

Online Resource 1

Supplementary Material corresponding to the article “Subjective Task Value and Activating Affect in English Learning: Construct Differentiation and Associations with Proficiency”

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REFERENCES

El inglés para un estudiante [English for a student]								
Percepción del inglés [English perception]								
He sido informada/o y... [I've been informed and...]		☐ Consiento participar en el estudio. [I consent to participate in this study.]						
		☐ No consiento y prefiero no participar en el estudio. [I do not consent and I prefer not to participate in this study.]						
Datos personales. Por favor, contesta a las siguientes preguntas: [Personal data. Please answer the following questions:]								
Elabora una clave formada por: inicial de tu primer/a y segundo/a progenitor/a (madre, padre, etc), dos últimas cifras y letra de tu DNI (por ejemplo: <u>MJ51A</u>). Esto permitirá comparar los datos que nos proporcionas a lo largo del tiempo. [Create a personal code consisting of: initial of your first and second parent (mother, father, etc.), last two digits and letter of your ID (for example: MJ51A). This will allow us to compare the data you provide over time.]								
¿Cómo te identificas? [How do you identify yourself?]		☐ Mujer [Woman]						
		☐ Man [Hombre]						
		☐ Otro [Other]						
Señala el grado que cursas: [Select the degree you are actually enrolled in:]		☐ Educación Infantil [Pre-school education]						
		☐ Educación Primaria [Primary education]						
Estudias en la: [You study in:]		☐ [Faculty and campus details masked for peer review] [Faculty and campus details masked for peer review]						
		☐ [Faculty and campus details masked for peer review] [Faculty and campus details masked for peer review]						
¿Cómo accediste al grado de educación? [How did you access the education degree?]		☐ Bachillerato de Ciencias [Baccalaureate of Science]						
		☐ Bachillerato de Humanidades o Ciencias Sociales [Baccalaureate of Humanities or Social Sciences]						
		☐ Bachillerato de Arte [Baccalaureate of Arts]						
		☐ Formación Profesional [Vocational Training]						
		☐ Otros [Other]						
Percepción del inglés para un estudiante. Contesta a las siguientes preguntas (de 1 "fuertemente en desacuerdo" a 7 "totalmente de acuerdo"). [Student's perception of English. Answer the following questions (from 1 “strongly disagree” to 7 “strongly agree”).]								
Tengo curiosidad por utilizar el inglés en mi futuro profesional como docente. [I am curious to use English in my professional future as a teacher.]		1 ○	2 ○	3 ○	4 ○	5 ○	6 ○	7 ○
El inglés será útil para mi futuro profesional como docente. [English will be useful for my professional future as a teacher.]		1 ○	2 ○	3 ○	4 ○	5 ○	6 ○	7 ○
Entender el inglés es esencial para mi futuro profesional como docente. [Understanding English is essential for my professional future as a teacher.]		1 ○	2 ○	3 ○	4 ○	5 ○	6 ○	7 ○

Como estudiante, me preocupa que la asignatura de inglés me pueda bajar la nota media de la carrera. [As a student, I am concerned that the English course may lower my grade point average.]	1 ○	2 ○	3 ○	4 ○	5 ○	6 ○	7 ○
Me resulta atractivo utilizar el inglés en mi futuro profesional como docente. [I find it attractive to use English in my future career as a teacher.]	1 ○	2 ○	3 ○	4 ○	5 ○	6 ○	7 ○
Es importante poder comunicarme en inglés para mi futuro profesional como docente. [It is important to be able to communicate in English for my professional future as a teacher.]	1 ○	2 ○	3 ○	4 ○	5 ○	6 ○	7 ○
Me asusta un poco tener que comunicarme en inglés en mi futuro como docente. [I am afraid of having to communicate in English in my future as a teacher.]	1 ○	2 ○	3 ○	4 ○	5 ○	6 ○	7 ○
Podría ser entretenido utilizar el inglés en mi profesión como docente. [It could be fun to use English in my profession as a teacher.]	1 ○	2 ○	3 ○	4 ○	5 ○	6 ○	7 ○
El inglés es un recurso valioso para mi futuro profesional como docente. [English is a valuable resource for my professional future as a teacher.]	1 ○	2 ○	3 ○	4 ○	5 ○	6 ○	7 ○
Podría ser interesante utilizar el inglés para mi futuro profesional como docente. [It could be interesting to use English for my professional future as a teacher.]	1 ○	2 ○	3 ○	4 ○	5 ○	6 ○	7 ○
La asignatura de inglés me supone un esfuerzo adicional. [The English course is an additional effort for me.]	1 ○	2 ○	3 ○	4 ○	5 ○	6 ○	7 ○
¿Qué emociones sientes o has sentido respecto a la asignatura de inglés? Señala la intensidad desde 1 "nada" a 5 "mucho o intensamente". [What emotions do you feel or have you felt about the subject of English? Mark the intensity from 1 "not at all" to 5 "very much or intensely"]							
Inseguridad. [Insecurity.]	1 ○	2 ○	3 ○	4 ○	5 ○		
Alegría. [Joy.]	1 ○	2 ○	3 ○	4 ○	5 ○		
Nerviosismo. [Nervousness.]	1 ○	2 ○	3 ○	4 ○	5 ○		
Confianza. [Confidence.]	1 ○	2 ○	3 ○	4 ○	5 ○		
Aburrimiento. [Boredom.]	1 ○	2 ○	3 ○	4 ○	5 ○		
Satisfacción. [Satisfaction.]	1 ○	2 ○	3 ○	4 ○	5 ○		
Frustración. [Frustration.]	1 ○	2 ○	3 ○	4 ○	5 ○		
Entusiasmo. [Enthusiasm.]	1 ○	2 ○	3 ○	4 ○	5 ○		
Preocupación. [Concern.]	1 ○	2 ○	3 ○	4 ○	5 ○		
Diversión. [Amusement.]	1 ○	2 ○	3 ○	4 ○	5 ○		
Incertidumbre.	1 ○	2 ○	3 ○	4 ○	5 ○		

