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PERCEPCIONES ESTUDIANTILES SOBRE EL AULA INVERTIDA MEDIADA POR TECNOLOGÍA EN EL APRENDIZAJE DEL INGLÉS COMO LENGUA EXTRANJERA EN EDUCACIÓN SUPERIOR

STUDENT PERCEPTIONS OF A TECHNOLOGY-MEDIATED FLIPPED CLASSROOM IN ENGLISH AS A FOREIGN LANGUAGE LEARNING IN HIGHER EDUCATION

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RESUMEN: En las carreras no lingüísticas de la educación superior ecuatoriana, el inglés suele cursarse como un requisito de titulación, lo que se traduce en escasa participación en clase y en niveles de motivación bajos. Frente a ese escenario, el aula invertida mediada por tecnología desplaza la exposición al contenido hacia el trabajo previo con recursos digitales y libera la hora presencial para la práctica interactiva. El presente trabajo analizó cómo valora el estudiantado una implementación de ese modelo en la asignatura de inglés. Se trabajó con un diseño cuantitativo, descriptivo y de corte transversal. Un cuestionario tipo Likert de 20 ítems fue respondido por 150 estudiantes de tres carreras de la Escuela Superior Politécnica de Chimborazo, Sede Morona Santiago: Ingeniería Ambiental (n=54), Zootecnia (n=51) y Contabilidad y Auditoría (n=45). Las dimensiones evaluadas fueron utilidad percibida, satisfacción, autonomía, motivación y preferencia frente al modelo tradicional, con una fiabilidad global de α=0,89. Todas se situaron en el rango favorable, entre 3,68 y 3,95 sobre 5. El puntaje más alto correspondió a la satisfacción (M=3,95; DE=0,84) y el más bajo a la autonomía (M=3,68; DE=0,97). Únicamente la utilidad percibida mostró diferencias significativas entre carreras (F=3,84; p=0,023). Los hallazgos indican que este alumnado acoge con buena disposición el aula invertida para aprender inglés, si bien la gestión autónoma del trabajo previo sigue siendo el aspecto que demanda mayor acompañamiento pedagógico.

Palabras clave: Aula invertida, actitud del estudiante, inglés (segunda lengua), enseñanza superior, tecnología educativa, aprendizaje mixto

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ABSTRACT: In non-linguistic programs within Ecuadorian higher education, English is usually taken as a graduation requirement, which tends to depress classroom participation and motivation. The technology-mediated flipped classroom responds to this by moving content exposure into pre-class work with digital resources and freeing face-to-face time for interactive practice. The present work analyzed how students assess such an implementation in their English course. A quantitative, descriptive, cross-sectional design was used. A 20-item Likert-type questionnaire was completed by 150 students from three programs at Escuela Superior Politécnica de Chimborazo, Sede Morona Santiago: Environmental Engineering (n=54), Animal Science (n=51), and Accounting and Auditing (n=45). The dimensions assessed were perceived usefulness, satisfaction, autonomy, motivation, and preference over traditional instruction, with an overall reliability of α=0.89. All of them fell within the favorable range, between 3.68 and 3.95 out of 5. Satisfaction scored highest (M=3.95; SD=0.84) and autonomy lowest (M=3.68; SD=0.97). Only perceived usefulness differed significantly across programs (F=3.84; p=0.023). The findings indicate that these students receive the flipped classroom favorably as a way of learning English, although the autonomous management of pre-class work remains the aspect requiring the most pedagogical support.

Keywords: Flipped classroom, student attitudes, English (second language), higher education, educational technology, blended learning

INTRODUCCIÓN

English as a foreign language (EFL) teaching in higher education remains a persistent pedagogical challenge in the Latin American context, where student demotivation, limited exposure to the language outside the classroom, and heterogeneous proficiency levels hinder the development of effective communicative competence (1,2). In non-linguistic university programs, students tend to perceive English as a mandatory academic requirement rather than a relevant tool for their professional development, which negatively affects their motivation and active participation (3, 4). In Ecuador, the Academic Regime Regulation (5) establishes English proficiency as a graduation requirement; however, implementation conditions vary substantially across institutions, particularly in university campuses located in regions far from major urban centers.

