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Students' Motivation for Online Learning of English as a Second Language Through the Lens of the Self-Determination Theory

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Abstract

Learning English as a second language (ESL) can be challenging for students, so it is essential to keep them motivated. One way to motivate students is through electronic programs (e-programs) that can enhance their motivation to learn. This research examined student learning motivation through the lens of the self-determination theory (SDT), with 39 preparatory-year students participating and learning in a blended context. Nine students were interviewed regarding their motivation to learn English using the electronic program, and both quantitative and qualitative research methods were used to examine participants' motivation to learn English in that context. The quantitative results indicated that each of the six motivational components levels were normal, with only the competence satisfaction domain significantly differing based on English ability. In addition, research results indicated that only autonomy satisfaction showed significant differences among preparatory-year students due to technology ability. Qualitative results revealed both positive and negative perceptions of the e-program among preparatory-year students, with positive aspects enhancing students' ESL learning experience while negative aspects helped contribute to dissatisfaction and frustration in motivational domains. We recommend that e-programs adopt the positive properties revealed by the present study, as the inclusion of these activities involves different aspects of language, and—at the same time—tries to overcome its negative properties. It was found that limiting student freedom is specifically related to open-ended questions.

Keywords: *English as a second language, higher education, online learning, blended learning, self-determination theory, students' motivation*

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Introduction and Theoretical Framework

Preparatory programs for higher education are considered a bridge between high school and university studies for students in their final years of secondary school (Deo, 2011). In this study, we are interested in online learning in the framework of an English as a second language (ESL) course for students in a preparatory year in a college of education. ESL learners, defined by Alberta Education (2007) as learners whose first language is not English, may not yet have sufficient English language skills to fully engage in the typical academic school experiences. Recently, ESL classrooms drew the attention of educational researchers, as the English language is used worldwide (Torres & Saribas, 2024) and online learning is a suggested means of alternative or complementary learning, especially for learning ESL (e.g., Amer & Daher, 2019).

Information and Communication Technology

In second-language learning, the role of information and communication technology (ICT) has long been acknowledged. Murray (2005) claimed, however, that while ICT presents numerous opportunities for collaboration and interaction, those opportunities are not inherent. Effective ICT instruction requires careful scaffolding to ensure learners can fully benefit from these collaborative experiences. While ICT offers a natural environment for fostering learner autonomy, it is crucial to recognize that this autonomy requires deliberate and systematic development.

ICT facilitates the formation of learner identities through hybrid language use, often in ways that are unforeseen by both teachers and students. Letchumanan (2024) found that these novel linguistic expressions can empower and motivate learners while offering many avenues for collaboration and interaction. Student empowerment and motivation are not automatically achieved, however. Effective ICT instruction requires skillful scaffolding to ensure learners can fully benefit from these collaborative possibilities. Effective ICT instruction can benefit from interaction among instructors as well (Mishra et al., 2020).

Game-based tools can benefit learners, especially ESL learners, in ICT-based environments. Babazade (2024) investigated the influence of digital tools on vocabulary learning among young second language learners (aged 12–17 years), and the research demonstrated that digital tools—especially those incorporating game-based elements—significantly improved vocabulary retention when compared to conventional teaching methods. Moreover, participants generally viewed these tools as both engaging and effective, although challenges like potential distractions and equitable access to technology were identified.

Online resources are critical to students' success when engaging in ESL courses. Cantos et al. (2023) investigated the contribution of online resources to students' learning in the ESL classroom and found that these resources fostered both supportive and competitive learning environments, leading to improvements in speaking abilities, pronunciation, and fluency. Specifically, these resources facilitated quicker sentence formulation, increased motivation, encouraged peer learning, expanded vocabulary through reading, and reduced speaking anxiety. While some barriers to effective tool use were identified, consistent practice and proper instruction enabled students to overcome these obstacles and achieve successful learning outcomes.

Self-Determination Theory

In the present research, we considered online learning a complementary modality to face-to-face ESL learning. We chose the self-determination theory (SDT) framework for this study, as it includes three critical components of online learning and, therefore, blended learning. As a motivational theoretical framework, SDT focuses on the inherent human need for autonomy, competence, and relatedness (Gagné & Deci, 2005), which leads to an individual's motivation to engage in activities promoting personal growth and well-being (Legault, 2019). We investigated preparatory year students' motivation to engage in online education while learning ESL through SDT, focusing on its components, addressing student motivation in the college, and verifying each aspect.

According to Ackerman (2025), the SDT autonomy component addresses the perception of control individuals experience when engaging in an activity. These individuals perceive themselves as "in charge" of their own destiny and have the freedom to make choices that align with their values and desires. The SDT competence component refers to feeling capable and effective at a particular task or activity. Legault (2017) found that people with a high perception of competence feel they can successfully achieve their goals and master new skills. The SDT relatedness component addresses the need to be connected and valued by others. Ackerman (2025) found that people with a high sense of relatedness feel they are part of a community and have positive relationships with others.

According to SDT, when individuals perceive autonomy, competence, and relatedness in a particular activity, they are motivated to engage in that activity (Holt et al., 2019). This intrinsic motivation is driven by an individual's own interest and enjoyment in the activity rather than external rewards or pressures. In contrast, when individuals feel a lack of autonomy, competence, and relatedness, they tend to be extrinsically (externally) motivated to engage in that activity (Ryan & Deci, 2020), possibly with rewards or pressures.

Researchers showed a strong interest in students' autonomy in online learning. Muhammad (2020), for example, found that the online Schoology platform effectively promotes student autonomy, evidenced by several factors including active student participation (logging in and commenting on peers' ideas); student control over learning modalities, settings, and materials; and enthusiastic student engagement in completing assigned challenges. A noteworthy observation was increased engagement by "shy" students within the Schoology platform. Concerning relatedness, Kelly et al. (2022) concluded that college students' perceptions of online group work can be negative and may create challenges implementation in online courses. Additionally, Yıldırım et al. (2024) found a positive correlation between students' problem-solving abilities in virtual environments and their technology-use competencies, indicating that an increased duration in technology use was associated with higher levels of content development in digital environments. The present paper addresses the three constructs—autonomy, competency, and relatedness—as part of the SDT framework of students' motivation.

Literature Review

Motivation to Learn

Educators and educational researchers have been interested in the motivation to learn due to its relationships with other educational variables, such as achievement. Özen (2017) reported that motivation had a positive low effect on student achievement. Karaman et al. (2019) found that the deep learning approach mediated the relationship between students' motivational variables and academic achievement. Other researchers studied students' learning motivation in specific contexts, such as in the context of modeling activities (Daher, 2021), robotics (Daher, 2022), and AI tools (Hmoud et al., 2024). The present research is interested in motivation in the context of blended learning.