[Uncertainty.]					
Vergüenza.	1	2	3	4	5
[Embarrassment.]	○	○	○	○	○
Sorpresa.	1	2	3	4	5
[Surprise.]	○	○	○	○	○
Miedo.	1	2	3	4	5
[Fear.]	○	○	○	○	○
*Conocimiento de Inglés: [English knowledge:]					
1. Can I sit here?	☐ Sorry, I did that. ☐ It's the same place. ☐ Only for half an hour.				
2. What colour will you paint the living room?	☐ I hope it was right. ☐ We can't decide. ☐ It wasn't very difficult.				
3. I can't understand this book.	☐ Would you like some help? ☐ Don't you know? ☐ I suppose you can.				
4. I'd like one room for tomorrow night.	☐ How much did you pay? ☐ Afternoon and evening. ☐ I'll just check for you.				
5. Shall we leave for the cinema now?	☐ I'm too tired. ☐ It's very good. ☐ Not at all.				
6. Her vision was ____ bad that she couldn't read the menu.	☐ such ☐ too ☐ so ☐ very				
7. You need to decide ____ and for all what are you going to do.	☐ here ☐ once ☐ first ☐ finally				
8. Don't put your glass on the ____ of the table – someone will knock it off.	☐ outside ☐ edge ☐ boundary ☐ border				
9. Sorry! - I didn't ____ to interrupt you.	☐ hope ☐ think ☐ mean ☐ suppose				
10. The band started the concert ____ their most popular single.	☐ by ☐ with ☐ it ☐ as				
11. Would you mind ____ this glass a wipe before putting it in the cupboard?	☐ making ☐ doing ☐ getting ☐ giving				
12. I was looking forward ____ in the new sushi restaurant, but it's closed on Mondays.	☐ to eat ☐ to have eaten ☐ to eating ☐ eating				
13. ____ tired Sammy is when she gets home from the gym, she always makes time to say goodnight to the children.	☐ Whatever ☐ No matter how ☐ However much ☐ Although ☐ then				

14. It was only five days ago ____ he started his new job.	☐ since
	☐ after
	☐ that
15. My girlfriend didn't pick the hotel I wanted, but she has ____ a room especially for us.	☐ booked
	☐ ordered
	☐ commanded
	☐ asked
16. Have you got time to talk about what I sent you or are you ____ to go?	☐ thinking
	☐ round
	☐ planned
	☐ about
17. He has lived in Madrid for ____ a month.	☐ quite
	☐ beyond
	☐ already
	☐ almost
18. Once the car starts, you cannot ____ your seat belt.	☐ undress
	☐ unfasten
	☐ unlock
	☐ untie
19. María left Paris because she had no ____ to live.	☐ place
	☐ position
	☐ opportunity
	☐ possibility
20. Students had ____ interest in the subject.	☐ little
	☐ small
	☐ light
	☐ mere
21. I'd rather you ____ to the kids why they can't be noisy at night.	☐ would explain
	☐ explained
	☐ to explain
	☐ will explain
22. Before agreeing, the government considered all ____ of the argument.	☐ sides
	☐ features
	☐ perspectives
	☐ shades
23. This car has been recommended as being ____ reliable.	☐ greatly
	☐ highly
	☐ strongly
	☐ readily
24. When John realised he had forgotten my notebook, he decided to ____ his steps.	☐ retrace
	☐ regress
	☐ return
	☐ resume
25. My new office is somewhere in the ____ of the mall.	☐ región
	☐ quarter
	☐ vicinity
	☐ district

