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The Trajectory of English Foreign Learners' Emotions and Motivation from the Start to the End of their Learning Journey: A Pseudo-Longitudinal Investigation

RESEARCH

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ABSTRACT

The current study is based on a pseudo-longitudinal design to investigate the trajectory of Foreign Language Enjoyment (FLE), Foreign Language Peace of Mind (FLPOM), Foreign Language Classroom Anxiety (FLCA), Foreign Language Boredom (FLB) among a total of 502 Beginner, Intermediate and Advanced English Foreign Language (EFL) learners in Morocco who filled out a single online questionnaire. Statistical results showed that motivation remained unchanged across skill levels but that positive emotions increased significantly and negative emotions dropped significantly, with the transition from Beginner to Intermediate skill levels showing the biggest change. The direction of relationships between the dependent variables remained similar although their strengths varied slightly across skill levels, reflecting the dynamic nature of FL learners' emotions and motivation.

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1. INTRODUCTION

The realisation that foreign language (FL) learner emotions affect learners' performance and progress is slowly permeating the field of applied linguistics and second language acquisition (Dewaele, 2022a; Dewaele et al., 2019; MacIntyre et al., 2019). During the initial period that started with the publication of Dewaele and MacIntyre (2014), researchers identified the learner-internal and learner-external sources of variation in FL Enjoyment (FLE) – defined as "a complex emotion, capturing interacting dimensions of challenge and perceived ability" (Dewaele & MacIntyre, 2016, pp. 216–617) and FL Classroom Anxiety (FLCA) – described by Horwitz et al. (1986) as FL learners' tendency to be anxious in the specific situation of FL learning because of the ego-threatening nature of using the FL. Dewaele and MacIntyre (2014) focused on the relationship between FLE and FLCA and the sources of variation. It was a mixed-methods study based on data from 1746 FL learners from all over the world, collected through an online questionnaire. One of the striking findings was that increased skill level was linked to significantly higher self-reported levels of FLE and lower levels of FLCA. The relationship turned out to be non-linear. The difference in FLE and FLCA was minimal between the lower-intermediate and intermediate groups but the difference became much larger at high-intermediate and advanced levels, with increased FLE and reduced FLCA.

A second important finding was the existence of significant cultural group differences: North American FL learners reported the highest levels of FLE and the lowest levels of FLCA, in contrast with Asian FL learners who reported the lowest levels of FLE and the highest levels of FLCA. Arab and European FL learners had values between these two extremes. The authors concluded that the geographical/educational context shapes FL learner emotions and that it is crucial to include data collected outside a Western, Educated, Industrialized, Rich, and Democratic (WEIRD) context to avoid sample bias (Henrich et al., 2010).

A large majority of studies on FL learner emotions are based on cross-sectional designs (Dewaele, 2022a). While they are fine to explore synchronic variation in datasets, they only provide snapshots of dynamic learner systems (Dewaele & Li, 2020). Longitudinal research designs are the gold standard in applied linguistics as they allow researchers to observe diachronic variation and to gain a better understanding of causality. Yet, longitudinal designs have many drawbacks. It is hard to obtain data from the same participants over long periods and the inevitable attrition in participant numbers decreases the potential for meaningful statistical analyses. Most longitudinal studies on learner emotions cover one semester (Dewaele, Saito et al., 2023; Elahi Shirvan et al., 2018, 2020), with some just covering a small number of classes (Guedat-Bittighoffer & Dewaele, to appear). It is therefore practically impossible to design a longitudinal study where a sufficiently large cohort of participants would be followed from their first FL class to their very final one, which would typically cover a period of about 6 years. The only practical alternative is the pseudo-longitudinal design where "samples of learner language are collected from groups of learners of different proficiency levels at a single point in time. A longitudinal picture can then be constructed by comparing the devices used by the different groups according to their proficiency" (Ellis & Barkhuizen, 2005, p. 97).

We thus decided to collect data on FL learner emotions and motivation from a large sample of English as a Foreign Language (EFL) learners in Morocco and after running some preliminary statistical analyses on the whole corpus (including the relations between the dependent variables and the effect of skill level on the various emotions and motivation), we ran separate analyses on the data from the Beginners, the Intermediate and the Advanced learners. The sample is relatively homogeneous in terms of linguistic profiles. Also, having been through the same education system, they learned English in largely similar ways. In other words, we can assume that Advanced learners reflect the end of the typical EFL journey in Morocco, while Beginners reflect the start. A comparison of Beginners, Intermediate and Advanced learners can thus provide us with a trajectory over time, and it can allow us to capture diachronic variation in learners' emotions and motivation.

2. LITERATURE REVIEW

2.1 RESEARCH ON LEARNER EMOTIONS IN WEIRD AND NON-WEIRD CONTEXTS

Henrich et al. (2010) pointed out that social scientists are often not aware of the sample bias in their research. They make broad claims about human psychology and behaviour based on data collected from participants from WEIRD societies, which "are among the least representative

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populations one could find for generalizing about humans" (p. 2). The field of FL learning emotions has largely avoided the WEIRD bias because its researchers operate in different parts of the world, including non-WEIRD societies, and collected data across continental borders. Dewaele and MacIntyre (2014) was the first study to consider FLE and FLCA using a sample of 1742 FL learners from all over the world, but a large majority (85%) came from WEIRD countries. The surge in interest in learner emotions in China meant that data were collected from several thousands of Chinese EFL learners in the late 2010s, which compensated the initial bias (Li et al., 2022, 2023). Studies in Kazakhstan and Iran also added a welcome non-WEIRD pool of FL learners (Dewaele, Özdemir et al., 2022; Elahi Shirvan & Talebzadeh, 2018; Kruk et al., 2022).