Bergmann and Sams (6) described the flipped classroom as an inversion of the usual sequence of instruction: what would normally be delivered in the lecture moves to digital materials studied beforehand, and the session itself is given over to practice, collaboration, and application. Research on the model has accumulated steadily over the past decade (7, 8, 9). Its underlying premise is that class time becomes available for the higher-order cognitive work that genuinely requires teacher mediation: solving problems, practicing communication, receiving individualized feedback, and working together (10). Designs of this kind frequently incorporate digital quiz and response tools to sustain engagement and support formative self-assessment (11).

From a theoretical standpoint, the effectiveness of the flipped classroom has been explained primarily through two conceptual frameworks. Self-Determination Theory (SDT), developed by Deci and Ryan (12), posits that motivation depends on the satisfaction of three basic psychological

needs: autonomy, competence, and relatedness. The flipped classroom, by allowing students to manage their content exposure at their own pace and by fostering interaction during class, has the potential to satisfy these needs (13). Additionally, the Technology Acceptance Model (TAM), developed by Davis (14), proposes that the adoption of an educational technology depends on perceived usefulness and perceived ease of use. In the context of the technology-mediated flipped classroom, these variables largely determine students' willingness to engage with pre-class materials (15).

Empirical evidence on the flipped classroom in English language teaching has grown considerably. The meta-analysis by Vitta and Al-Hoorie (16), based on 56 reports and 4,220 participants, reported a large overall effect in favor of the flipped model over traditional instruction in language teaching (g=0.99), which shrank to a moderate effect (g=0.58) once the Trim and Fill procedure was applied to adjust for publication bias. Systematic reviews by Arslan (17) and Hava (18) found that most EFL studies report positive student perceptions, although they noted the scarcity of studies in Latin American contexts. Tran and Verezub (19) and Pongpanich et al. (20) confirmed positive effects on academic achievement, motivation, and satisfaction, but cautioned about the heterogeneity of research designs and the need to investigate diverse contexts. Aguayo et al. (21) explored student perspectives at a Chilean university and found that students valued scheduling flexibility and increased in-class interaction, but expressed difficulties with autonomous management of pre-class preparation time.

In Ecuador, studies on the flipped classroom in English language teaching remain limited. González-Urgilés et al. (22) implemented the model at a university in Cuenca with positive outcomes in speaking skill development, and Cantuña and Cañar (23) conducted a systematic review that revealed the scarcity of empirical studies and the geographic concentration of research in universities in the central-northern Sierra region. No studies have been identified that analyze student perceptions of the technology-mediated flipped classroom in higher education institutions in the Ecuadorian Amazon region. There the graduation requirement applies in the same terms as elsewhere in the country (5), yet connectivity conditions, linguistic diversity, and student profiles make it a distinctive setting for a model that already places considerable demands on university teaching (24).

The objective of this study was to analyze student perceptions of the implementation of a technology-mediated flipped classroom in EFL learning in higher education. The specific objectives were: (a) to identify perceptions across five dimensions: perceived usefulness, satisfaction, autonomy, motivation, and preference over traditional instruction; (b) to compare perceptions among students from three non-linguistic university programs; and (c) to determine which dimensions of the flipped classroom are most and least favorably rated by students.

MATERIALES Y MÉTODOS

A quantitative, descriptive, cross-sectional design was employed (25), suitable for characterizing perceptions without variable manipulation.

The study took place at Escuela Superior Politécnica de Chimborazo (ESPOCH), Sede Morona Santiago, in the Ecuadorian Amazon region. The accessible population consisted of the students taking English I through English IV in three non-linguistic programs. To be included, a student had to be enrolled in one of those courses, to have followed the eight-week implementation, and to have given consent. Every student who met those conditions was invited, so the sample was non-probabilistic and of the convenience type. No one was paid, penalized, or identified for taking part, and anyone could decline. By program, the distribution was as follows: Environmental Engineering (n=54; 36.0%), Animal Science (n=51; 34.0%), and Accounting and Auditing (n=45; 30.0%). There were 82 men (54.7%) and 68 women (45.3%). The age range was 18 to 26 years, with a mean of 20.8 (SD=1.74).