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Supplementary Table S1. *Item mapping, construct assignment, and scoring for the value-affect instrument*

Item code	Spanish item	English translation	Construct/domain	Measurement role	Response scale	Scoring direction
INT2	Tengo curiosidad por utilizar el inglés en mi futuro profesional como docente.	I am curious to use English in my professional future as a teacher.	Interest	Multi-item value-scale indicator	1–7	Higher = higher interest
UTY 3	El inglés será útil para mi futuro profesional como docente.	English will be useful for my professional future as a teacher.	Utility	Multi-item value-scale indicator	1–7	Higher = higher utility
UTY 4	Entender el inglés es esencial para mi futuro profesional como docente.	Understanding English is essential for my professional future as a teacher.	Utility	Multi-item value-scale indicator	1–7	Higher = higher utility
CST6	Como estudiante, me preocupa que la asignatura de inglés me pueda bajar la nota media de la carrera.	As a student, I am concerned that the English course may lower my grade point average.	Cost	Multi-item value-scale indicator	1–7	Higher = higher cost
INT6	Me resulta atractivo utilizar el inglés en mi futuro profesional como docente.	I find it attractive to use English in my future career as a teacher.	Interest	Multi-item value-scale indicator	1–7	Higher = higher interest
UTY 5	Es importante poder comunicarme en inglés para mi futuro profesional como docente.	It is important to be able to communicate in English for my professional future as a teacher.	Utility	Multi-item value-scale indicator	1–7	Higher = higher utility
CST7	Me asusta un poco tener que comunicarme en inglés en mi futuro	I am afraid of having to communicate in English in my future as a teacher.	Cost	Multi-item value-scale indicator	1–7	Higher = higher cost

	como docente.					
INT7	Podría ser entretenido utilizar el inglés en mi profesión como docente.	It could be fun to use English in my profession as a teacher.	Interest	Multi-item value-scale indicator	1–7	Higher = higher interest
UTY 6	El inglés es un recurso valioso para mi futuro profesional como docente.	English is a valuable resource for my professional future as a teacher.	Utility	Multi-item value-scale indicator	1–7	Higher = higher utility
INT8	Podría ser interesante utilizar el inglés para mi futuro profesional como docente.	It could be interesting to use English for my professional future as a teacher.	Interest	Multi-item value-scale indicator	1–7	Higher = higher interest
CST8	La asignatura de inglés me supone un esfuerzo adicional.	The English course is an additional effort for me.	Cost	Multi-item value-scale indicator	1–7	Higher = higher cost
INS	Inseguridad	Insecurity	Negative control-related experience	Single-item affective indicator; not included in latent affective factor	1–5	Higher = higher intensity
JOY	Alegría	Joy	Positive activating affect / PAE	Single-item affective indicator; included in PAE latent factor	1–5	Higher = higher intensity
NER	Nerviosismo	Nervousness	Negative activating affect / NAE	Single-item affective indicator; included in NAE latent factor	1–5	Higher = higher intensity
CON	Confianza	Confidence / assurance	Positive control-related experience	Single-item affective indicator; not included in latent affective factor	1–5	Higher = higher intensity
BOR	Aburrimiento	Boredom	Negative deactivating affect	Single-item affective indicator; not included in latent	1–5	Higher = higher intensity

				affective factor		
SAT	Satisfacción	Satisfaction	Positive outcome-related experience	Single-item affective indicator; not included in latent affective factor	1–5	Higher = higher intensity
FRU	Frustración	Frustration	Negative activating affect / NAE	Single-item affective indicator; included in NAE latent factor	1–5	Higher = higher intensity
ENT	Entusiasmo	Enthusiasm	Positive activating affect / PAE	Single-item affective indicator; included in PAE latent factor	1–5	Higher = higher intensity
WOR	Preocupación	Worry	Negative activating affect / NAE	Single-item affective indicator; included in NAE latent factor	1–5	Higher = higher intensity
ENJ	Diversión	Enjoyment / amusement	Positive activating affect / PAE	Single-item affective indicator; included in PAE latent factor	1–5	Higher = higher intensity
UNC	Incertidumbre	Uncertainty	Negative uncertainty-related experience	Single-item affective indicator; not included in latent affective factor	1–5	Higher = higher intensity
EMB	Vergüenza	Embarrassment	Negative activating affect / NAE	Single-item affective indicator; included in NAE latent factor	1–5	Higher = higher intensity
SUR	Sorpresa	Surprise	Bivalent epistemic experience	Single-item affective indicator; not included in latent affective factor	1–5	Higher = higher intensity
FEA	Miedo	Fear	Negative activating affect / NAE	Single-item affective indicator; included in NAE latent factor	1–5	Higher = higher intensity