Motivation to learn a second or foreign language has attracted the attention of educational researchers. Almegren (2022) studied students' motivation to learn English in the context of Saudi 2030 Vision, for example, and found their motivation to learn foreign languages—in this case English—increased following the program announcement. Additionally, Firmansyah et al. (2023) studied students' motivation toward learning English after the COVID-19 pandemic and found that students' motivations varied due to external and internal factors, including their desire to improve their skills, and understand diverse cultures, beliefs, and viewpoints or simply to pass their exams. In the current study, we investigate students' motivation to learn ESL in the context of an online program for English language learning.

Educational researchers developed different theoretical frameworks to study students' motivation for learning, which were followed by questionnaires, suggested by Cardella et al. (2020), for measuring student motivation to learn. The questionnaire consists of six components: autonomy satisfaction, autonomy frustration, relatedness satisfaction, relatedness frustration, competence satisfaction, and competence frustration. The present study used the Cardella et al. (2020) questionnaire to study students' motivation to learn ESL using a Moodle-based program.

Online Learning

Online learning has become a vital mode of learning. Online learning utilizes materials and activities that are accessed through the internet, addressing content accessibility through technological means. The flexibility and convenience of online learning make it accessible from any location—at any time. According to Benson (2002), online education (distance education) contributes to the availability of educational materials for the nontraditional and disenfranchised student. Hiltz and Turoff (2005) highlighted its benefits, which include connectivity, flexibility, and ability through promoting varied interactions.

Educators' recent interest in online learning stems from the crucial role it plays in distance education, particularly during educational emergencies like the COVID-19 pandemic. Various aspects of online education have been studied, including the cognitive aspect of online learning (Bertiz & Karoğlu, 2020), the affective aspect (Daher et al., 2021), the psychological aspect (Hartnett et al., 2011), the social aspect (Sariyatun et al., 2021), the behavioural aspect (Yang & Chen, 2020), and the administrative aspect (Hamdan et al., 2021). Additionally, researchers studied online education issues, such as task design, that science and mathematics teachers encounter in online learning during emergency education (Daher et al., 2022), which showed that teachers who participated could effectively use technological tools to create tasks that fostered students' control while carrying out the scientific activities they undertook.

SDT has been used to explain student engagement in online learning. Chiu (2021) found that digital support strategies better meet students' needs, and all needs—competence, autonomy and relatedness—predicted engagement levels, with relatedness being particularly significant. Here, we use SDT to target motivation in a blended context, specifically motivation to learn ESL.

Platforms for Online Learning

With the rapidly increasing popularity of learning management systems (LMSs), the delivery of language learning programs gradually took the form of online-based instruction. Moodle was deployed to facilitate learning and instruction, and many educational institutions adopted it for use as an adjunct to its traditional courses (blended or hybrid), or as a tool for independent learning. Moodle is highly adaptable and provides a rich selection of features that often surpasses those of other systems (Akgunduz & Topalsan, 2024).

Researchers studied different issues of educational online platforms, such as the quality, the capabilities, and the adoption of these platforms, or their fit for specific educational goals. Abuzant et al. (2021) studied the quality of using the Google Classroom platform when teaching an automation and programming course. The study findings showed that this platform positively affected the consequences of students' learning, as it enabled a secure environment, created an environment where students used various types of materials, and increased students' retention of course material. Affecting positively the consequences of learning, in turn, increased both the instructor's and learners' content, as well as their plans to use this platform in the class.

Educational researchers were interested in the advantages that distance education platforms provided to student learning. Snoussi and Radwan (2020) found that these platforms offer several advantages, including improved student communication skills, the ability to continue teaching and learning during crises, and the effective integration of multimedia resources. Challenges include technical issues and varying levels of computer proficiency among students, as well as a lack of practical hands-on training. Respondents confirmed the effectiveness of the internet in fostering collaborative learning and knowledge building.

Researchers studied the factors that influence students' perception of distance education platforms and their behavior in these platforms. For example, Daher (2014) found various conditions affected the participants' adoption of Facebook as an educational platform, including course-related conditions and requirements, which also related to the learner, their competence level in using the computer and the internet, and their relationship to the platform content. Additionally, Amer and Daher (2019) found that three factors—perceived usefulness, computer self-efficacy, and perceived ease of use—played a definite role in shaping the attitudes of "English for Academic Purposes" students towards the Moodle platform, which is equipped with various quizzes. Moreover, these factors also influenced the students' intent for future use of the platform as both students and instructors.

Motivation for Online and Blended Learning

Researchers studied students' motivation for online and blended learning. Moore (1989) associated independence, self-direction, and intrinsic motivation with distance learners, and Shroff et al. (2007) highlighted intrinsic motivation as characterizing online learners. Studies addressing the motivation of online and on-campus students showed that online learners at both undergraduate and post-graduate levels were more intrinsically motivated when compared to their on-campus counterparts (e.g., Huett et al., 2008).

Hartnett (2015) examined the contextual factors that negatively impacted the psychological needs of online learners. The most significant factors identified were high workload, pressure to perform well on assessments, perception that the learning activity lacked relevance, complicated guidelines, communication problems with peers, and inadequate guidance and feedback from instructors. Significant correlations between participants' intrinsic and extrinsic motivations and factors of acceptance of Moodle as platform for an "English for Academic Purposes" course were reported by Amer and Daher (2019).

Wei (2022) reported that the literature showed the potential of digital instruments to increase learners' motivation by being appealing, effective, and useful. Other reasons for increasing motivation were integrating with community, gaining a better understanding of different cultures and societies, engaging in academic contexts, and interacting with native speakers.

In previous studies, the SDT framework was little employed to study student motivation to engage in blended learning. This study attempts to research students' motivation to engage by using quantitative and qualitative methods.

Rationale, Purpose of the Study, and Research Questions

Although research related to each aspect of this present study was conducted recently, this research is significant because it uniquely combines the application of the SDT framework to the investigation of student motivation for learning ESL in a blended learning environment. SDT enables us to study students' autonomy, competency, and relatedness—three constructs pointed at by previous research as influencers of the students' learning outcomes, especially in higher education (Holmes et al., 2021; Kinsella et al., 2024).

For this study, the SDT theoretical framework was performed quantitatively and qualitatively, contributing to the triangulation of the data and, thus, to the validity of the results. This triangulation contributed to our understanding of the studied phenomenon: students' motivation to learn ESL in a blended context.

The present research aims to examine the motivational components of preparatory-year students learning English through a Moodle-based program. Specifically, it seeks to assess and quantify the levels of the following motivation components among these students: autonomy satisfaction, autonomy frustration, relatedness satisfaction, relatedness frustration, competence satisfaction, and competence frustration. In addition, the present study seeks to determine whether students' computer or technological proficiency (C-Ability) and English language proficiency (E-Ability) significantly influence these motivational components. Additionally, the research aims to describe how students perceive the impact of the Moodle-based program on their motivation. We will analyze these perceptions in alignment with SDT's components of autonomy, competence, and relatedness.