Items were drafted from the Technology Acceptance Model (14) and Self-Determination Theory (12), together with dimensions reported in previous flipped classroom research in EFL settings (17,19,21). Content validity was examined through expert judgment: three specialists in foreign language didactics and educational technology rated every item independently on a four-point scale (1 = not relevant to 4 = highly relevant) for relevance, clarity, and coherence with the construct. For each item the I-CVI was obtained by dividing the number of experts who rated it 3 or 4 by the total number of experts; averaging those values across the instrument yielded the S-CVI/Ave. Because the panel comprised only three experts, the acceptance threshold was set at an I-CVI of 1.00, so that only items with full agreement were retained: no item was discarded, five were reworded, and the final version reached S-CVI/Ave = 1.00. A pilot with 30 students from the same programs, none of whom entered the final sample, served to check that the wording was clear and the administration time reasonable; two items needed small adjustments afterwards.

The implementation lasted eight consecutive weeks and followed a fixed weekly cycle. Before each face-to-face session the materials for that week were posted on Moodle: a short explanatory video on the week's grammar and vocabulary, recorded by the instructor and hosted on YouTube; an interactive reading or a Genially presentation reinforcing the same content; and a Moodle self-assessment questionnaire. Students worked through this package on their own and could return to it as often as they wished. The classroom session then opened with a brief check of that preparatory work and with clarification of whatever difficulties had recurred. What remained of the period went to communicative tasks, collaborative activities, and problem-solving exercises framed within the subject matter of each program, with individual feedback along the way; the instructor no longer delivered content but acted as a facilitator. Once the eight weeks were over, the questionnaire was administered in person during class time.

The academic authorities of ESPOCH Sede Morona Santiago authorized the study. Every participant signed an informed consent form and was told that neither refusing nor withdrawing would carry academic consequences, and the ethical principles governing research with human

participants were observed throughout. One circumstance deserves explicit mention: the instructor who taught the implementation was also the researcher. To limit the pressure this created, questionnaires were anonymous, were completed with the instructor out of the room and were deposited in a sealed box, and students were assured that their answers could not be traced back to them and would not affect their grades. Such precautions reduce social desirability bias without eliminating it, a point taken up again in the limitations.

The data were processed in SPSS version 27. Means, standard deviations, and frequency distributions were obtained for every dimension and every item. Differences between the three programs were examined with one-way ANOVA, after checking normality with Shapiro-Wilk and homogeneity of variance with Levene's test; Tukey's HSD was used for post hoc contrasts and eta squared as the effect-size index. Course level and age group were likewise contrasted with one-way ANOVA, and sex with independent-samples t-tests. Associations among dimensions were examined with Pearson's r. Significance was set at $p<0.05$ throughout. Only the comparison between programs, which corresponds to the second specific objective, was planned as confirmatory. The contrasts by course level, sex, and age group, together with the correlation matrix, are exploratory; since no correction for multiple testing was applied, the familywise error rate exceeds the nominal 0.05 and those results are best read as generating hypotheses rather than testing them.

RESULTADOS

Table 1 summarizes the structure of the questionnaire, and Table 2 presents the sociodemographic characteristics of the participants. The distribution by program was relatively balanced, with a slight predominance of Environmental Engineering (36.0%). Regarding the distribution by English course level, 38.0% were enrolled in English I, 28.7% in English II, 20.0% in English III, and 13.3% in English IV.

Table 1. Structure of the questionnaire by dimensión.

Dimension	Items	Sample item	α
Perceived usefulness	5	"The flipped classroom allows me to review the material as many times as I need before class"	0.87
Satisfaction	4	"I feel more comfortable participating in class activities with the flipped classroom"	0.91
Learner autonomy	4	"I find it easy to organize my time to review material before class"	0.83
Motivation	4	"Interactive class activities motivate me to participate more"	0.85
Preference over traditional instruction	3	"I prefer class time to be devoted to practicing rather than just listening to explanations"	0.81

Note. α = Cronbach's alpha. N=150.

Table 2. Sociodemographic characteristics of participants.

Variable	n	%
Environmental Engineering	54	36.0
Animal Science	51	34.0
Accounting and Auditing	45	30.0
Male	82	54.7
Female	68	45.3
18-20 years	71	47.3
21-23 years	58	38.7
24-26 years	21	14.0
English I	57	38.0
English II	43	28.7
English III	30	20.0
English IV	20	13.3

Note. N=150.