Note. INT = interest; UTY = utility; CST = cost; PAE = positive activating affect; NAE = negative activating affect. Value items were answered on a 7-point agreement scale ranging from 1 = strongly disagree to 7 = strongly agree. Affective indicators were answered on a 5-point intensity scale ranging from 1 = not at all to 5 = very much/intensely. All items were scored in the same direction, with higher scores indicating higher levels of the target value dimension or affective experience. The terms experience and affective indicator are used for items such as confidence/assurance, insecurity, uncertainty, satisfaction, and surprise because these items were retained as single-item indicators rather than modeled as discrete latent emotions.

Supplementary Table S2. Theoretically informed classification of affective indicators and prototypical triggering situations. Affective experiences are classified according to Pekrun's (2023) three-dimensional taxonomy of achievement emotions within the framework of Control-Value Theory (Pekrun et al., 2023). Each affective experience is characterized in terms of its focus (activity, outcome, or information), temporal orientation (prospective, retrospective, unexpected), valence, activation level, relation to control-value appraisals, and prototypical triggering situations in the context of English language learning. In this taxonomy, valence refers to affective polarity (positive vs. negative), and activation corresponds to arousal (high vs. low). The classifications and triggering situations are theoretically informed and illustrative; they were not empirically tested in the present study.

Affective experiences	Focus	Temporal Orientation	Valence	Activation	Control and Value	Typical Triggering Situation
Joy	Outcome	Prospective or retrospective	Positive	Activating	High control and high-value	Students perform successfully, demonstrating English proficiency.
Enjoyment	Activity	Concurrent	Positive	Activating	Valued activity	Students discover that learning English can be both educational and entertaining.
Enthusiasm	Activity	Prospective	Positive	Activating	High value and interest	Students engage with interactive learning tasks.
Surprise	Information	Unexpected	Mixed	Activating	Linked to novel or profound input	Students encounter unexpectedly complex or interesting content.
Satisfaction^a	Outcome	Retrospective (or Prospective)	Positive	Deactivating	Perceived control and positive outcome	Students complete tasks effectively and feel fulfilled.
Confidence^b (Assurance)	Outcome	Prospective	Positive	Deactivating	High perceived control and self-efficacy	Students feel assured in their ability to succeed.
Worry	Outcome	Prospective	Negative	Activating	Low control, high value	Students anticipate mistakes or failure.
Frustration	Activity	Concurrent	Negative	Activating	Low control perception	Students encounter obstacles that hinder performance.

Nervousness	Activity	Prospective	Negative	Activating	Low control.	Students face unfamiliar or challenging tasks.
Embarrassment	Outcome	Retrospective	Negative	Activating	Low control	Students fail publicly or do not meet expectations.
Fear	Outcome	Prospective	Negative	Activating	Low control, high value	Students fear failing or being judged.
Insecurity	Activity	Prospective	Negative	Activating	Low control and low value	Students feel uncertain about their linguistic competence.
Boredom	Activity	Concurrent	Negative	Deactivating	Low control and low value	The activity feels unstimulating or irrelevant.
Uncertainty	Outcome	Prospective	Negative	Activating	Low or unclear control, high-value	Students face ambiguity or lack the knowledge to complete the task confidently.

^aSatisfaction is commonly described as a retrospective outcome emotion, arising when students complete a task with enthusiasm and understanding, resulting in a successful or positive outcome (Pekrun et al., 2023). However, it may also have a prospective dimension if students anticipate that the activity will be engaging and fulfilling.

^b The Spanish word *confianza* (usually translated as *confidence*) expresses a pleasant, relaxed emotional state involving subjective certainty about upcoming success, corresponding to the English word “assurance” in Pekrun’s terminology.