The study focuses on identifying the motivational themes associated with each motivational component of SDT using a mixed-methods approach. Our research is intended to provide a holistic understanding of student motivation within this specific e-learning context by combining quantitative and qualitative methods. Research questions (RQs) for this study include:

> RQ1: What is the level of motivation among preparatory-year students when learning English using a Moodle-based program?
>
> RQ2: Is there a significant difference in the motivation components among preparatory-year students due to the E-Ability background variable?
>
> RQ3: Is there a significant difference in the motivation components' levels among preparatory-year students due to the C-Ability background variable?
>
> RQ4: How do preparatory-year students perceive the impact of a Moodle-based English learning program on their motivation?

Methods

A mixed-methods research design, including quantitative and qualitative elements, was used for this study. The quantitative portion of the study utilized an SDT questionnaire. The qualitative portion utilized interviews. The interview questions utilized the SDT theoretical framework.

Research Context and Participants

The research was conducted in a teacher college in the Triangular area of Israel, which prepares prospective teachers in various disciplines, including languages, sciences, and special education, and offers three degrees: preparatory year, first degree, and second degree. Research participants included 39 preparatory-year students and addressed their motivation to learn ESL using an e-program. English for these students is a second language, as their mother language is Arabic, but students are required to learn two other languages to meet the matriculation exams: Hebrew and English. All preparatory-year students must take the ESL course as part of their study.

In this research, the Moodle-based set of units, including various types of ESL activities, is referred to as the e-program. In its present context, this program uses an online interactive Moodle-based platform that allows for independent autonomous learning while also allowing the instructor to track students' performance and progress levels. The e-program included various media and levels of interactive study, such as reading, listening, vocabulary, and grammar quizzes.

The research sample of 39 students included 16 males and 23 females aged 19–30 years. Participants were divided into two groups based on their educational background. The first group included 19 students who were enrolled in the annual preparatory program and who had not yet obtained a full Bagrut certificate. The second group included 20 students who were enrolled in the semester-long preparatory program and who had completed their full Bagrut certificate but obtained an insufficient average score for direct admission to academic institutions in education. All participants studied English during their secondary school, but none had prior experience with a similar course or content in a distance learning technological environment.

Additionally, students studied English as a prerequisite to teacher training college admission but finished high school without meeting the requirements of the matriculation exams; they are doing a preparatory year instead. These students learned 8 hours a week—4 hours in face-to-face sessions and four 1-hour asynchronous sessions integrating the Moodle LMS. Participants used Moodle both in school and at home but primarily at home, although the lecturer could still track student performance and progress. Table 1 shows the frequency of participants in the quantitative part of the present research in terms of English ability (E-Ability) and computer ability (C-Ability).

Table 1. *Frequency of Participants in Terms of E-Ability and C-Ability*

Ability	Low	Medium	High	All
E-Ability	8	20	11	39
C-Ability	7	21	11	39

We interviewed nine of the 39 students who responded to the questionnaire. These interviews allowed us to elicit qualitative information regarding students' motivation to learn using an online platform. Thus, the number of the quantitative sample is 39, while that of the qualitative sample is 9. In the qualitative part of the research, the saturation of themes occurred in the seventh interview, while the saturation of the properties of the themes occurred in the eighth interview. This guaranteed the validity of the qualitative results.

Data Collecting Tools

To collect the data, we used the SDT framework, developed by Deci et al. (1991). This framework includes three motivational components, autonomy, competence, and relatedness, and each component has a positive and a negative aspect. Each aspect has four items. As an example, the autonomy satisfaction aspect is: "I feel a sense of choice and freedom in learning English using the e-program," while an example of the autonomy frustration aspect is: "I feel forced to learn English using the e-platform." An example of the relatedness satisfaction aspect is: “I feel connected with students who learn English with me using the e-program,” while an example on the relatedness frustration aspect is: “I have the impression that students who learn English with me using the e-program do not collaborate with me.” Additionally, an example of the competence satisfaction aspect is: “I feel confident that I can English with the e-program well,” while the competence frustration aspect example is: “I feel like a failure because of the mistakes I make when learning English with the e-program.”

For this research, we adopted the SDT questionnaire of Cardella et al. (2020), adding the reference to the e-program to the items. We sent the questionnaire to experts in the affective aspect of learning to give us their judgment regarding its validity. They remarked primarily about the formulation of the items, and we corrected accordingly. We computed the reliability of each component, where Cronbach alpha turned out to be 0.89–0.91 for all components, an acceptable value for reliability. In addition, the validity of the six scales was supported by Pearson correlations between scale items and their respective scales, which ranged from 0.761 to 0.854. Furthermore, correlations between each scale and the total questionnaire score, ranging from 0.723 to 0.884, provided further evidence for the overall validity of the questionnaire.

The questionnaire (see the appendix) was administered at the end of the ESL course—specifically at the end of the last lecture. We asked the students if they would agree to fill the motivation questionnaire. We explained the goals of the questionnaire and requested they fill out a consent form prior to completing the questionnaire to ensure their acceptance to complete it.

The interview questions addressed the six domains of motivation. Examples included: Can you talk about choice and freedom in learning English using the e-program? Can you give an example of choice and freedom in learning English using the e-program? Can you talk about you being forced to learn English using the e-platform? Can you give an example of being forced to learn English using the e-platform?

Data Analysis Tools

Participant motivation levels were calculated by dividing 4 units, between 1 and 5 (the lowest and highest score of each item), by 5 (the intended five levels) to receive 0.8 units. This calculation gave us the following levels: the very low level (1.0–1.8), the low level (1.8–2.6), the normal level (2.6–3.4), the good level (3.4–4.2), and the very good level (4.2–5). Figure 1 shows the critical points of motivation. This use of grouped frequency distributions was described by Stockburger (2016). In comparing means with the critical motivation points, the one-sample *t*-test was used. On the other hand, when the normality distribution was not satisfied, we computed the levels.

Figure 1. *Critical Points of Motivation*

When considering the ranks, we used percentiles. Table 2 shows the percentiles for the different motivation components. To find these percentiles, we used the “Analyze→ Descriptive Statistics→ Frequencies” procedure in SPSS. We conclude that the levels here are for S-Relatedness: the very low level (between one 1.0 and 1.25), the low level (between 1.25 and 2.00), the normal level (between 2.00 and 3.00), the good level (between 3.00 and 3.75), and the very good level (between 3.75 and five). We can conclude several results for the F-Relatedness and F-Competence components. To examine the significance of the level, we ran the non-parametric sign test (Grande, 2016). Please note, for the remainder of the paper, we will use the following abbreviations: S-Relatedness = satisfaction of relatedness; F-Relatedness = frustration from relatedness; S-Competence = satisfaction of competence; F-Competence = frustration from competence.