2.2 THE MEASUREMENT OF LEARNER EMOTIONS

The boost in research in learner emotions is undoubtedly linked to the development of solid instruments to measure various emotions, allowing replication studies, translations and adaptations of the original instruments. MacIntyre (2017) argued that the publication of the psychometrically validated FLCAS by Horwitz et al. (1986) marked the end of the chaotic "Confounded period" in FL anxiety research and heralded the "Specialized approach". The original FLCA Scale contains 33 items that capture a FL learner's tendency (trait) to feel anxious (state) when using or learning a FL. It focuses on both psychological and physiological symptoms of anxiety, including sweating and increased heart rate. An 8-item version of the scale was psychometrically validated in Botes, van der Westhuizen et al. (2022). FLCA was found to be unidimensional. FLCA can be described as a negative, medium to high-arousal emotion.

The FLE scale contained 21 items with 5-point Likert scale ratings reflecting positive emotions towards the FL learning experience, towards peers and teacher (Dewaele & MacIntyre, 2014). The authors collected quantitative and qualitative data simultaneously and carried out separate analyses before combining the findings of both types of data. In a follow-up study on the same dataset, Dewaele and MacIntyre (2016) investigated the factor structure of the FLE and FLCA items in more detail. The eight FLCA items loaded on a first dimension, the 21 FLE items loaded on a second dimension that reflected the social dimension of enjoyment and a third one that reflected the private dimension of enjoyment.

Botes et al. (2021) used the database on which Dewaele and MacIntyre (2014) was based to investigate the factor structure in more detail with the aim of constructing a Short Foreign Language Enjoyment Scale. A principal components analysis revealed a 3-factor hierarchical model, with a higher-order FLE factor. The first dimension reflected FL learners' appreciation of their FL teacher. The second dimension showed their personal enjoyment in the FL class; and the third factor reflected their social enjoyment, namely good relations with peers. FLE is a positively valenced medium to high-arousal emotion.

FL Learning Boredom (FLLB) has only recently emerged in SLA research (Li, 2021). FLLB induces sleepiness among students and hence reduces both their FL input and output, negatively affecting their performance and progress. Li et al. (2023) defined FLLB as a learner's emotion characterised by a combination of negative valence and extremely low arousal when engaging in under-challenging or over-challenging activities. They collected data from 808 Chinese EFL students in a pilot study and a further 2223 Chinese EFL students in the main study which allowed them to describe the factor structure of FLLB. The authors developed a 32-item scale with seven factors. The first factor (8 items), FLB, has been used independently. Li's (2021) mixed-methods study found that FLB is more prevalent among learners who report a lack of both control and value. In other words, learners who did not feel very competent, disliked their FL classes and failed to perceive their intrinsic value, were more likely to be bored. These findings were confirmed in studies on Polish EFL learners (Kruk et al., 2021; Pawlak et al., 2022).

Zhou et al. (2021) introduced the emotion Foreign Language Peace of Mind (FLPOM) 外语平和心态 (waiyu pinghe xintai), which they drew from the Chinese cultural context. It refers to a state of peacefulness and harmony (Lee et al., 2013) and can be seen as "an indicator of psychological well-being in collectivist cultures" (p. 8). Zhou et al. (2021) collected data from 158 Chinese EFL students in a pilot study and a further 441 Chinese EFL students in the main study to develop and validate the 8-item FLPOM scale. Factor analysis revealed a single factor structure. FLPOM turned out to be a better predictor of self-perceived FL proficiency of 400 Chinese EFL learners than FLE. FLPOM and FLE were positively linked but they are arguably separate emotion constructs as FLPOM is a low-arousal emotion while FLE is a higher arousal emotion.

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Gardner's (1985) socio-educational model dominated the field of applied linguistics until the arrival of Dörnyei's (2009) L2 selves model. The socio-educational model was presented as "a dynamic causal interplay of individual difference variables interacting with environmental and acquisition contexts resulting in both linguistic and non-linguistic outcomes" (Gardner, 1985, p. 165). It includes four dimensions: integrativeness, attitudes towards the learning situation, language anxiety and language attitudes and motivation. The importance of the local and wider societal learning context makes the socio-educational model particularly useful for our study. Dörnyei (2019) underlined that Gardner's model is "still relevant" (p. xxi).

2.3 THE EFFECT OF SKILL LEVEL ON LEARNER EMOTIONS

The finding in Dewaele and MacIntyre (2014) that more advanced (and proficient) FL learners reported more FLE and less FLCA was confirmed in later studies (Jiang & Dewaele, 2019; Li et al., 2020). Botes et al. (2020) speculated that with increased skill comes increased self-confidence and an ability to project a more sophisticated and accurate sense of self. The more positive emotions may in turn push students to work harder and improve their skill further, creating a positive feedback loop. A similar pattern emerged in Dewaele and MacIntyre (2022) who reported that beginners spend less time in a state of flow during the FL class than more advanced FL learners. Flow experiences become more habitual, more intense, more social and longer in duration as FL learners' skill level increases, which could boost their positive emotions and control their negative ones.

