should look like. Learners interpret their own data. This approach aligns with principles of awareness, choice, and ownership, understood here as learners' sense of control and responsibility over their learning processes. Measurement becomes a starting point for dialogue, not a judgment of performance.

### **The Reflective Visualization Cycle**

Taken together, the findings also suggest that the LLWB questionnaire functions not only as a measurement tool but as part of an ongoing reflective process. This process links visualization, interpretation, dialogue, and action within an autonomy-supportive framework. The cycle begins with completion of the questionnaire and the generation of a radar chart. The visualization makes multidimensional patterns visible. It gives learners something concrete to look at. From there, learners interpret their profiles. The tool does not provide normative standards. Instead, it invites learners to notice relationships, imbalances, and tensions across dimensions. The next phase unfolds in dialogue. The visual profile serves as a shared reference point. It supports discussion and reduces the difficulty of explaining complex internal experiences. Through this dialogue, learners may begin to identify possible adjustments in strategies, priorities, or learning conditions. These actions are not prescribed. They emerge from the learner's own interpretation.

When repeated over time, this cycle enables learners to notice reconfigurations rather than linear improvement. Well-being does not simply increase. It shifts. It reorganizes. This longitudinal orientation reflects a dynamic understanding of well-being as context-sensitive and evolving. In this way, visualization becomes more than a display of scores. It becomes a bridge between multidimensional well-being theory and everyday pedagogical practice.

### **Limitations**

Several limitations of this study should be acknowledged. The pilot involved a relatively small sample from a single institutional context, and the findings should therefore be interpreted as exploratory rather than generalizable. The study relied primarily on self-report data, which may reflect response tendencies or subjective interpretation. Initial content validity was supported through expert review using Aiken's  $V$  coefficient. However, further psychometric examination will be important. This includes analysis of internal consistency, dimensional structure, and longitudinal reliability. A second validation phase is currently underway to refine item clarity and strengthen conceptual alignment.

### **Conclusion**

This study introduced a language learning-specific conceptualization of learner well-being and presented the Language Learning Well-Being (LLWB) questionnaire as a web-based visual and reflective tool. By organizing well-being across 15 interrelated dimensions and displaying individualized radar charts, the LLWB framework makes visible profiles of learners' well-being that might otherwise remain unnoticed. The exploratory classroom implementation suggests that multidimensional visualization can support reflection before dialogue begins. Rather than treating well-being as a fixed outcome to be optimized, this study views it as a dynamic configuration that can be revisited and reinterpreted over time.

Future research will extend this exploratory phase by incorporating structured positive interventions designed to support specific dimensions of learner well-being. Through repeated visualization and guided dialogue, the LLWB tool may illuminate how patterns shift in response to intentional pedagogical support. A practical guidebook for classroom and advising implementation is currently in preparation, with the aim of integrating well-being-oriented practices more systematically within autonomy-supportive learning environments.

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