Table 2. *Percentile Scores for Motivation Components*

	Percentile				
Category	20th	40th	60th	80th	100th
S-Relatedness	1.25	2.00	3.00	3.75	5.00
F-Relatedness	2.00	2.25	3.00	4.00	5.00
F-Competence	1.25	2.00	3.00	3.50	5.00

Statistical Exams

RQ1: Level of Motivation for Online Learning When Using a Moodle-Based Program

The first research question (RQ1) examines the motivation components among preparatory-year students. For finding the level of the motivation for online learning of English among preparatory-year students, we used one-sample *t*-test when the motivation component satisfied normality distribution and outliers; we used signed test otherwise. We used the Shapiro-Wilk test to find whether a motivation component satisfies the normality distribution. The computation showed that the following variables satisfy the normality distribution: S-Autonomy, F-Autonomy, and S-Competence (see Table 3). The rest of the variables do not satisfy the normality distribution: S-Relatedness, F-Relatedness and F-Competence.

Table 3. *Normality Results of the Motivation Components (Shapiro-Wilk)*

Construct	Statistic	*df*	Sig.
S-Autonomy	.960	39	.175
F-Autonomy	.952	39	.099
S-Competence	.952	39	.095
F-Competence	.937	39	.030
S-Relatedness	.922	39	.010
F-Relatedness	.932	39	.021

RQ2: Difference in Motivation Due to the E-Ability Background Variable

The second research question (RQ2) investigates whether there were significant differences in motivation component levels among preparatory-year students due to the E-Ability background variable. Finding the significant difference, we used analysis of variance (ANOVA) when the motivation component satisfied normality distribution, homogeneity of variance, and outliers. We ran the Welch and Brown-Forsythe versions of one-way ANOVA when there was normality but the homogeneity of variance was not satisfied. We used the Kruskal-Wallis test when the normality distribution was not satisfied. To examine the normality distribution, we computed Shapiro-Wilk Statistics for Motivation Components Over E-Ability (see Table 4). The results of the computation show that all the motivation variables except F-Autonomy have normal distribution over E-Ability.

Table 4. *Shapiro-Wilk Statistics for Motivation Components Over E-Ability*

Motivation Component	E-Ability Level	Statistic	*df*	Sig.
S-Autonomy	Low	.948	8	.692
	Medium	.943	20	.270
	High	.872	11	.083
F-Autonomy	Low	.907	8	.335
	Medium	.952	20	.400
	High	.751	11	.002
S-Competence	Low	.947	8	.683
	Medium	.929	20	.145
	High	.926	11	.373
F-Competence	Low	.916	8	.401
	Medium	.948	20	.338
	High	.871	11	.081
S-Relatedness	Low	.875	8	.170
	Medium	.922	20	.106
	High	.914	11	.273
F-Relatedness	Low	.967	8	.875
	Medium	.916	20	.085
	High	.910	11	.246

We ran ANOVA to find whether significant differences exist in the motivation components for all the components except F-Autonomy that needed the Kruskal-Wallis test to be applied (see Table 5). Moreover, we used Levene Statistic to investigate the homogeneity of variance results over E-Ability. The results show that the six motivation components have homogeneity of variance over E-Ability.

Table 5. *Homogeneity of Variance Results of the Motivation Components Over E-Ability*

Motivation Component	Levene Statistic	*df1*	*df2*	Sig.
S-Autonomy	.155	2	36	.857
F-Autonomy	1.432	2	36	.252
S-Competence	.049	2	36	.953
F-Competence	.067	2	36	.935
S-Relatedness	.647	2	36	.530
F-Relatedness	.720	2	36	.494

RQ3: Difference in Motivation Due to the C-Ability Background Variable

The third research question (RQ3) investigated whether a significant difference existed in the motivation components' levels among preparatory-year students due to the C-Ability background variable. Here, the analysis was the same as in the second research question. To examine the normality distribution, we computed the Shapiro-Wilk statistic (see Table 6).

Table 6. *Shapiro-Wilk Statistic for Motivation Components Over C-Ability*

Motivation Component	C-Ability Level	Statistic	*df*	Sig.
S-Autonomy	Low	.928	7	.535
	Medium	.898	21	.032
	High	.903	11	.200
F-Autonomy	Low	.938	7	.621
	Medium	.952	21	.372
	High	.797	11	.009
S-Competence	Low	.931	7	.560
	Medium	.948	21	.308
	High	.947	11	.612
F-Competence	Low	.877	7	.212
	Medium	.948	21	.309
	High	.864	11	.064
S-Relatedness	Low	.871	7	.191
	Medium	.920	21	.088
	High	.835	11	.027
F-Relatedness	Low	.867	7	.176
	Medium	.961	21	.538
	High	.895	11	.161

The results show that three motivation variables (F-Relatedness, S-Competence, and F-Competence) have normal distribution over E-Ability, while three other motivational variables (S-Autonomy, F-Autonomy, and S-Relatedness) do not. For the motivation component with normal distribution over E-Ability, we ran ANOVA to find whether significant differences existed in the motivation components. We ran the Kruskal-Wallis test when the motivation component did not satisfy normal distribution. Moreover, we used the Levene statistic to investigate the homogeneity of variance results over C-Ability (see Table 7). The results show that all the motivation components, except F-Competence, satisfy the homogeneity of variance.

Table 7. *Levene Statistic for Homogeneity of Variance Results of the Motivation Components Over C-Ability*

Motivation Component	Levene Statistic	*df1*	*df2*	Sig.
S-Autonomy	.386	2	36	.683
F-Autonomy	2.957	2	36	.065
S-Competence	.343	2	36	.712

F-Competence	3.945	2	36	.028
S-Relatedness	2.821	2	36	.073
F-Relatedness	2.551	2	36	.092

RQ 4: Impact of a Moodle-Based English Learning Program on Motivation

The fourth research question (RQ4) examines how preparatory-year students perceive the impact of a Moodle-based English learning program on their motivation and to what extent this perception aligns with the components of SDT. Analyzing the interview data, we used deductive and inductive content analysis, where the deductive content analysis depended on SDT (Gagné & Deci, 2005). Table 8 shows the categories and themes of the previous theoretical framework. Note that the student examples are suggested as fitting the categories and themes and are not taken from the interviews.