2.4 RELATIONSHIPS BETWEEN LEARNER EMOTIONS

The first research question in Dewaele and MacIntyre (2014) was the relationship between FLE and FCLA. The significant negative correlation, representing a small effect size, allowed the authors to claim that FLE and FLCA are distinct emotions – a finding confirmed in the recent meta-analysis (Botes et al., 2022) where the average relationship for 46 effect sizes was a moderate $r = -.31$ (p. 214).

With the introduction of "new" learner emotions like FLB and FLPOM, researchers are establishing a growing "map" of relationships between FL learner emotions. Li and Han's (2022) study of the emotions of 348 Chinese EFL learners in online Chinese settings found FLE to be negatively correlated with both FLCA and FLB. FLCA and FLLB were positively correlated. A similar pattern emerged in Li (2022) who found a strong negative correlation between levels of FLE and FLLB among 868 EFL students in China. She speculated that while FLE and FLBB are opposites in terms of valence, they share an object focus on learning activities. Both are also strongly affected by attitudes toward the teacher.

Following the same avenue, Li and Wei (2022) examined to what extent FLE, FLCA, and FLB affected achievement of 954 junior EFL learners in China. The longitudinal study revealed that the three emotions at Time 1 predicted achievement at Time 2 but that FLE was the strongest predictor across time, with FLCA being a significant negative predictor at Times 2 and 3. The negative effect of FLB faded completely by Time 3.

Dewaele et al. (to appear) used the same database of 502 Moroccan EFL learners as the one on which the present paper is based, to establish which learner emotions (FLE, FLCA and FLB) were the best predictors of EFL achievement. Latent dominance analysis showed that FLCA had the strongest (negative) effect on EFL achievement, followed by FLB, and that FLE had a significant -but weaker- positive effect.

Dewaele, Albakistani et al. (2022) collected data from 168 Arab and Kurdish EFL learners and found a significant positive correlation between FLCA and FLB, and significant negative relationships between FLE and both FLCA and FLB. In other words, anxious learners also tend to be bored, and bored students are unlikely to enjoy their FL classes. FLCA in in-person classes was the strongest negative predictor of English academic achievement but FLE and FLB had no effect.

Adopting a Structural Equation Modelling (SEM) approach, Dewaele, Botes et al. (2022) used an international sample of 332 learners to investigate the relationship between FLE, FLCA, and FLB. The authors found a close-fitting SEM in which higher levels of FLE were correlated with significantly lower FLCA and FLB levels. A positive relationship emerged between FLCA and FLB.

Adding motivation in the picture, Dewaele and Proietti Ergün (2020) focused on relationships and differences in levels of FLE, FLCA and motivation in Italian FL and English FL classes of 110 Turkish pupils in an immersion school in Istanbul. Motivation was significantly positively correlated with FLE in Italian and English (large effect sizes), and negatively correlated with FLCA in Italian and English (medium effect sizes). FLE and FLCA were negatively correlated in Italian and English (small-to-medium effect sizes).

Similar patterns emerged in Zhang et al. (2020) who found significant positive correlations between FLE and both instrumental motivation and integrative motivation in a group of 598 Chinese EFL university students. Finally, using Dörnyei's model of L2 self, Papi and Khajavy (2021) investigated, among others, the relationships between motivation, FLE, FLCA and FL performance among 324 Iranian EFL university learners. Ideal self was a positive predictor of FLE and a negative predictor of FLCA. Ought-other and ideal-other were positive predictors of FLCA.

2.5 LONGITUDINAL DESIGNS IN FL LEARNER EMOTIONS RESEARCH

Researchers have considered fluctuations in learner emotions and motivation on various timescales, ranging from seconds, minutes to days, weeks and months (Boudreau et al., 2018; Dewaele, Saito et al., 2023; Elahi Shirvan & Talebzadeh, 2018; Guedat-Bittighofer & Dewaele, to appear; Pawlak et al., 2022). Both Boudreau et al. (2018) who looked at second-by-second fluctuation in FLE and FLCA among ten Anglo-Canadian leaners of French during a 2-minute task, and Pawlak et al. (2022) who analysed minute-by-minute fluctuation in FLB of eleven Polish EFL learners during a 75-minute class, found huge interindividual variation. Pawlak et al. (2022) concluded that variation at group-level obscures individual trajectories of FLB which are affected by a wide range of individual and contextual factors.

Adopting a slightly longer timeframe, Dewaele, Saito et al. (2023) looked at variation in FLE, FLCA and motivation over the course of one semester among 360 FL learners of English, German, French and Spanish in a Kuwaiti university. Little variation was found for FLCA and FLE (including the dimensions FLE Personal and FLE Social) but values for the dimension FLE Teacher and motivation dropped significantly (specifically the dimensions Motivation and Attitudes toward the Learning Situation), which the authors attribute to possible disenchantment with the teacher and the course, possibly because of disappointing test results and a realisation that progress in the FL requires constant effort.