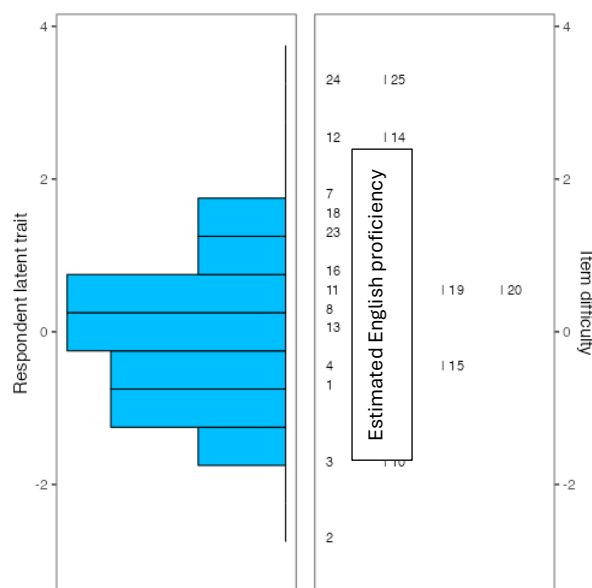
Supplementary Table S3. Pilot-stage item screening for the initial 25-item English proficiency pool

Original item	Final status/code	Proportion correct	Difficulty estimate	SE	Infit	Outfit	Screening rationale
1. Can I sit here?	Q1	0.667	-0.756	0.452	0.985	0.961	Retained; acceptable fit and contributed to lower-intermediate coverage
2. What colour will you paint the living room?	Q2	0.917	-2.570	0.752	0.980	1.044	Retained; easy anchor item with acceptable fit
3. I can't understand this book.	Q3	0.833	-1.743	0.564	0.921	0.753	Retained; easy item with acceptable fit
4. I'd like one room for tomorrow night.	Q4	0.625	-0.557	0.441	0.939	0.932	Retained; acceptable fit and useful difficulty coverage
5. Shall we leave for the cinema now?	Q5	0.667	-0.756	0.452	1.045	1.077	Retained; acceptable fit and useful difficulty coverage
6. Her vision was ____ bad that she couldn't read the menu.	Q6	0.625	-0.557	0.441	0.830	0.799	Retained; acceptable fit and useful difficulty coverage
7. You need to decide ____ and for all what are you going to do.	Not retained	0.167	1.741	0.563	0.875	0.703	Not retained; excessive difficulty and limited contribution to final difficulty coverage
8. Don't put your glass on the ____ of the table – someone will knock it off.	Q7	0.458	0.186	0.429	0.963	0.952	Retained; acceptable fit and central difficulty coverage
9. Sorry! I didn't ____ to interrupt you.	Q8	0.417	0.371	0.433	0.924	0.905	Retained; acceptable fit and central difficulty coverage
10. The band started the concert ____ their most popular single.	Q9	0.833	-1.743	0.564	0.930	0.782	Retained; easy item with acceptable fit
11. Would you mind ____ this glass a wipe before putting it in the cupboard?	Q10	0.375	0.561	0.440	0.960	0.950	Retained; acceptable fit and upper-mid difficulty coverage

12. I was looking forward ____ in the new sushi restaurant, but it's closed on Mondays.	Not retained	0.083	2.563	0.750	1.148	1.996	Not retained; excessive difficulty and elevated outfit
13. ____ tired Sammy is when she gets home from the gym, she always makes time to say goodnight to the children.	Q11	0.500	0.003	0.428	0.832	0.810	Retained; acceptable fit and central difficulty coverage
14. It was only five days ago ____ he started his new job.	Not retained	0.083	2.563	0.750	1.116	1.887	Not retained; excessive difficulty and elevated outfit
15. My girlfriend didn't pick the hotel I wanted, but she has ____ a room especially for us.	Q12	0.625	-0.557	0.441	0.911	0.882	Retained; acceptable fit and useful difficulty coverage
16. Have you got time to talk about what I sent you or are you ____ to go?	Q13	0.333	0.760	0.451	1.051	1.076	Retained; acceptable fit and upper-mid difficulty coverage
17. He has lived in Madrid for ____ a month.	Not retained	0.375	0.561	0.440	1.117	1.093	Not retained; redundant difficulty coverage relative to retained items
18. Once the car starts, you cannot ____ your seat belt.	Not retained	0.208	1.450	0.519	1.154	1.221	Not retained; high difficulty and limited contribution to final coverage
19. María left Paris because she had no ____ to live.	Q14	0.375	0.561	0.440	0.922	0.900	Retained; acceptable fit and upper-mid difficulty coverage
20. Students had ____ interest in the subject.	Q15	0.375	0.561	0.440	1.058	1.066	Retained; acceptable pilot-stage fit and useful difficulty coverage
21. I'd rather you ____ to the kids why they can't be noisy at night.	Not retained	0.333	0.760	0.451	1.169	1.237	Not retained; redundant difficulty coverage relative to retained items
22. Before agreeing, the government	Not retained	0.167	1.741	0.563	1.050	1.394	Not retained; high difficulty