Table 8. *Motivation Categories, Themes, Codes, Examples, and Analysis*

Category	Themes	Codes	Example Response	Analysis
S-Autonomy	Freedom to choose, freedom to make decisions, etc.	liberty, freedom, choice, making decisions	*I had the freedom to choose the type of question that I wished to solve.*	Addresses the S-autonomy of the student's freedom to make a choice
F-Autonomy	Obliged to, being dependent upon, etc.	dependence, obligation, force	*Sometimes the instructor obliges us to solve specific questions.*	Addresses the F-autonomy of the student's obligation to solve specific questions
S-Competence	Obtaining expertise in, developing the ability to, etc.	expertise, proficiency, ability	*My proficiency in English improved because of using the e-program.*	Addresses the S-competence of the student to improve their English proficiency
F-Competence	Unable to solve, incapable of understanding, etc.	inability, incapability, lack	*I was unable to use the e-program to improve my English.*	Addresses the F-competence of the student's inability to improve their English proficiency
S-Relatedness	Possibility to work together, to collaborate, etc.	relatedness, togetherness, collaboration	*I could collaborate with other students to solve the questions.*	Addresses the S-relatedness of the student's potential to learn collaboratively
F-Relatedness	Disconnectedness in the platform, individuality of working in the platform, etc.	disconnectedness, nonconformity, individually	*I preferred to solve the questions individually in my free time. I could not find time to collaborate with other students.*	Addresses the F-relatedness of the student's inability to work individually

Results

Research Question 1 Results

The descriptive statistics of the motivation components for RQ1 are shown in Table 9. The three variables S-Autonomy, F-Autonomy, and S-Competence satisfied the normal distribution, so we ran one-sample *t*-test to verify their level.

Table 9. *Motivation Component Descriptive Statistics*

Category	*N*	*Mean*	*SD*
S-Autonomy	39	3.205	1.056
F-Autonomy	39	3.086	1.064
S-Competence	39	3.058	1.151
F-Competence	39	2.654	1.219
S-Relatedness	39	2.660	1.289
F-Relatedness	39	2.756	1.232

Note: N = sample size; *Mean* = arithmetic average; *SD* = standard deviation.

Table 10 shows the results of the computations, showing that the level of each of the three motivation variables is normal.

Table 10. *One-Sample t-Test for Level of Motivation Components*

Component	Mean Difference	t_{normal}	*p*	Lower 95% CI Difference	Upper 95% CI Difference
S-Autonomy	0.6051	*3.58*	*< .001*	0.263	0.947
F-Autonomy	0.4855	*2.85*	*.007*	0.140	0.831
S-Competence	0.4577	*2.48*	*.018*	0.085	0.831

Note: t_{normal} = test statistic calculated using a normal-distribution approximation; *p* = significance level; CI = confidence interval.

In contrast, the three variables F-Competence, S-Relatedness, and F-Relatedness did not satisfy the normality distribution, so we ran the non-parametric sign-test. We compared the mean rank of the three components with the bigger critical point in the scale of each motivation component (see Table 11). To describe the results of the Wilcoxon Signed Ranks Test, we followed Laerd (Laerd Statistics, 2018). Table 11 shows that the three motivation components have more positive ranks than negative ranks when compared with 3.00. Thus, the mean of ranks of the three components is less than 3, but this is not significantly so.

Table 11. *Wilcoxon Signed Ranks Test Results for Motivation Components Compared With Scale Value 3.00*

Scale Value	Component	Ranks	*N*	Mean Rank	Sum of Ranks	*Z*	Sig.
3.00	S-Relatedness	Negative	14[a]	12.89	180.50	-1.794	.073
		Positive	19[b]	20.03	380.50		
		Ties	6[c]	—	—		
		Total	39	—	—		
3.00	F-Relatedness	Negative	12[d]	16.88	202.50	-1.158	.247
		Positive	20[e]	16.27	325.50		
		Ties	7[f]	—	—		
		Total	39	—	—		
3.00	F-Competence	Negative	13[g]	13.62	177.00	-1.858	.063
		Positive	20[h]	19.20	384.00		
		Ties	6[i]	—	—		
		Total	39	—	—		

Note: a = 3.00 < S-Relatedness; b = 3.00 > S-Relatedness; c = 3.00 = S-Relatedness; d = 3.00 < F-Relatedness; e = 3.00 > F-Relatedness; f = 3.00 = F-Relatedness; g = 3.00 < F-Competence; h = 3.00 > F-Competence; i = 3.00 = F-Competence.

We compared the mean rank of the three components with the smaller critical point (lower scale values) in the scale of each motivation component. Table 12 shows that the three motivation components have more negative ranks than positive ranks when compared with a critical point lesser than 3.00. The mean ranks of the three components are more than the lesser critical point—and this is significantly so. So, we can conclude from Table 11 and Table 12 that the three motivation variables lie at the normal level.

Table 12. *Wilcoxon Signed Ranks Test Results for Motivation Components Compared With Lower Scale Values*

Scale Value	Component	Ranks	*N*	Mean Rank	Sum of Ranks	*Z*	Sig.
2.00	S-Relatedness	Negative	22[a]	22.61	497.50	-3.001	.003
		Positive	13[b]	10.19	132.50		
		Ties	4[c]	—	—		
		Total	39	—	—		

2.25	F-Relatedness	Negative	25[d]	21.21	445.50	-2.144	.032
		Positive	7[e]	13.18	184.50		
		Ties	7[f]	—	—		
		Total	39	—	—		
2.00	F-Competence	Negative	23[g]	20.63	474.50	-3.048	.002
		Positive	11[h]	10.95	120.50		
		Ties	5[i]	—	—		
		Total	39	—	—		

Note: Mean ranks of the three components with the smaller critical point in the scale of each motivation component; a = 2.00 < S-Relatedness; b = 2.00 > S-Relatedness; c = 2.00 = S-Relatedness; d = 2.25 < F-Relatedness; e = 2.25 > F-Relatedness; f = 2.25 = F-Relatedness; g = 2.00 < F-Competence; h = 2.00 > F-Competence; i = 2.00 = F-Competence.

Research Question 2 Results

The second research question (RQ2) examined whether there were significant differences in the motivation components among preparatory-year students due to the E-Ability background variable. Table 13 shows the results of the related ANOVA. Components shown met normality assumptions for ANOVA across E-Ability levels (Low, Medium, High).

Table 13. *ANOVA Results for the Motivation Components Satisfying Normality Over E-Ability*

Component	Level	*N*	*Mean*	*SD*	*F*	Sig.
Autonomy	Low	8	2.93	1.11	*3.038*	.060
	Medium	20	2.97	0.92		
	High	11	3.84	1.08		
Competence	Low	8	2.47	1.11	*4.910*	.013
	Medium	20	2.85	1.06		
	High	11	3.86	0.98		
D_Competence	Low	8	2.84	1.34	*0.283*	.755
	Medium	20	2.70	1.21		
	High	11	2.43	1.23		
Relatedness	Low	8	2.97	1.33	*1.100*	.344

	Medium	20	2.36	1.17		
	High	11	2.98	1.46		
D_Relatedness	Low	8	3.19	1.22	*0.609*	.549
	Medium	20	2.66	1.34		
	High	11	2.61	1.08		

Note: *N* = sample size; *SD* = standard deviation; *F* = one-way analysis of variance statistic; Sig. = significance level (*p* value).