Using a similar timeframe, Elahi Shirvan and Taherian (2021) found that 367 Iranian EFL students' levels of FLE increased significantly while their level of FLCA decreased significantly towards the end of the semester. Adopting a different method, Elahi Shirvan, Taherian et al. (2021) used a longitudinal confirmatory factor analysis-curve of factors model to investigate fluctuations in FLE of 437 Iranian EFL students between the onset and the end of the course (four data collections with two-week intervals). The authors found a general increase in FLE over time with interesting individual differences: students who scored highest on FLE at the start of the course experienced less change in FLE over time while those with lower initial levels of FLE increased more by the end of the course. Finally, Elahi Shirvan, Yazdanmehr et al. (2021) used longitudinal confirmatory factor analysis-curve of factors model to investigate change in levels of boredom among 412 Iranian EFL learners enrolled in an online course during the COVID pandemic. They found that levels of boredom tended to decrease between the onset and the end of the course. The sharpest drop in boredom happened to students with higher levels of boredom at the onset. Combining multiple timeframes, Elahi Shirvan, Taherian et al. (2020) used the ecological momentary assessment method with two Iranian EFL students, collecting data on their FLE through monthly open-ended interviews, weekly reports in journals, enjoymeters[1] across minutes, and variation across seconds. The authors found that FLE fluctuated at different rates over different periods. The two participants exhibited similar patterns of FLE under influence of the same ecological factors but reacted in their unique ways: one participant's FLE was more linked to social factors whereas fluctuation in the other learner depended more on her personal FLE.

Finally, Pan and Zhang (2021) investigated the relationships between motivation, personality and fluctuations in FLE and FLCA of 55 Chinese EFL learners over a 14-week period. They found a gradual drop in FLCA and a gradual increase in FLE (with a lot of small ups and downs and a

1 A sheet of paper with « thermometer-shaped figures that ranged from 0, indicating the lowest enjoyment and 10 indicating the highest enjoyment points" (Elahi Shirvan et al., 2021, p. 5).

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lot of inter-individual variation). FLE was significantly positively correlated with "Ideal L2 Self, Ought-to L2 Self, Family Influences, English Learning Attitudes, Cultural Interest, and Linguistic Self-confidence" (p. 12). FLCA was only negatively correlated with Criterion Measure and Ought-to L2 Self. Students who invested most energy in their FL learning were found to experience greater fluctuations in FLE and FLCA.

2.6 PSEUDO-LONGITUDINAL DESIGNS IN FL LEARNER EMOTIONS RESEARCH

The first study to adopt a pseudo-longitudinal design to look at fluctuation of learner emotions was Dewaele and Dewaele (2017). The aim was to establish the effect of age group on levels of FLE and FLCA among 189 British FL pupils in two London schools. The three age groups (12–13 year olds, 14–15 year olds and 16–18 year olds) showed similar levels of FLCA but levels of FLE differed significantly, with relatively high levels of FLE in the youngest age group, dropping for the middle age group, and increasing to its highest level for the oldest age group. The predictors of FLE and FLCA changed over time with FLE being increasingly linked to the teacher and FLCA being increasingly linked to the peers. Interestingly, the relationship between FLE and FLCA differed in the three groups.

Li et al. (2020) also adopted a pseudo-longitudinal design to investigate variation in emotions according to achievement group (though they did not use the word "pseudo-longitudinal"). They collected data from 1307 EFL Chinese students and used average English test scores to create a low achievement group (more than 1 standard deviation below the mean), a middle group (from – 1 SD to +1 SD above the mean-, and a high achievement group (higher than +1 SD above the mean). They found that the high achievement group had the highest levels of FLE and the lowest levels of FLCA. The relationship between FLE and test scores was found to be strong in the high-achievement group and non-significant in the low-achievement group.

Dewaele (2022b) followed a similar avenue in comparing the emotional, sociobiographical and contextual variables that predicted exam results of 275 secondary school FL pupils and 317 university learners of Turkish in Kazakhstan. Levels of FLCA of secondary school FL pupils were non-significantly different from those of university learners but levels of FLE were significantly higher among university learners. FLCA was the only significant (negative) predictor of exam results among the secondary school pupils whereas both FLE and FLCA were significant predictors of the university students' results. One possible explanation for this finding is that the university learners, just like the oldest age group in Dewaele and Dewaele (2017), had consciously decided to attain an advanced level in the FL and that this explained their increased emotional involvement and motivation.

Summing up, the literature review showed that learner emotions and motivation fluctuate to a greater or lesser extent, depending on the timeframe and the degree of granularity in the observation. No research so far has measured the effect of skill level (Beginner, Intermediate, Advanced) on learner emotions and motivation and investigated whether their relationships evolve over what would be a period of around six years. To do so, we will use a pseudo-longitudinal design (Ellis & Barkhuizen, 2005).

The following research questions will therefore be explored:

1. How do levels of FLE, FLPOM, FLCA, FLB and motivation change from Beginner to Advanced learners?
2. How do the relationships between FLE, FLPOM, FLCA, FLB and motivation change from Beginner to Advanced learners?

3. METHOD

3.1 PARTICIPANTS

Participants were 502 Moroccan EFL learners from various secondary schools, universities and language centres based in Morocco. The average age was 22.4 years, with 228 male (45.9%) and 269 female participants (54.1%).[2] Participants could choose an English or an Arabic version of the questionnaire. The second author translated the questionnaire from English into Arabic and discussed the translation with a fellow English/Arabic teacher.