considered all _____ of the argument.							and elevated outfit
23. This car has been recommended as being _____ reliable.	Not retained	0.250	1.197	0.488	1.027	0.973	Not retained; high difficulty and limited contribution to final coverage
24. When John realized he had forgotten my notebook, he decided to _____ his steps.	Not retained	0.042	3.318	1.030	1.038	1.105	Not retained; extreme difficulty
25. My new office is somewhere in the _____ of the mall.	Not retained	0.042	3.318	1.030	1.101	3.820	Not retained; extreme difficulty and severe outfit misfit

Note. Items retained for the final 15-item English proficiency criterion are identified by their final item codes, Q1–Q15. Non-retained items were excluded during pilot-stage screening on the basis of item functioning, difficulty coverage, and/or redundancy. Proportion correct refers to the proportion of valid pilot responses answered correctly. SE = standard error of the difficulty estimate. Infit = information-weighted mean-square fit statistic; Outfit = outlier-sensitive mean-square fit statistic. Because the pilot sample was small, the screening rationale was used to support pragmatic item reduction rather than to provide a full validation of the proficiency measure. The 15-item version was fixed after pilot screening and was not further modified in the main sample.



Supplementary Figure S1. Wright map for the initial 25-item English proficiency pool in the pilot sample. The Wright map displays the distribution of pilot participants' estimated English proficiency levels and the difficulty estimates of the initial 25 multiple-choice items. The left panel represents respondents' latent proficiency estimates, with higher positions indicating higher estimated proficiency. The right panel displays item locations, with higher positions indicating greater item difficulty. The figure was used during pilot-stage screening to evaluate item difficulty coverage and to support the selection of the final 15-item English proficiency criterion

Supplementary Table S4. *Analytic criteria and interpretive guidelines used for psychometric and criterion checks.* These criteria were used as interpretive guidelines rather than mechanical decision rules. Model evaluation considered the convergence of multiple indices, the brevity of the instrument, the ordinal response format, sample size, and the classroom-feasible purpose of the measure. The English proficiency measure was evaluated only as a brief external criterion, not as a diagnostic proficiency assessment.

Analysis	Criterion/index	Interpretation used	Reference(s)
CFA	CFI/TLI	acceptable/good fit thresholds	Hu & Bentler, 1999; Kline, 2016; Schreiber et al., 2006
CFA	RMSEA/SRMR	acceptable/good fit thresholds	Hu & Bentler, 1999; Kline, 2016; Schreiber et al., 2006
Reliability	α / ω	$\geq .70$ for initial validation	Nunnally & Bernstein, 1994; McDonald, 1999; Dunn et al., 2014
Convergent evidence	AVE	$\geq .50$	Fornell & Larcker, 1981; Hair et al., 2019
Discriminant evidence	HTMT	$< .90$	Henseler et al., 2015; Voorhees et al., 2016
Rasch item fit	Infit/Outfit	values close to 1; >1.30 inspected	Bond & Fox, 2015; Linacre, 2017; Wright & Linacre, 1994
Local dependence	MADaQ3	lower values indicate less local dependence	Christensen et al., 2017; Marais, 2013

Supplementary Table S5. Item-level descriptive statistics for the value-affect instrument