Student satisfaction with each type of digital resource used in the pre-class phase was also analyzed (Table 3). Instructor-created explanatory videos uploaded to YouTube received the highest satisfaction rating (M=4.15; SD=0.78). Moodle self-assessment quizzes also scored well (M=3.92; SD=0.85). Interactive Genially presentations (M=3.88; SD=0.89), used by 86.7% of students, drew favorable ratings. Resources with the lowest satisfaction were English-language podcasts (M=3.48; SD=1.02), used by fewer than half of the students, and Moodle discussion forums (M=3.55; SD=0.98). A possible explanation for the lower satisfaction with podcasts is the listening demand they place on students in introductory course levels, although this hypothesis would require verification through additional data.

Table 3. Digital resources used and satisfaction level.

Digital resource	Use (%)	M satisf.	SD
Instructor videos (YouTube)	100.0	4.15	0.78
Moodle quizzes	100.0	3.92	0.85
Genially presentations	86.7	3.88	0.89
Digital readings	78.0	3.62	0.96
Moodle forums	72.0	3.55	0.98
English podcasts	45.3	3.48	1.02

Note. N=150. Scale 1-5. Use (%) = percentage of students who reported using the resource. Satisfaction means were calculated only among students who reported using each resource; therefore, the denominator varies by resource.

Table 4 presents the descriptive results by questionnaire dimension. Mean scores across all five dimensions exceeded 3.50 out of 5, indicating favorable perceptions. The dimension with the highest mean was satisfaction with the methodology (M=3.95; SD=0.84), followed by preference over traditional instruction (M=3.91; SD=0.93). Learner autonomy registered the lowest mean (M=3.68; SD=0.97).

Table 4. Student perceptions by dimensión.

Dimension	M	SD	α
Perceived usefulness	3.82	0.91	0.87
Satisfaction	3.95	0.84	0.91
Autonomy	3.68	0.97	0.83
Motivation	3.74	0.89	0.85
Preference	3.91	0.93	0.81
Overall	3.82	0.88	0.89

Note. M=mean; SD=standard deviation; α=Cronbach's alpha. Scale 1-5. N=150. Dimension means were computed from raw item responses.

In the perceived usefulness dimension (Table 5), the highest-rated item was "The flipped classroom allows me to review the material as many times as I need before class" (M=4.12; SD=0.83). The lowest-rated item was "I consider that the flipped classroom better prepares me for real-life English use situations" (M=3.52; SD=1.01). Flexible access to the materials, then, was what students valued most, while they were more reserved about whether that learning carried over into authentic communicative situations.

Table 5. Items of the perceived usefulness dimensión.

Item	M	SD
Review material as many times as needed	4.12	0.83
Videos and resources facilitate comprehension	3.98	0.87
Greater preparation for face-to-face class	3.85	0.92
Better grammar and vocabulary comprehension	3.62	0.95
Preparation for real-life use situations	3.52	1.01

Note. Scale 1-5. N=150.

In the satisfaction dimension (Table 6), the highest-rated item was "I feel more comfortable participating in class activities with the flipped classroom" (M=4.08; SD=0.79). This is consistent with the rationale of the flipped model, under which class time spent on practice rather than exposition lowers the evaluative pressure students perceive; the instrument, however, did not measure that construct directly. Items on class organization (M=3.89) and clarity of instructions (M=3.85) scored slightly lower, which may point to some initial difficulty in adjusting to the new classroom format, a difficulty already documented elsewhere (7, 19).

Table 6. Items of the satisfaction dimensión.

Item	M	SD
I feel more comfortable participating	4.08	0.79
Satisfied with variety of resources	3.97	0.86
Good class organization	3.89	0.84
Clear instructions	3.85	0.88

Note. Scale 1-5. N=150.

Autonomy was the dimension with the lowest overall mean (M=3.68; SD=0.97). Among its items (Table 7), "I find it easy to organize my time to review material before class" received the lowest rating of the whole questionnaire (M=3.38; SD=1.12). This finding is consistent with a widely reported difficulty of the flipped classroom: managing pre-class preparation time autonomously is hard for students who have not developed self-regulation skills (7, 19). The high standard deviation of this dimension (SD=0.97), the highest in the instrument, indicates considerable response dispersion.

Table 7. Items of the autonomy dimensión.