2 Five participants did not disclose their gender.

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All participants were multilingual, reflecting the multilingualism in the Moroccan population (Ennaji, 2005). Participants consisted of 83 bilinguals, 258 trilinguals, 134 quadrilinguals, 19 pentalinguals and 8 participants indicated six or more languages in their repertoire. Besides English and Arabic, participants listed French (n = 415), Amazigh (n = 146), Spanish (n = 39), Turkish (n = 14), and German (n = 12).

3.2 ENGLISH IN THE MOROCCAN EDUCATION SYSTEM

Foreign language education is compulsory in Moroccan public high schools (English, Spanish or German depending on the region). English is introduced in middle school around the age of 13 (2 hours a week) and it is taught for another three years in high school (3, 4 or 5 hours a week depending on the stream). English is also a popular course at university. The EFL curriculum in public secondary schools is based on a standards-based approach (Ministry of National Education, 2007). The focus is on teaching key competencies and the four skills so learners develop communicative competence. Private schools follow their own EFL curricula.

3.3 INSTRUMENTS

The first section of the questionnaire concerned participants' sociobiographical and linguistic profile background and their latest English major test results. It contained one item about their general English language proficiency (ranging from Beginner to Advanced), which is the independent variable in the present study. A group of 85 participants (16.9%) reported being Beginners, 322 participants (64.2%) identified as Intermediate learners, and 95 participants (18.9%) identified as Advanced learners. The second section of the questionnaire focused on four FL classroom emotions: FLE, FLPOM, FLCA, FLB and motivation.

Short-Form Foreign Language Enjoyment Scale (α = .925). The multidimensional nine-item scale was developed by Botes et al. (2021). It provides a score for the higher-order factor of FLE and for three lower-order factors, namely Personal Enjoyment (3 items, e.g. "I enjoy my English class"), Social Enjoyment (3 items, e.g. "There is a good atmosphere in my English classroom"), and Teacher Appreciation (3 items, e.g. "My teacher is supportive"). Items were measured on a five-point Likert scale from "strongly disagree" to "strongly agree".

Foreign Language Peace of Mind Scale (α = .94). FLPOM was measured with the eight-item scale developed in Zhou et al. (2021). Items included "My mind is free and at ease in the English class" and "I have an inner sense of tranquility and harmony in the English class". Items were measured on a five-point Likert scale from "strongly disagree" to "strongly agree".

Short-form Foreign Language Classroom Anxiety Scale (α = .81). The unidimensional eight-item measure is a shortened form of the original 33-item Foreign Language Classroom Anxiety Scale designed by Horwitz et al. (1986), shortened in Dewaele and MacIntyre (2014) and recently validated by Botes, van der Westhuizen et al. (2022). Items included "It embarrasses me to volunteer answers" and "Even if I am well prepared for English, I feel anxious about it". Items were measured on a five-point Likert scale from "strongly disagree" to "strongly agree".

Foreign Language Boredom Scale (α = .95). FLB was measured through the 8-item unidimensional scale measuring boredom in the EFL classroom. The measure is a subscale of the broader FLLB Scale (Li et al., 2023), with the subscale specifically examining boredom within the EFL classroom and as such is equivalent in context to the scales used to measure FLA and FLE. Items included were "It is difficult for me to concentrate in the FL class" and "My mind begins to wander in the FL class". Items were measured on five-point Likert scale from "strongly disagree" to "strongly agree".

Mini-Attitudes/Motivation Test Battery (AMTB) (α = .68). Attitudes/Motivation (in short: "motivation") was measured with the slightly adapted (for the EFL context) 12-item scale developed by Tennant and Gardner (2004). Items include: "My attitude toward English-speaking people is…", "My motivation to learn English for practical purposes (e.g., to get a good job) is…", "My desire to learn English really well is…": Items were measured on a 7-point Likert scales (later re-calculated for a 5-point scale), with anchors including 'weak to strong', 'unfavourable' to 'favourable', 'very low/little' to 'very much/high'.

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3.4 DATA COLLECTION

Ethical approval for this study was obtained from the ethics committee at the authors' research institution. A snowball sampling strategy was adopted. A call for participation was issued on professional networks and social media (LinkedIn, Facebook, Instagram). Personal contacts were used to reach a wide range of Moroccan EFL teachers and learners across Morocco. The questionnaire was posted online using Google Forms and was accessible in June 2022 – when all students had reverted to in-person classes after the COVID pandemic. Participants' individual consent was obtained at the start of the survey, and no names of students, teachers or schools were collected. The anonymity of participants, their rights, and the confidentiality of their information were explained and guaranteed at the start of the questionnaire. Participants were encouraged to forward the link to their peers.

3.5 DATA ANALYSIS

The calculation of the Q-Q (quantile-quantile) showed plots for the four emotions and motivation that follow a normal distribution reasonably well (available from the authors on request). Skewness values range from .49 to –1.40 which falls within the range for data to be considered normally distributed, namely –2.0 to 2.0 (Byrne, 2010). Kurtosis values range from –.01 to 5.88 which also falls within the range for data to be considered normally distributed, namely –7.0 to 7.0 (Byrne, 2010) (see Table 1). A decision was thus made to use parametric statistics, and more specifically ANOVAs, which allow post hoc tests, using SPSS 28.0.

