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The constructivist learning environment and its impact on enhancing the efficiency of blended learning: An analytical study of the opinions of a sample of students of Najaf vocational preparatory school for boys in Najaf Governorate

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Abstract
The current research aims to know the nature of the relationship between the built-in learning environment and the blended learning for students, as the research was applied to a sample of students of Najaf Vocational Preparatory School for Boys in the Al-Najaf Governorate, and a random sample of (210) students was selected. The research seeks to test the correlation and effect to show the relationship between the variables, and several statistical tests were used to process the data using the statistical program (SPSS VR.23). The importance of the current research lies in the limited studies that dealt with the relationship between the research variables (constructive learning environment and blended education (hybrid) for students), as well as the attempt of the current research to study and address a real problem that directly affects students in Najaf Vocational Preparatory School for Boys in Najaf Governorate. In the current research, a set of conclusions and recommendations were reached, including the existence of a statistically significant effect relationship between the variables of the current research. The school administration in the organization in question must meet the needs of the students in order to enhance the blended learning process.

Keywords: Constructive learning environment, blended learning, teachers, students.

1. Introduction
"The most important attitude that can be formed is that of desire to go on learning".

(John Dewey)

The idea of the constructivist learning environment stems from the educational imperatives of the likes of John Dewey, Jean Piaget, Lev Vygotsky, that learning is an active process of building knowledge based on the experiences of the learner and this building of knowledge is subjective and metacognitive (Von Glasersfeld, 1989:162) [1]. Constructivism theory focuses on the learner's real-world experiences, prior knowledge, mental structures and beliefs, and emphasizes the construction of knowledge and purposeful context. Therefore, a constructivist learning environment encourages learners to interact with knowledge and with each other using different tools and emphasizes a learning environment where learning takes place rather than the teaching itself. He also stated that in a constructivist learning environment, the teacher has to act as a facilitator and guide learners to achieve learning goals (Cetin-Dindar, 2015:43) [4].

In the same context: (Saboowala & Manghirmalani-Mishra, 2020:2) [22] explains the changes taking place in the country during the past hundred years, as well as changes taking place in modern learning trends, in which non-traditional methods of teaching and learning are encouraged. Apart from this the COVID-19 pandemic that has hit the world with increasing severity since January 2020 has damaged the education system in general, the impact of COVID-19 has been enormous on the education sector. Face-to-face learning has moved to online learning completely, which goes along with blended learning. Therefore, attention must be paid to the educational environment in which hybrid (blended) learning is relied upon, which provides possible solutions during the pandemic (Sethy, 2008:28) [23].

Hence the idea of the current research to test the constructivist science environment and its role in enhancing the efficiency of hybrid education. As the current research consists of four main sections, the first topic presents the research methodology, the second topic deals with

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the theoretical framework, the third topic includes the practical aspect, and the last topic includes conclusions and recommendations.

The first topic: Research methodology
First: Research problem
Distance education has always been firmly established in most countries of the world, and e-learning initiatives have been emerging for more than a decade, but some notable achievements have been made in distance education. Especially at the end of 2019, when the Corona virus appeared to us, which quickly swept the world and transferred education from face to face to e-learning, education administrators have long been aware of the multiplier effects of accessing learners through various media: the written word, radio, television, and the Internet (Atef & Medhat, 2015:361) [2]. However, there are many problems for applying blended learning such as: limited internet access and web browsing a bit ambiguous for some, and for many teachers and trainers, the Blended Learning portal provides innovative learning solutions through an effective blend of traditional classroom teaching with mobile learning and Online Activities (Singh, 2021:8) [27].

The constructivist learning environment theory initially suggests that the social and cultural context in which the teaching and learning process takes place is another critical aspect that shapes knowledge formation (Mohammed & Kinyó, 2022:3) [18]. Thus for the sociocultural situation, solid knowledge is built through the formulation of meaning on the basis of what has already been learned through previous life experiences (Paily, 2013:40) [21]. Each stage in the teaching and learning process had a purpose related to presenting the outcome of the activity, such as preparation for assignments, access to educational materials and extracurricular activities, and in-depth peer and group discussion. Determining right and wrong and subject content are necessary conditions for the social structure of learning; Moreover: all these learning actions or stages require active cooperation among learners, and this cooperation is of paramount importance during the learning process (Cetin-Dindar, 2015:236) [4].