Item	M	SD
Proceed at my own pace	3.92	0.88
Identify difficulties before class	3.78	0.93
Make decisions about my learning	3.65	0.95
Organize my pre-class review time	3.38	1.12

Note. Scale 1-5. N=150.

In the motivation dimension (Table 8), the item with the highest mean was "Interactive class activities motivate me to participate more" (M=3.95; SD=0.82). The lowest score corresponded to "I feel that the flipped classroom has increased my interest in learning English outside of class hours" (M=3.45; SD=1.06). The gap between the two items is telling: motivation was reported within the academic setting, but the transfer students perceived toward independent study of English outside class was more limited.

Table 8. Items of the motivation dimensión.

Item	M	SD
Interactive activities motivate participation	3.95	0.82
Technology makes English more interesting	3.86	0.88
Greater confidence to express myself	3.71	0.91
Greater interest in English outside class	3.45	1.06

Note. Scale 1-5. N=150.

The preference over traditional instruction dimension (Table 9) obtained an overall mean of 3.91 (SD=0.93). The item "I prefer class time to be devoted to practicing rather than just listening to explanations" obtained the highest mean of the entire questionnaire (M=4.18; SD=0.76). The item that scored lowest in this dimension was "I would recommend the flipped classroom for other courses" (M=3.72; SD=1.05), which suggests a degree of caution: valuing the model in their English course did not lead all students to assume it would work equally well in other subjects.

Table 9. Items of the preference dimension

Item	M	SD
Prefer practicing over listening	4.18	0.76
Learn more with flipped classroom	3.82	0.98
Would recommend for other courses	3.72	1.05

Note. Scale 1-5. N=150.

Table 10 presents the comparison by program. The ANOVA revealed statistically significant differences only in perceived usefulness ($F(2,147)=3.84$; $p=0.023$; $\eta^2=0.05$). Tukey's post hoc test indicated that the difference occurred between Environmental Engineering (M=4.02; SD=0.85) and Accounting and Auditing (M=3.58; SD=0.94) (p=0.019). The effect size was small according to Cohen's criterio (26), indicating that the program accounts for approximately 5% of the variance in this dimension. In the remaining dimensions, differences did not reach statistical significance ($p>0.05$).

Table 10. Comparison of means by program (ANOVA).

Dimension	Env.Eng.(M)	Anim.Sc.(M)	Acc.Aud.(M)	F	p
Perceived usefulness	4.02	3.81	3.58	3.84	0.023*
Satisfaction	4.05	3.94	3.82	1.52	0.222
Autonomy	3.78	3.68	3.55	1.18	0.310
Motivation	3.85	3.72	3.62	1.34	0.265
Preference	4.01	3.90	3.78	1.21	0.301

Note. *p<0.05. Tukey post hoc: Env.Eng. vs Acc.Aud. (p=0.019). $\eta^2=0.05$. N=150.

Perceptions were also analyzed by English course level (Table 11). Students enrolled in higher course levels (English III-IV, n=50) obtained slightly higher overall means (M=3.94; SD=0.82) than those in introductory courses (English I-II, n=100; M=3.76; SD=0.91), although this difference did not reach statistical significance ($F(1,148)=2.14$; $p=0.146$). The dimension where this trend was most evident was autonomy (M=3.85 vs. M=3.60), a difference that, while not significant, is consistent with the hypothesis that students further along in their studies may have had more opportunity to develop self-regulatory skills.

Table 11. Comparison of means by English course level.

Dimension	English I-II(M)	English III-IV(M)	F	p
Perceived usefulness	3.75	3.96	2.31	0.131
Satisfaction	3.90	4.05	1.28	0.260
Autonomy	3.60	3.85	2.89	0.091
Motivation	3.68	3.86	1.85	0.176
Preference	3.86	4.01	1.22	0.271
Overall	3.76	3.94	2.14	0.146

Note. English I-II: n=100; English III-IV: n=50. No significant differences at p<0.05.

Perceptions by sex (Table 12) showed no statistically significant differences in any dimension ($p>0.05$). The absence of detected differences does not establish that sex is irrelevant to these perceptions, but it is consistent with what was reported by Tran and Verezub (19).

Table 12. Comparison of means by sex (t-test).