Table 14 shows that only the S-Competence component differs significantly over E-Ability. Post hoc Scheffé comparisons show that significant differences in S-Competence occur between low and high E-Ability levels and between medium and high E-Ability levels, both in favor of high E-Ability students. To find which values of S-Competence made the significant difference, we ran post hoc comparisons shown in Table 14.

Table 14. *Post Hoc Comparisons Using Scheffe for the S-Competence Component Over E-Ability*

(I) E_Ability	(J) E_Ability	Mean Difference (I–J)	Std. Error	Sig.	95% CI Lower Bound	95% CI Upper Bound
Low	Medium	-0.381	0.438	0.688	-1.500	0.738
	High	-1.395*	0.487	0.025	-2.638	-0.152
Medium	Low	0.381	0.438	0.688	-0.738	1.500
	High	-1.014*	0.393	0.047	-2.018	-0.009
High	Low	1.395*	0.487	0.025	0.152	2.638
	Medium	1.014*	0.393	0.047	0.009	2.018

Note: CI = confidence interval. An asterisk (*) indicates that the mean difference is significant at the 0.05 level.

In the case of F-Autonomy over E-Ability, we ran Kruskal-Wallis Test (see Table 15). Results indicate no significant differences in F-Autonomy over E-Ability levels.

Table 15. *Kruskal-Wallis Test for F-Autonomy Over E-Ability*

E-Ability Level	Mean Rank	Test Statistic	Sig.
Low	20.13	4.325	.115
Medium	23.10		
High	14.27		

Research Question 3 Results

The third research question (RQ3) examined whether there were significant differences in the motivation components among preparatory-year students due to the C-Ability background variable. Table 16 shows the results of the related ANOVA for F-Relatedness, S-Competence, and F-Competence. No significant differences were found in F-Relatedness, S-Competence, or F-Competence across C-Ability levels among preparatory-year students.

Table 16. *ANOVA for F-Relatedness, S-Competence and F-Competence*

Component	Level	*N*	Mean	*SD*	*F*	Sig.
F-Relatedness	Low	7	2.1786	1.35181	1.089	.347
	Medium	21	2.7976	0.99568		
	High	11	3.0455	1.53630		
S-Competence	Low	7	2.7143	0.96208	.520	.599
	Medium	21	3.2143	1.18397		
	High	11	2.9773	1.23721		
F-Competence	Low	7	2.4286	1.10599	.798	.458
	Medium	21	2.5238	1.00282		
	High	11	3.0455	1.63102		

In the case of S-Autonomy, F-Autonomy, and S-Relatedness over C-Ability, we ran the Kruskal-Wallis Test (see Table 17). Results indicate that only S-Autonomy shows significant differences across C-Ability levels among preparatory-year students.

Table 17. *Kruskal-Wallis Test for S-Autonomy, F-Autonomy, and S-Relatedness Over C-Ability*

Motivation Component	C-Ability Level	Mean Rank	Test Statistic	Sig.
S-Autonomy	Low	11.07	7.119	.028
	Medium	19.98		
	High	25.73		
F-Autonomy	Low	17.21	.736	.692
	Medium	21.29		
	High	19.32		
S-Relatedness	Low	17.57	.716	.699
	Medium	21.36		
	High	18.95		

We conducted post-hoc comparisons to find what made those differences significant. Table 18 shows the results of the comparisons. Results show that the significant overall effect is driven by the difference between low and high C-Ability levels, with higher S-Autonomy scores observed among students with high C-Ability.

Table 18. *Post Hoc Comparisons for S-Autonomy Over C-Ability*

Sample 1–Sample 2	Test Statistic	Sig.
Low–Medium	-8.905	.073
Low–High	-14.656	.008
Medium–High	-5.751	.174

Research Question 4 Results

The fourth research question (RQ4) investigates preparatory-year students' perceptions regarding the impact of a Moodle-based English learning program on their motivation, relating these perceptions to the components of SDT. The subsequent description is derived from student interviews, specifically focusing on the three fundamental psychological needs posited by SDT—autonomy, relatedness, and competence.

Autonomy

Participating students addressed the achievement of S-Autonomy through the online interactive LMS. Their responses indicated that the ESL e-program allowed them greater autonomy than a traditional face-to-face setting. Ryan stated, "In class, I cannot progress in tasks according to my ability; the lecture's rules do not allow my autonomy. When I use the LMS, I am free to progress with tasks. I perform many different tasks as I wish."

Participants also addressed the achievement of S-Autonomy through the instructor. They emphasized that freedom allowed by the instructor to choose tasks independently enhanced their autonomy. This autonomy enhanced their decision-making, which satisfied them, as they performed tasks according to their preferences. Sherine stated, "The lecturer allowed us to choose randomly. That's when I began to choose according to my preferences, specifically, reading comprehension and listening."

In addition, participants addressed F-Autonomy through the LMS instructor. Their answers indicated that S-Autonomy in the context of the LMS depended on the instructor. They described their work within the system as including two stages related to their freedom to learn—a stage in which the instructor determined the tasks that the students should complete and a stage in which the tasks were not determined. Interviewed participants described the second stage as more enthusiastic and liberating. Sherine said, "I wanted to do tasks other than those required by the instructor, but I initially stuck to what was directly required."

Participating students' responses indicate that the online ESL e-program allowed them a specific range of autonomy in selecting and completing tasks. The results also show that the degree of students' autonomy when using the interactive LMS depended on the instructor's management of their learning.

Relatedness

Participating students addressed the establishment of S-Relatedness between students and the LMS instructor. They described the importance of the relationship between them and the LMS lecturer and its impact on their work within the LMS teaching environment. They described both positive and negative effects. On the positive side, the students talked about the response of the lecturer to their requests regarding technical difficulties. The participants said that the lecturer immediately addressed the technical difficulties of students. As described by Sami, "In case I faced difficulties in working within the system, I would turn to the lecturer personally, who was usually cooperative and responded quickly."

On the negative side, participants addressed the F-Relatedness between students and the LMS instructor. Some students claimed that not seeing the lecturer reduced their motivation to engage actively within the LMS. Salam said, “My classmates did not want to work on the LMS at all because they never saw the lecturer.” This was despite the lecturer explaining the situation and creating a WhatsApp group for communication. Salam added, “The lecturer explained to us that we wouldn’t see him during learning in Moodle, so he created a WhatsApp group for us to ask questions. The lecturer also offered the possibility of holding a Zoom meeting if needed.” However, Salam commented that “. . . classmates behaved with a kind of indifference and lack of seriousness.”