Item code	Construct/domain	N	Missing	M	SD	Median	IQ R	Min	Max	Skewness	Kurtosis
INT2	Interest	178	0	5.04	1.77	5.00	3.00	1	7	-0.662	-0.383
INT6	Interest	178	0	5.18	1.75	6.00	3.00	1	7	-0.729	-0.435
INT7	Interest	177	1	5.01	1.86	5	3.00	1	7	-0.689	-0.605
INT8	Interest	177	1	5.46	1.68	6	3.00	1	7	-0.978	0.118
UTY3	Utility	178	0	5.70	1.48	6.00	2.00	1	7	-1.21	1.12
UTY4	Utility	178	0	5.57	1.44	6.00	2.00	1	7	-0.948	0.424
UTY5	Utility	177	1	5.72	1.50	6	2.00	1	7	-1.13	0.751
UTY6	Utility	177	1	5.97	1.41	7	2.00	1	7	-1.58	2.26
CST7	Cost	178	0	4.44	2.07	5.00	3.00	1	7	-0.289	-1.24
CST8	Cost	178	0	4.51	2.02	5.00	3.00	1	7	-0.409	-1.08
CST6	Cost	178	0	4.49	2.09	5.00	3.00	1	7	-0.281	-1.30
Joy	PAE	178	0	2.87	1.16	3.00	2.00	1	5	-0.0838	-0.856
Enthusiasm	PAE	178	0	2.97	1.08	3.00	2.00	1	5	-0.175	-0.620
Enjoyment	PAE	178	0	3.02	1.19	3.00	2.00	1	5	-0.104	-0.760
Nervousness	NAE	178	0	3.37	1.34	3.00	3.00	1	5	-0.253	-1.17
Frustration	NAE	178	0	3.01	1.38	3.00	2.00	1	5	0.135	-1.23
Worry	NAE	178	0	3.06	1.35	3.00	2.00	1	5	0.0789	-1.12
Embarrassment	NAE	178	0	3.20	1.36	3.00	2.00	1	5	-0.115	-1.23
Fear	NAE	178	0	2.99	1.42	3.00	2.00	1	5	0.0200	-1.29
Insecurity	Negative control-related experience	178	0	3.20	1.30	3.00	2.00	1	5	-0.184	-1.02
Confidence	Positive control-related experience	177	1	2.92	1.12	3	2.00	1	5	0.0581	-0.679
Boredom	Negative deactivating affect	178	0	2.87	1.27	3.00	2.00	1	5	0.112	-0.972
Satisfaction	Positive outcome-related experience	177	1	3.21	1.10	3	1.00	1	5	-0.279	-0.422
Uncertainty	Negative uncertainty-	178	0	3.03	1.30	3.00	2.00	1	5	0.0939	-0.964

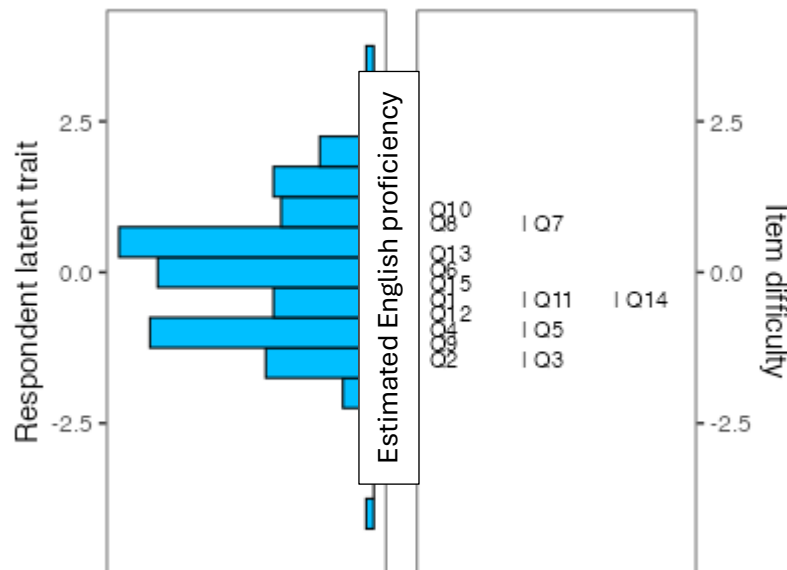
	related experience										
Surprise	Bivalent epistemic experience	17 7	1	2.7 7	1.1 9	3	1.0 0	1	5	0.119	-0.664

Note. INT = interest; UTY = utility; CST = cost; PAE = positive activating affect; NAE = negative activating affect. Value items were rated on a 1–7 agreement scale, whereas affective indicators were rated on a 1–5 intensity scale. Skewness and kurtosis are reported to document distributional characteristics prior to the use of robust and non-parametric procedures.