Dimension	Male(M)	Female(M)	t	p
Perceived usefulness	3.79	3.86	0.45	0.654
Satisfaction	3.89	4.02	0.92	0.359
Autonomy	3.65	3.72	0.41	0.682
Motivation	3.67	3.82	1.01	0.314
Preference	3.96	3.85	0.68	0.498
Overall	3.79	3.85	0.52	0.604

Note. Male n=82; Female n=68. df=148. No significant differences.

Table 13 displays the percentage distribution of responses. Overall, 68.4% of responses fell in the agreement category, 18.7% were neutral, and 12.9% expressed disagreement. The dimension with the highest agreement percentage was satisfaction (72.3%). The dimension with the highest disagreement percentage was autonomy (17.2%), consistent with the lowest mean observed in this dimension.

Table 13. Percentage distribution of responses by dimensión.

Dimension	Disagree %	Neutral %	Agree %
Perceived usefulness	12.4	19.2	68.4
Satisfaction	10.1	17.6	72.3
Autonomy	17.2	20.5	62.3
Motivation	13.8	19.4	66.8
Preference	11.5	17.7	70.8
Overall	12.9	18.7	68.4

Note. Disagree=options 1-2; Neutral=option 3; Agree=options 4-5. N=150. Because the dimensions comprise different numbers of items (between three and five), the overall row is a descriptive summary across dimensions rather than an exact aggregate of individual responses.

Pearson correlations were calculated among the five dimensions (Table 14). All correlations were positive and significant ($p<0.01$). The strongest associations were observed between satisfaction and preference ($r=0.68$; $p<0.001$) and between motivation and satisfaction ($r=0.62$; $p<0.001$). The weakest correlation occurred between autonomy and perceived usefulness ($r=0.34$; $p<0.001$). These positive associations indicate that the five dimensions form part of a coherent overall assessment of the flipped classroom; however, inter-dimensional correlations do not in themselves constitute evidence of construct validity, which would require factor analysis.

Table 14. Pearson correlations among dimensions.

	PU	SAT	AUT	MOT	PREF
Usefulness (PU)	—	0.55**	0.34**	0.48**	0.52**
Satisfaction (SAT)		—	0.41**	0.62**	0.68**
Autonomy (AUT)			—	0.39**	0.36**
Motivation (MOT)				—	0.57**

Preference (PREF)	—

Note. **p<0.01. N=150.

An analysis by age group was also conducted (Table 15). Differences were not significant (F(2,147)=0.42; p=0.659). A slight trend was observed: older students reported marginally higher means in autonomy (M=3.81 vs. M=3.62), a difference that could hypothetically be associated with greater experience in time management, a variable that was not measured in this study.

Table 15. Comparison of means by age group.

Age group	n	Overall M	SD	Autonomy M
18-20 years	71	3.78	0.90	3.62
21-23 years	58	3.85	0.86	3.72
24-26 years	21	3.88	0.84	3.81

Note. F(2,147)=0.42; p=0.659. N=150.

DISCUSIÓN

The results of this study indicate that university students in non-linguistic programs at ESPOCH Sede Morona Santiago reported favorable perceptions toward the technology-mediated flipped classroom for English learning, with means ranging from 3.68 to 3.95 out of 5. These findings are consistent with evidence reported by Vitta and Al-Hoorie (16) and with the results of Arslan (17), who documented predominantly positive perceptions in university EFL contexts. It is important to emphasize that the present study did not include a control group, pretest, or posttest of language proficiency; therefore, the results reflect student perceptions and do not allow conclusions about the model's effectiveness in terms of learning outcomes.

Satisfaction was the highest-rated dimension (M=3.95), converging with Hung (27), who reported high satisfaction among Taiwanese EFL learners, and with the pattern described by Tran and Verezub (19). The convergence is notable because those studies were conducted in settings with reliable connectivity and established blended-learning cultures, whereas the present sample operated under less favorable infrastructural conditions. A tentative reading is that a favorable reception of the model does not require an optimal technological context, although infrastructure was not measured here and the point remains a conjecture. Within the SDT framework of Deci and Ryan (12), a possible explanation is that the flipped classroom, by devoting class time to interactive practice, may facilitate the satisfaction of the need for relatedness through collaborative work. However, this interpretation is an explanatory hypothesis that was not directly measured in the present study, as the instrument did not operationalize intrinsic motivation through a specific scale such as that of Noels et al. (28). The item with the highest mean in the entire instrument ("I prefer class time to be devoted to practicing," M=4.18) reinforces this trend and is consistent with findings reported by Aguayo et al. (21) in the Chilean context.