Through the foregoing, the current research seeks to provide an answer to the research questions through the cognitive and empirical content of the study as follows: -
1. Indicating the extent of the school's interest in the students' constructivist learning environment.
2. Knowing the level of evaluation of the research sample members of the blended learning in the school of the research sample.
3. How does blended learning and the constructivist learning environment in the school affect the research sample?

Second: The importance of research
1. The scarcity of field studies that dealt with the relationship between the constructivist learning environment and the blended learning, making it a first attempt in the Iraqi and Arab environments that study the relationship between these variables and benefit

from their results.
2. Providing a theoretical framework for the research topic (constructive learning environment and blended learning) by presenting a summary of the researcher's ideas in this field.
3. Measuring the extent to which the constructivist learning environment is achieved in the organization in question (Najaf Vocational Preparatory School for Boys in Najaf).
4. Knowing the extent of the impact of the dimensions of blended learning (online learning, classroom learning, online interaction, technology, learning flexibility, lesson management) on the performance of students in the research organization.

Third: Research objectives
1. Determining the extent to which students in the organization under consideration are aware of the dimensions of the constructivist learning environment.
2. Discovering the extent of awareness of the students in the organization under consideration to remove the blended learning.
3. To test the relationship of the influence of the constructivist learning environment and blended learning, and accordingly to the answers of the students in the organization of the research sample.

Fourth: The hypothetical research scheme
Based on the theories that tried to explain the relationship between the constructivist learning environment and the blended learning of students, including constructivism theory, education theory, activity theory and cognitive theory. These theories show that students strive to obtain the process of acquiring knowledge and work to transfer, enhance and disseminate it (Noel, 2015:619) [20] and (Chisanu *et al*., 2012:3424) [5] Come.

Fifth: Research hypotheses.
The current research is based on several impact hypotheses, as follows:

Impact Model Hypotheses: The main hypothesis: "There is a significant influence relationship between the constructivist learning environment with its combined dimensions and the blended learning with its combined dimensions". Five sub-hypotheses are derived from this main hypothesis:
1. **The first sub-hypothesis:** The dimension of personal suitability is morally affected by blended learning.
2. **The second sub-hypothesis:** The dimension of uncertainty affects the blended education morally.
3. **The third sub-hypothesis:** The dimension of the critical voice has a significant effect on blended learning.
4. **Fourth sub-hypothesis:** The dimension of joint control significantly affects blended learning.
5. **The fifth sub-hypothesis:** After negotiation, the student has a moral effect on blended education.
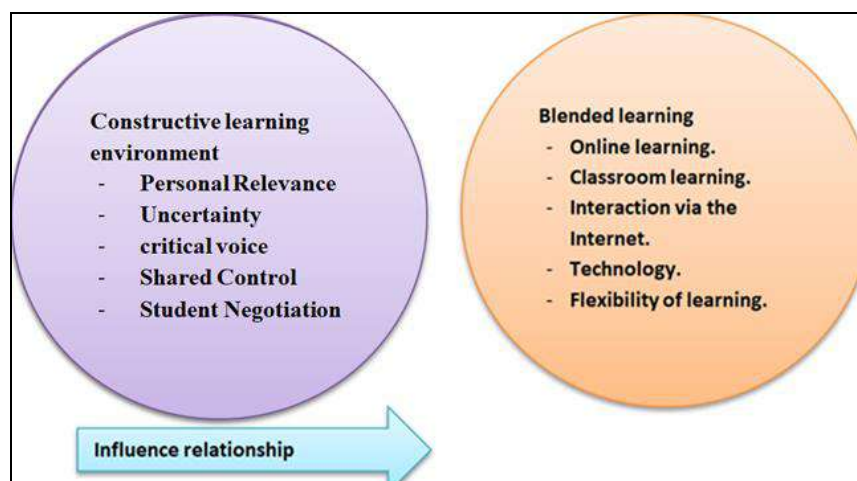
Source: Prepared by the researcher.