Table 1 Descriptive statistics of the dependent variables (*N* = 502).

VARIABLE	*MEAN*	*SD*	*MIN*	MAX	SKEWNESS	KURTOSIS
FLE	3.92	.85	1	5	–1.34	2.0
FLPOM	3.79	.87	1	5	–.93	.78
FLCA	2.55	.80	1	5	.49	–.01
FLB	1.90	.84	1	5	1.11	1.16
Motivation	4.13	.48	1	5	–1.40	5.88

A Pearson correlation analysis showed positive relationships between FLE, FLPOM, and Motivation. Negative relationships emerged between these two positive emotions and motivation and the two negative emotions (see Table 2). Although the correlation between FLE and FLPOM is high, it remains below the threshold of .70 for collinearity. In other words, they do not represent the same construct (Dormann et al., 2013, p. 32). The other correlation values are much lower.

Table 2 Pearson correlation matrix of the dependent variables.

** p < .01 (2-tailed).

	FLE	FLPOM	FLCA	FLB
FLPOM	.679**			
FLCA	–.207**	–.323**		
FLB	–.348**	–.499**	.394**	
Motivation	.206**	.216**	.058	–.188**

3.6 COMPOSITION OF THE GROUPS OF BEGINNERS, INTERMEDIATE AND ADVANCED LEARNERS

A series of one-way ANOVAs revealed that the three groups differ on a number of background variables. As could be expected, Advanced learners are older, more multilingual, reported having a higher relative standing in their FL class and reported higher results on the latest test (see Table 3). This makes sense as only the best students would pursue the study of English to an Advanced level and weaker students would drop out. An additional Pearson Chi^2 test showed that the gender distribution was similar across the three skill levels ($Chi^2 = 5.34$, $p = .25$).

DEPENDENT VARIABLE	BEGINNERS (*n* = 85)		INTERMEDIATE (*n* = 322)		ADVANCED (*n* = 95)		*F*	*p*
	MEAN (SD)	RANGE	MEAN (SD)	RANGE	MEAN (SD)	RANGE		
Age	20.8 (5.6)	14–41	21.6 (6.2)	15–50	26.4 (9.4)	16–60	19.53	<.001
Number languages	2.6 (0.86)	2–5	3.1 (.77)	2–5	3.6 (.85)	2- 5	29.13	<.001
Relative standing	2.9 (1)	1–5	3.8 (.70)	2–5	4.5 (.65)	2–5	103.52	<.001
Latest test result	63.4 (19.1)	10–100	76.8 (14.4)	40–100	82.8 (13.3)	50–100	39.27	<.001

Table 3 Mean scores, Standard deviations and range in the background variables of the Beginning, Intermediate and Advanced learners (One-way ANOVAs).

4. RESULTS

The first research question focused on potential change in levels of FLE, FLPOM, FLCA, FLB and motivation as learners progress in their FL learning journey. A series of one-way ANOVAs revealed that there was significant change for the four learner emotions but not for motivation (see Table 4). The partial eta^2 values represent a very small effect size (Plonsky & Ghanbar, 2018). Beginners reported the highest levels of negative emotions and the lowest levels of positive emotions (Figure 1).

VARIABLE	*Df*	*F*	*p*	PARTIAL *Eta*^{2}
FLE	2, 499	10.31	<.001	0.041
FLPOM	2, 499	18.326	<.001	0.068
FLCA	2, 499	20.932	<.001	0.077
FLB	2, 499	7.54	<.001	0.029
Motivation	2, 499	0.377	0.686	0.002

Table 4 The effect of skill level on FLE, FLPOM, FLCA, FLB and motivation (one-way ANOVAs).

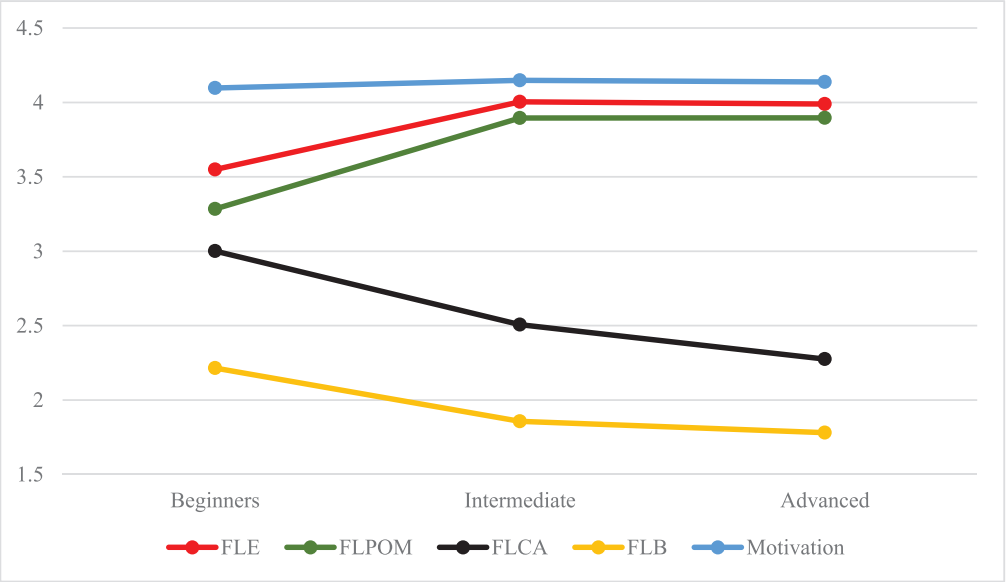

Figure 1 Mean levels of FLE, FLPOM, FLCA, FLB and motivation according to skill level.