Autonomy was the dimension with the lowest mean (M=3.68). The item regarding time organization obtained the lowest score in the questionnaire (M=3.38). This result coincides with one of the most documented challenges of the flipped classroom: Akçayır and Akçayır (7) identified lack of prior preparation as a recurrent obstacle across disciplines, and Chen Hsieh et al. (29) found that students with lower self-regulation tend not to complete pre-class activities. The present data diverge from these studies in one respect: whereas they attribute the difficulty primarily to motivational factors, the lowest-scoring item here concerned time organization specifically rather than willingness, which points to a problem of study-management skills rather than engagement. At ESPOCH Sede Morona Santiago, the connectivity limitations affecting some students from rural areas of the Ecuadorian Amazon could contribute to this difficulty, but that circumstance was not measured here and the possibility therefore remains untested.

The significant differences in perceived usefulness between Environmental Engineering and Accounting and Auditing ($p=0.023$) may be interpreted through the TAM framework of Davis (14): a possible explanation, which would require empirical verification, is that Environmental Engineering students, whose training includes a technical-scientific component in English, may perceive a more direct utility of English for their professional practice. This hypothesis is consistent with evidence on English for Specific Purposes (30, 31, 32), although testing it would require a dedicated research design.

Several limitations should temper the reading of these results. Being cross-sectional, the design cannot establish causal relationships or trace how perceptions evolve over time. The sample was drawn by convenience from a single campus of a single institution, so the findings do not generalize beyond it. Perceptions were captured by self-report alone, with no qualitative triangulation and no objective measure of language proficiency. Neither a control group nor a pretest-posttest of proficiency was included, so there is no way of knowing whether the flipped classroom produced real gains in students' communicative competence. The evidence behind the instrument also has limits: the five-dimension structure rests on theoretical grounds and on the I-CVI and S-CVI values obtained from expert judgment, which document agreement among judges rather than construct validity, while Cronbach's alpha speaks only to internal consistency. No factor analysis was performed, and a confirmatory analysis on an independent sample would be the natural next step for testing the proposed structure. A further caveat concerns the evaluation itself: it followed an implementation delivered by the teacher-researcher, which leaves room for social desirability in the responses. Finally, running several statistical tests without correction raises the probability of Type I error. Work along these lines would benefit from quasi-experimental designs with control groups, objective proficiency measures, confirmatory factor analysis, mixed methods, and samples drawn from more than one institution.

CONCLUSIONES

The perceptions of 150 students from three non-linguistic programs at ESPOCH Sede Morona Santiago support the conclusions set out below, which hold for the context and scope of this study. On the first specific objective, the five dimensions were all rated favorably, with an overall mean of 3.82 out of 5. Satisfaction with the methodology and preference over traditional

instruction stood at the top, a sign that students welcomed having class time reallocated to practical work. Learner autonomy came last, and its weakest item was the organization of time for reviewing material before class; this is where accompanying the flipped classroom with explicit support for self-regulation appears most worthwhile.

On the second specific objective, the programs differed significantly only in perceived usefulness ($F(2,147)=3.84$; $p=0.023$; $\eta^2=0.05$), with Environmental Engineering above Accounting and Auditing. As argued in the discussion, a plausible reading is that students whose field makes more direct professional use of English perceive greater utility in the model; the effect size was small, so the finding should be read as suggestive rather than conclusive.

On the third specific objective, satisfaction and preference over traditional instruction were the best-rated dimensions and learner autonomy the weakest; within motivation, the lowest-scoring item was the one on interest in English outside class hours. Students thus valued the face-to-face experience more highly than the components they had to manage on their own, which points to the pre-class phase as the element most in need of pedagogical scaffolding. None of this licenses claims about the causal efficacy of the flipped classroom. What it does offer is descriptive evidence on student perceptions from a higher education setting in the Ecuadorian Amazon, a context largely absent from the flipped learning literature and one whose infrastructural and sociolinguistic conditions differ from those in which the model was developed and has been most extensively tested. It also provides a reasonable basis for pedagogical decisions in universities of that region.

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