Fig 1: Hypothetical chart

Sixth: Research Scale.
The current research adopted a five-point Likert scale to measure the level of respondents' responses, as the researcher used a scale (strongly disagree, disagree, neutral, agree, strongly agree) to measure the variables of the current research and for the purpose of measuring the constructivist learning environment was based on five dimensions They are (personal fit, uncertainty, critical voice, shared control, student negotiation) by adopting measures (Cetin-Dindar, 2015) [4].

For the purpose of measuring blended learning in its six dimensions (online learning, classroom learning, online interaction, technology, learning flexibility, lesson management), the (Singh, 2021) [27] scale was adopted.

Seventh: The research community and its sample
A sample of (650) students of Najaf Vocational Preparatory School for Boys in Najaf was selected. In order to represent

the target population with high accuracy and away from bias, the researcher adopted the simple random sample and the statistical table for determining the sample size (Krejcie and Morgan, 1970:608) [17] was used. Therefore, the sample size is (242) students. After that, (225) questionnaires were retrieved, as the researcher found that the questionnaires with incomplete answers were (15) questionnaires, and thus the number of valid questionnaires for statistical analysis was (210) questionnaires, i.e. an average of (93.33%).

Eighth: The stability of the questionnaire.
To verify the stability of the questionnaire, Cronbach's alpha test was adopted. The results showed in the following table that the total stability of the independent variable (.791) and the dependent variable (.899) indicate that the percentage of stability is high and it meets the purposes of the research (Bindl & Parker, 2010) as shown in following:

Table 1: Stability coefficient:

N	Variables		Number of Paragraphs	Cronbach's alpha Coefficient of Dimensions	Cronbach's alpha coefficient for variables
	Main	Sub			
1	Constructive learning environment	Personal Relevance	6	0.728	0.791
		Uncertainty	6	0.770	
		critical voice	6	0.790	
		Shared Control	6	0.739	
		Student Negotiation	4	0.789	
2	Blended education	Online education	7	0.765	0.899
		learning in class	5	0.788	
		Online interaction	7	0.784	
		technology	4	0.798	
		Learning flexibility	4	0.778	
		Study management	6	0.780	

Source: Prepared by the researcher based on the program outputs (SPSS VR.23)

Ninth: Statistical Methods
The current research adopted the questionnaire as a main tool for data collection, which includes demographic data about the respondents and data related to the paragraphs of the variables. The data was analyzed in the statistical analysis program Vr-23) IPM SPSS (Hair *et al*., 2010) [11] and as follows:

Descriptive statistics: It included the arithmetic averages for arranging the questionnaire items according to the

relative importance of each item and a dimension of the variables, as well as extracting the standard deviation to find out the homogeneity and consistency of the answers of the sample members about their arithmetic mean.

The second topic - The theoretical framework
First: The concept of the constructivist learning environment
Constructivist theory has its roots in a number of disciplines, including philosophy, anthropology,

psychology, sociology, and education. The essential element of construction is the active construction of new knowledge by the learner based on their experiences. In the case of constructivist learning, learners bring unique prior knowledge and beliefs, and knowledge is constructed Uniquely, in multiple ways, using a variety of tools, resources, and contexts (Paily, 2013:39) [21].

So the learning environment in the classroom, sometimes referred to as the learning environment or the classroom climate, is the social environment in which learning takes place, and these learning environments are social-psychological contexts or determinants of learning (Fraser, 1994:78) [8]. Several studies have indicated that the learning environment in the classroom is a powerful factor in determining and predicting students' attitudes toward science (Simpson, & Oliver, 1990:12) [26].

Johnson & McClure (2004:67) [15] argue that the learning environment in the classroom was the strongest predictor of attitude toward knowledge in all grades. Based on the studies presented by the likes of (Murphy, 1997) [19], (Jonassen, 1991) [16], and (Honebein, 1996) [13], the researcher has summarized the characteristics of the constructivist learning environment and these characteristics are as follows:

1. Multiple perspectives and representations of concepts and content are presented and encouraged.
2. The student elicits goals and objectives or negotiates with the teacher or the system.
3. Teachers act as guides, monitors, trainers and facilitators.
4. Activities, opportunities, tools, and environments are provided to encourage metacognition, self-analysis, organization, reflection and awareness.
5. The student plays a central role in mediating and controlling learning.
6. Learning situations, environments, skills, content and tasks are relevant, realistic, authentic and represent the natural complexities of the "real world".