Amir described the need for more communication with the lecturer, which gives the learned topic greater importance. He said, “The lecturer used to specify the tasks that had to be completed, but did not communicate with us adequately. We did not discuss matters with the lecturer. I felt the need to discuss matters with the lecturer.” Amir was even willing to settle with synchronous meetings, saying: “I preferred that the lecturer met us through Zoom and not only taught us through Moodle.” He said the reason behind his preference was that “this would give the topic more importance and make us feel more committed.” It can be claimed that the previous reason mentioned by Amir is motivational in nature.

Some students also described their need for the accompanying LMS lecturer to be the same as the one teaching them face to face. Sherine stated, “I prefer the lecturer who teaches us face to face be the same one accompanying us in the LMS system. This helps him/her get to know us and our abilities more deeply.”

Participating students also addressed the F-Relatedness among themselves. The social relationship among students appears to have led to classmates requesting quiz answers from each other instead of making the effort to learn on their own through the interactive LMS, even though participating students were aware of its positive and negative effects on students’ English language learning through the online system. For instance, Sana said, “Most students would ask their classmates to send the answers through the class WhatsApp group.”

The final exam was one of the main factors behind students’ decision not to cheat, showing the importance of the final exam in online and blended learning. As Ryan described it: “The presence of a final exam forced students not to cheat.”

Competence

Participating students addressed the achievement of S-Competence in the interactive LMS. They described the development of their knowledge and skills through their work in the ESL course. Students mentioned the development of the following knowledge and skills: acquiring new vocabulary, reading comprehension skills, listening skills, and the ability to solve tasks quickly. Mona, for example, described the development of her vocabulary. She shared:

> I also acquired many new words using the LMS. Some questions referred to words that were close to each other in spelling, and the meanings appeared afterwards, so we had to match each meaning to the appropriate word. For example: tidy, tidy up, Ms., Mrs. So far, I remember the difference between “tidy up” and “tidy.” . . . If I encountered unfamiliar words on the LMS, I would jot them down, which enriched my vocabulary. The words that appear on the LMS are from our real life, so I felt their importance and made an effort to acquire them.

Mona’s description showed different aspects of the questions included in the e-program. Her description also showed that the questions motivated her to engage more in ESL learning through addressing the difficulties of ESL learners, answering matching questions, and gaining competence in vocabulary.

Participating students also talked about the impact of the e-program on their problem-solving speed, which involved competing with oneself. Ryan said, “I compete with myself through my work in the system to see if I can solve tasks quickly and correctly.” The ability to listen more than once to the passages was important too, as Sherine stated: “Through the LMS, you can listen to passages more than twice, which is different from the class conditions.” At times, LMS speed helped students overcome their concentration problems. As Sherine stated: “Also, my use of the LMS helped me focus more. I am a student with concentration problems, so it is difficult for me to focus on listening in class.”

The development of reading comprehension skills is a contribution to the competence of the participating students, besides text analysis. Participants emphasized that the passages enhanced their ability to analyze the text, while the questions helped them anticipate answers to similar questions. Ryan said, “Through the texts in the LMS, I improved my reading comprehension skills.” Sana said, “The passages helped me develop text analysis skills. By solving multiple passages on the system, I became able to anticipate questions in future passages.”

Participants additionally addressed the S-Competence achieved through autonomy. They mentioned that using the system developed skills on which the students chose independently to focus. Some students focused more on developing their listening skills, while others focused on improving their comprehension skills. The freedom to choose, provided by the system and the lecturer, allowed participating students to develop their weaker areas. Salam benefited especially from developing her listening skills by focusing on this aspect through her work in the system. In contrast, Amir focused on improving his reading comprehension skills, claiming that her linguistics knowledge did not develop. Additionally, Amir did not concentrate on improving her listening skills through her work in the system, stating:

> I did not improve my grammar skills because the lecturer did not ask us to answer questions in this area, and we did not address these skills in class. Also, I did not develop my listening skills because I am already good in this aspect.

Various reasons, including prior student knowledge, instructor requests, and the presented class topic, were behind students’ focus on a specific linguistic domain.

Participants also addressed the S-Competence achieved through system characteristics. One such characteristic is the system’s feedback. The students emphasized that the feedback provided by the website was important and helped them learn and increase their confidence in their English language skills. Amir said, “The feedback provided by the LMS helped me assess if I solved correctly, which increased my confidence in my English language skills.” Sherine added, “Through feedback, I got to know my mistakes, and this was very helpful.” Thus, the feedback helped the students achieve S-Competence through assessing the correctness of their problems solving, as well as increasing their confidence in this problem solving.

Participating students also mentioned that the E-program environment helped them have initial assessment of their knowledge before choosing the appropriate tasks for them. Salam said:

> I used the program to have an initial diagnosis of my abilities when I started using the LMS in my study of English. This helped me choose the tasks that matched my abilities, tasks that are not too easy nor too difficult.

Thus, this initial assessment motivated the students to learn ESL in terms of S-Competence.

Some students mentioned that the E-program context led to their F-competence, pointing out that some types of questions limited their freedom to formulate answers and reduced the possibility of developing their writing skills. In one case, students’ limited freedom pertained to open-ended questions, where students claimed the system did not accept correct answers in terms of content, that it was programmed to accept only one answer copied directly from the text. Sana emphasized:

> I could not write answers in my words; I was forced to copy answers from the text, which did not suit me. I answered correctly, but the system showed me that my answer was wrong due to the different phrasing.

In a second case, students' limited freedom pertained to their acquisition of new vocabulary, where only the first two letters of the word were shown. The students then had to identify the word. it was challenging, however, for students to determine the correct answer since it required a specific combination of letters.

Discussion

The present research studied preparatory-year students' motivation to learn English using an e-program. The results of the first research question (RQ1) indicated that the level of the six motivational components is normal. The normal level of the frustration components says that the e-program could lessen frustration of learning ESL. However, at the same time, the e-program did not result in high levels of motivation satisfaction.

Researchers have described students' learning in the technological environments and have given recommendations for such learning. Wei (2022) found that the literature indicates that in addition to being appealing, effective, and useful, digital instruments have the potential to increase learner motivation. The previous report could explain the normal level of motivation frustration but not motivation satisfaction.

The second research question (RQ2) studied whether the E-Ability background variable resulted in significant differences in the level of the motivational components among students in the preparatory year. The research results indicated that only the S-Competence component differs significantly over E-Ability. This significant difference was due to the significant differences between low and high E-Ability students, as well as between medium and high E-Ability students in favour of high E-Ability students. Initially, the research results indicated that the E-Ability variable did not result in significant differences in five of the six motivational variables, which means that the e-program motivated students from all E-Ability levels without any difference. This could be due to the encouragement of the various components of motivation by the program. First, the program encouraged the autonomous learning of ESL by the students, where they could choose to solve the type of question as well as the level of the question. In addition, the program facilitated the competency of students from all levels, as the students could start from a specific level, solve appropriate questions, and advance into a higher level.