Scheffé post hoc analyses revealed that differences between Beginners and both Intermediate and Advanced learners were significant for all four emotions (see Table 5). However, only FLCA was significantly different between Intermediate and Advanced learners. In other words, the effect of skill level faded between Intermediate and Advanced learners.

To answer the second research question on change in the relationships between the four emotions and motivation, we ran separate Pearson correlation analyses between FLE, FLPOM, FLCA, FLB and motivation in the datasets of the Beginner, Intermediate and Advanced learners (see Table 6).

VARIABLE	GROUP	GROUP	MEAN DIFFERENCE	ST ERROR	*p*
FLE	Beginners	Intermediate	–.4555	0.10208	<.001
	Beginners	Advanced	–.4405	0.12499	0.002
	Intermediate	Advanced	0.015	0.09774	0.988
FLPOM	Beginners	Intermediate	–.6114	0.10351	<.001
	Beginners	Advanced	–.6122	0.12673	<.001
	Intermediate	Advanced	–0.000	0.0991	1
FLCA	Beginners	Intermediate	.4953	0.09446	<.001
	Beginners	Advanced	.7265	0.11565	<.001
	Intermediate	Advanced	.2312	0.09044	0.039
FLB	Beginners	Intermediate	.3576	0.10111	0.002
	Beginners	Advanced	.4344	0.12379	0.002
	Intermediate	Advanced	0.076	0.0968	0.73

Table 5 Post hoc analyses for differences between skill levels for FLE, FLPOM, FLCA, FLB and motivation (Scheffé).

Beginners (*n* = 85)	FLE	FLPOM	FLCA	FLB
FLPOM	.694**	1		
FLCA	0.008	–0.17	1	
FLB	–.264*	–.353**	.529**	1
Motivation	.286**	.434**	0.026	–.231*
Intermediates (*n* = 322)				
FLPOM	.617**	1		
FLCA	–.230**	–.342**	1	
FLB	–.390**	–.598**	.351**	1
Motivation	.133*	.141*	0.091	–.180**
Advanced (*n* = 95)				
FLPOM	.745**	1		
FLCA	–0.181	–.213*	1	
FLB	–.215*	–.312**	0.184	1
Motivation	.280**	0.136	0.063	–0.141

Table 6 Pearson correlation analyses between FLE, FLPOM, FLCA, FLB and motivation per skill level (Pearson *r*).

*p < .05 (2-tailed) ** p < .001 (2-tailed).

A first observation is that the two positive emotions and motivation are positively correlated with each other. The two negative emotions are also positively correlated with each other and -more weakly- negatively correlated with motivation. The strongest correlation among Beginners exists between FLPOM and FLE. The next strongest correlation among Beginners exists between FLCA and FLB.

The strongest correlation among Beginners exists between FLPOM and FLE. The next strongest correlation among Beginners is a positive one between FLCA and FLB. Striking is also the fact that no significant relationship exists between FLE and FLCA.

The relationship between FLPOM and FLE remains the strongest among Intermediate learners. The next strongest correlation among Intermediate learners is between FLPOM and FLB. The positive correlation between FLCA and FLB is also significant. A significant negative relationship does emerge between FLE and FLCA.

The strongest correlation among Advanced learners is again between FLPOM and FLE. The negative relationship between FLPOM and FLB is also significant. The positive correlation between FLCA and FLB is still significant but weaker. Also, the negative relationship between FLE and FLCA does not reach significance.

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5. DISCUSSION

The aim of the present paper was to establish the trajectory of Moroccan EFL learners' FLE, FLPOM, FLCA, FLB and motivation from the start to the end of their learning journey using a pseudo-longitudinal design. Statistical analyses showed significant change for the four emotions (albeit with a very small effect size) but no change in motivation levels. Levels of the two positive emotions increased gradually – reaching a peak among Advanced learners- while the levels of the two negative emotions decreased in mirror fashion – starting at a high level among Beginners before reaching the lowest level among Advanced learners. FL learner emotions thus fluctuate over the long-term (Dewaele & Dewaele, 2017) and not just the medium term (Elahi Shirvan & Taherian, 2021; Elahi Shirvan, Taherian et al., 2021; Elahi Shirvan, Yazdanmehr et al., 2021; Pan & Zhang, 2021) or the short term (Guedat-Bittighofer & Dewaele, to appear). Our study shows that with increased skill comes increased enjoyment and better maintenance of inner harmony (Peace of Mind). The increased skill is also linked to lower FLCA resulting from increased self-confidence and an ability to function despite anxiety (Botes et al., 2020; Li et al., 2020). Increased skill means there is less risk of getting bored when the challenge is either overwhelming or underwhelming (Li, 2021). It is likely that Advanced learners can focus on some specific interesting aspects of a task that might have left them bored as Intermediate or Beginner learners. They will have developed strategies to deal with over- or under-challenging tasks, warding off negative emotions and boosting positive ones. They may also spontaneously switch to an alternative task that offers an appropriate amount of challenge.