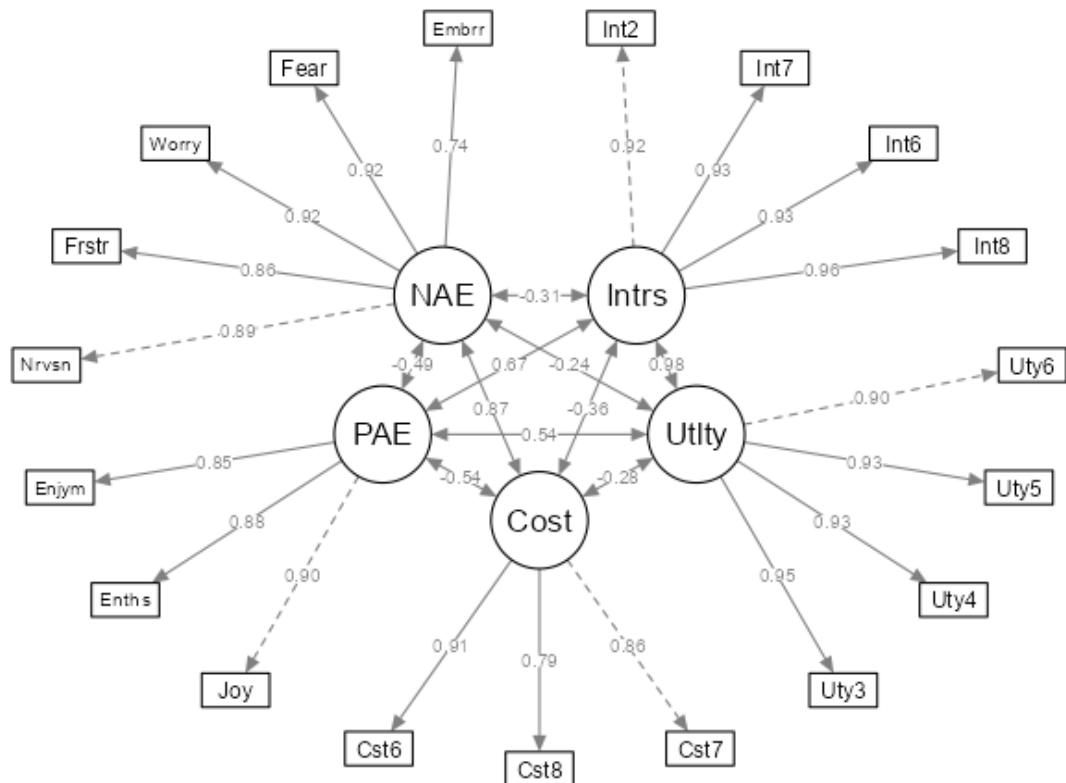
Supplementary Table S6. Item-level Rasch diagnostics for the pilot-derived 15-item English proficiency criterion in the main sample.

Original item number	Final item code	Proportion correct	Difficulty estimate	SE	Infit	Outfit
1	Q1	.640	-0.720	.462	.958	.875
2	Q2	.920	-2.883	.769	1.012	.980
3	Q3	.840	-2.008	.584	.910	.629
4	Q4	.600	-0.511	.454	.983	1.011
5	Q5	.640	-0.720	.462	1.092	1.186
6	Q6	.640	-0.720	.462	.867	.779
8	Q7	.440	.293	.450	1.071	1.128
9	Q8	.400	.498	.455	.965	.941
10	Q9	.800	-1.693	.541	.936	.744
11	Q10	.360	.708	.463	.908	.860
13	Q11	.480	.093	.447	.933	.864
15	Q12	.600	-0.511	.454	.889	.853
16	Q13	.320	.928	.475	1.126	1.181
19	Q14	.360	.708	.463	1.024	1.108
20	Q15	.400	.498	.455	1.367	1.519

Note. Original item numbers refer to the initial 25-item pool. Final item codes refer to the pilot-derived 15-item English proficiency criterion used in the main sample. SE = standard error of the difficulty estimate. Infit = information-weighted mean-square fit statistic; Outfit = outlier-sensitive mean-square fit statistic. Most retained items showed acceptable fit in the main sample. Item 20 showed elevated infit and outfit values, but it was retained because the 15-item version had been fixed after pilot-stage screening and the measure was used only as a brief external criterion, not as a diagnostic proficiency assessment.



Supplementary Figure S2. Wright map for the pilot-derived 15-item English proficiency criterion in the main sample. The Wright map displays the distribution of participants' estimated English proficiency levels and the difficulty estimates of the 15 retained multiple-choice items in the main sample (N = 178). The left panel represents respondents' latent proficiency estimates, with higher positions indicating higher estimated proficiency. The right panel displays item locations, with higher positions indicating greater item difficulty. This figure is provided to illustrate the alignment between respondent proficiency and item difficulty for the final English proficiency criterion used as an external variable in the main analyses.



Supplementary Figure S3. Standardized factor loadings and latent correlations for the retained five-factor model. Values on the paths from latent variables to observed indicators represent standardized factor loadings. Values on the paths between latent variables represent standardized latent correlations. PAE = positive activating emotions; NAE = negative activating emotions.

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