The findings for RQ2 are in line with previous studies that showed improvement in students' learning when participating in online courses. Hadar and Genser (2015), for example, found that online learning resulted in improvements in the critical thinking of both low- and high-ability groups who studied English language, where this improvement occurred in three of the more concrete tasks. No improvement occurred in the fourth more abstract task for both ability groups.

Discussing the special case of S-Competence, where high-ability students perceived more competence than the low- and medium-ability students, Hornstra et al. (2022) found that high-ability students preferred tasks with a high level of abstraction, complexity, and openness, which indicate their preference of tasks with high competence. This finding indicates that the e-program succeeded in providing the high-ability students with activities that required their S-Competence to prevail more than low- and medium-level E-Ability students. This result is due to the variability of the program, as it included different levels of questions.

The third research question (RQ3) studied whether there were significant differences in the motivation components among preparatory-year students due to the C-Ability background variable. The research results indicated that only autonomy had significant differences among students due to C-Ability. The post hoc comparisons showed that these significant differences came from the significant differences between low C-Ability and high C-Ability students in favour of high C-Ability. So, low C-Ability did not allow the students autonomy as it did for high C-Ability students. Thus, high C-Ability is a tool for strengthening students' online learning, here in English language.

High C-Ability could be associated with previous experience with technology and online learning. Shen et al. (2013) said that students who had previous experience with online learning had more self-efficacy in this learning, which is related to the student's perception of ability related to online learning and to learning with technology. Moreover, the high C-ability could be associated with the ability of the learner to navigate the e-program, using Moodle platform, which could help this learner arrive at the type and level of problem that they wish to solve. In addition, this ability to navigate the program facilitated the learner's autonomy as well as their competency to learn in the electronic environment.

All previous studies encouraged the motivation of the learner to learn ESL in terms of SDT theoretical framework. We should say that this facilitation and encouragement was limited to a normal level, so developers of future e-programs need to pay attention to how they can encourage further the component of motivation when they construct electronic ESL units.

The qualitative results indicated positive and negative aspects of the e-program as perceived by the preparatory-year students. The positive aspects strengthened the students when learning ESL, while the negative aspects weakened them in terms of satisfaction and frustration from each of the three components of motivation.

Researchers have demonstrated that satisfaction of needs has benefits for motivation, growth, function, health, and wellness across a wide range of life experiences (Olafsen et al., 2021). In this study, we can talk about wellness across online ESL activities, as the e-program has been perceived by the preparatory-year students as contributing to their wellness in learning ESL but to a normal level only, possibly due to the frustration from the e-program, where this frustration limited their autonomy, relatedness, and competence.

Conclusions

In this study, students described various aspects of competence development through their work in the interactive LMS. They highlighted the importance of autonomy, relatedness, and competence, as well as the characteristics of the system in enhancing their language skills. They also highlighted, however, certain frustrations related to specific question types, which limited their freedom to formulate a clear response. E-programs need to ensure students' freedom in giving and formulating their own answers as they see appropriate, which would motivate them to engage in solving the ESL questions and activities.

The results highlighted that students' limited freedom pertained to open-ended questions. This is where students described that the system was not accepting any correct answer in terms of content. Developers of e-programs need to take care to allow the acceptance of any correct answer, not only through "copy and paste" responses.

The e-program properties, as perceived by the preparatory-year students, were behind the level of motivational components. Therefore, it is suggested that future e-programs for ESL learning need to account for the constraints mentioned by the participants of the present study to improve the quality of learning of ESL. In general, future e-programs need to consider each one of the six motivational components, in the frame of SDT. This consideration would increase the motivation of the students to learn ESL in online and blended contexts. As an example, participants reported having limited freedom with open-ended questions, claiming that the system did not accept correct answers in terms of content. In future e-programs, open-ended questions need to accept student-created responses, which would encourage the autonomy of students' learning in such programs. Additionally, intrinsic and extrinsic motivation, human needs, and the result of self-determination, high-quality learning, conceptual understanding, and enhanced personal growth and adjustment could be looked at in future research. Future research could specifically study the previous variables in relation to online and blended learning, especially in the ESL context. Relationships between these variables can also be studied when the context includes an e-program.

Limitations and Recommendations

In the present research, the qualitative part of the study complemented the quantitative part, which was the primary part of the research. One limitation of the present research is that the number of interviewed participants is few (nine students). It is recommended, therefore, that future comprehensive qualitative research be done on the same topic.

In the present research, we used the SDT theoretical framework to describe the preparatory-year students' experiences of learning ESL using an electronic program. SDT is one strong aspect of the present research, although it is recommended to study similar phenomena using other motivational theories such as the reversal theory (Apter & Desselles, 2019).

The present research focused on preparatory-year students' motivation to learn ESL or other languages in a blended context. It was found that the SDT theoretical framework—or other frameworks, such as the reversal theory—could be utilized. These frameworks could shed light on different constructs that are part of the specific motivational theory. It would be interesting to study this motivation using the same or other theoretical frameworks of motivation, in online synchronous contexts, such as those using the Zoom platform or other platforms.

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Appendix

Motivation Questionnaire Adapted to Present Research Context

AS1	When learning English with the e-program, I feel a sense of choice and freedom in the things I undertake.
AS2	When learning English with the e-program, I feel that my decisions reflect what I really want to learn.
AS3	When learning English with the e-program, I feel my choices express who I really am.
AS4	When learning English with the e-program, I feel I have been learning what really interests me.
AF1	When learning English with the e-program, most of the things I do feel like “I have to.”
AF2	When learning English with the e-program, I feel forced to learn many things I wouldn’t choose.
AF3	When learning English with the e-program, I feel pressured to learn too many things.
AF4	When learning English with the e-program, my learning activities feel like a chain of obligations.
RS1	When learning English with the e-program, I feel that I have the opportunity to collaborate with my classmates.
RS2	When learning English with the e-program, I feel connected with my classmates.
RS3	When learning English with the e-program, I feel close and connected with other classmates.
RS4	When learning English with the e-program, I experience a warm feeling with my classmates.
RF1	When learning English with the e-program, I feel excluded from other students.
RF2	When learning English with the e-program, I feel that my classmates are distant.
RF3	When learning English with the e-program, I feel that my classmates do not want to work with me.
RF4	When learning English with the e-program, I feel the relationships with my classmates are superficial.
CS1	When learning English with the e-program, I feel confident that I can learn well.
CS2	When learning English with the e-program, I feel capable at what I learn.
CS3	When learning English with the e-program, I feel competent to achieve my learning goals.

CS4	When learning English with the e-program, I feel I can successfully complete difficult tasks.
CF1	When learning English with the e-program, I have doubts about whether I can learn things well.
CF2	When learning English with the e-program, I feel disappointed with my performance.
CF3	When learning English with the e-program, I feel insecure about my abilities.
CF4	When learning English with the e-program, I feel like a failure because of the mistakes I make.