The second research question focused on the relationships between the dependent variables. FLE and FLPOM showed the strongest (positive) correlation (as was the case in Zhou et al., 2021), and this relationship was similar across the three skill levels. This suggests that despite their distinctness, these two emotions share a similar nature, namely positive valence, combined with varying levels of arousal. It is possible that FLOM is a requisite for FLE to emerge. Learners with low FLPOM are more likely to be distracted and unfocused when performing a task. FLE implies intellectual stimulation and a profound satisfaction arising from the realisation of being in the right place, with the right people doing something challenging and rewarding (Dewaele & MacIntyre, 2016, 2022). The negative relationships between FLPOM, FLE and FLB shows that bored students are unlikely to reach a high enough level of valence and arousal which allows them to pick the rewards of the effort in mastering the FL. The negative relationship between FLE and FLCA confirms earlier research (Botes et al., 2022; Dewaele, Botes et al., 2022; Elahi Shirvan & Taherian, 2021) and suggests that FLCA -like FLB- acts as a dampener. The finding that FLB and FLCA co-occur among Beginners and Intermediate learners confirms previous research (Dewaele, Albakistani et al., 2022; Dewaele, Botes et al., 2022; Li, 2022; Li & Han, 2022). Anxiety tends to freeze learners, leading to instant disengagement from classroom activities and boredom. One of the most original findings in the present study is that Advanced learners manage to weaken the relationship between FLCA and FLB. They may have learned to control their FLCA better, so that it does not stop them from participation, and -as a consequence- they do not get bored doing nothing. The finding of a positive relationship between motivation and positive emotions also confirms previous research (Dewaele & Proietti-Ergün, 2020; Dewaele, Saito et al., 2023; Zhang et al., 2020). The relationship between motivation and negative emotions is weaker, as was the case in previous research (MacIntyre et al., 2020).

Another original finding was that the relationship between FLPOM, FLCA, FLB and motivation weakened over time, while the relationship with FLE strengthened. This suggests that Advanced learners' motivation was less affected by occasional pangs of anxiety and boredom, and that a sufficiently high level of FLPOM and FLE protected their motivation. Dewaele, Saito et al. (2023) argued that FLE becomes almost trait-like in stability and can sustain motivation when it occasionally drops because of disappointments about the FL class. Both are independent psychological constructs that drive the learner forward in the quest to improvement of FL skills.

The non-linearity in the development of the negative relationship between FLPOM and FLB at different skill levels is another illustration of the dynamic nature of the strengths of relationships between FL emotions. It is possible that Beginners become slowly aware that a lack of FLPOM increases their FLB. Intermediate learners may have become fully aware of the importance of FLPOM to ward off FLB. With both higher levels of FLPOM and lower levels of FLB, the relationship between both variables weaken among Advanced learners. With FLPOM having largely neutralised FLB, Advanced learners can shift their attention elsewhere, namely on the emotions that will carry them to the rapidly approaching destination of their FL journey.

The present study is not without limitations. A pseudo-longitudinal design allowed us to use cross-sectional data to reflect change in a dynamic system but it is not comparable to a proper longitudinal design where the same learners would be followed through-out their EFL journey. As this is totally unpractical, the present design offered us the best alternative to capture change over time and skill level. A related limitation linked to the nature of pseudo-longitudinal design is that the possibility that the patterns observed in Figure 1 might be partly due to the composition of the three groups changing over time cannot be excluded (cf. Table 3). The Advanced group was older, more multilingual, reported a higher relative standing in the group and better test results. In other words, Beginners with low levels of positive emotions and high levels of negative emotions may abandon the study of English and never progress to higher skill levels. The increased value in positive emotions and the reduction in negative emotions at Intermediate and Advanced level would then not be the consequence of an actual increase among the individual enthusiastic learners, but rather the result of the disappearance of the learners who gave up the study of English and who dragged the averages down. The only evidence against this interpretation is the fact that levels of motivation remain uniformly very high across the three skill levels. Advancing skill, coupled with high motivation, might thus be linked with a boost in positive emotions and a drop in negative ones.

Further research could investigate whether the sources of fluctuation in emotions vary across skill levels, as they did for age groups (Dewaele, 2022b; Dewaele & Dewaele, 2017) and for proficiency groups (Li et al., 2021). Future research could also explore whether the transition from Beginner to Intermediate is also linked to change in learner emotions in other WEIRD and non-WEIRD contexts. This would allow researchers to determine the effect of cultural and educational contexts. In-depth qualitative research could also shed light on the causes of this change. This might yield useful pedagogical implications as teachers could help Beginners attain an optimal emotional mix.

6. CONCLUSION

The aim of the current study was to see how levels of FLE, FLPOM, FLCA, FLB and motivation -as well as their interrelationships- changed between onset of acquisition of English (Beginners) and its conclusion (Advanced learners). The pseudo-longitudinal design allowed a visualisation of fluctuations that span a period of at least six years. The Moroccan EFL learners reported increasingly stronger positive emotions and weaker negative emotions as their skill level increased but their motivation level remained high and stable. The transition between Beginner and Intermediate levels marked the sharpest change in emotions. The direction of relationships between the dependent variables remained the same, although the strengths of the relationships fluctuated across skill levels, reflecting the dynamic nature of FL learners' emotions and motivation.

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