Based on the above: Emphasizes (Murphy, 1997:56) [19] in the constructivist learning environment, the role of the teacher is to facilitate and direct the process of building knowledge by engaging students in meaningful learning, and the teacher must design and provide educational activities and experiences characterized by cooperation, cooperation, multiple perspectives and examples of Real world, scaffolding, self-reflection, multiple representations of ideas, and social negotiation.

Wang (2009:12) [37] defines a constructivist learning environment as "a place where learners can work together and support each other as they use a variety of tools and information sources in their pursuit of learning objectives and problem-solving activities." The same is evident from the views expressed by Jonassen *et al*., 1991:34 [16] "Constructive learning environments engage learners in building knowledge through collaborative activities that incorporate learning in a meaningful context and by reflecting on what has been learned through conversation with learners. others.

Therefore, the researcher identified seven educational goals that emerge from the perspective of the constructivist learning environment, and these goals are:

1. Provide expertise in the knowledge-building process.
2. Providing expertise and appreciation for multiple points of view.
3. Embed learning in real and relevant contexts.
4. Encouraging ownership and expression of opinion in the learning process.
5. Embed learning in the social experience.
6. Encourage the use of multiple forms of representation.
7. Encouraging self-awareness in the process of building knowledge.

Second: The dimensions of the constructivist learning environment
Researchers study different types of constructivist learning environment techniques used in a variety of contexts, so (Cetin-Dindar, 2015:234) [4] identified five basic dimensions of the constructivist learning environment based on a study (Taylor *et al*., 1997) [33], which are explained below. :

1- Learning about the outside (personal Relevance)
Taking into account students' prior knowledge, we want teachers to expand their pedagogical focus beyond students' abilities to accurately remember previously learned formulas, rules, and laws, and account for the rich tapestry of experiences students bring with them from outside (Taylor *et al*., 1997:295) [33]. Thus (Cetin-Dindar, 2015:234) [4] points out that the Personal Fit Scale is concerned with the interrelation of school science with students' out-of-school experiences, and we are interested in teachers who use students' daily experiences as a meaningful context for developing students' scientific knowledge.

2- Uncertainty
A major limitation of constructivist educational reform is the popular myth that science is a universal, monocultural endeavor that provides accurate and specific knowledge of objective reality (Cetin-Dindar, 2015:235) [4]. The objective certainty myth suggests that scientific knowledge exists independently of collective human experience and has a privileged position (Johnson & McClure, 2004:69) [15]. By contrast, we want teachers to provide opportunities for students to experience the uncertainty and limitations inherent in scientific knowledge (Taylor *et al*., 1997:295) [33]. The Uncertainty Scale is designed to assess the extent to which students provide opportunities to experience scientific knowledge as arising from theory-based research, including human experience and values, evolutionary and non-constitutional, and culturally and socially specific.

3- Learning to Speak Out (Critical Voice)
Recognize that many teachers will feel constrained, at least in the short term, by their externally imposed interest in curriculum delivery and coverage of curriculum content (Taylor *et al*., 1997:295) [33]. This technical curricular concern therefore directs teachers' sense of accountability for curricular implementation away from the classroom and toward external curricula and assessment authorities (Johnson & McClure, 2004:68) [15]. However, we believe that teachers also should be accountable to their students for their educational actions. From a critical theory perspective that fosters an interest in student empowerment, we would like teachers to willingly demonstrate to the class their

pedagogical responsibility by promoting students' critical attitudes toward teaching and learning activities (Cetin-Dindar, 2015:234) [4]. The Critical Voice Scale assesses the extent to which a social climate has been created in which students feel it is legitimate and useful to question the teacher's pedagogical plans and methods, and to express concerns about any obstacles to their learning.

4- Shared Control
We are concerned, from a constructivist perspective, that students have opportunities to develop as independent learners (Johnson & McClure, 2004:69) [15]. We believe that this can be achieved in part by providing opportunities for students to exercise a degree of control over their learning that goes beyond the traditional practice of working "independently" in class on teacher-identified problem sets (Taylor et al., 1997:295) [33]. The Common Control Scale is concerned with inviting students to share control with the learning environment teacher, including formulating learning objectives, designing and managing their own learning activities, and defining and applying assessment criteria (Cetin-Dindar, 2015:233) [4]. The rationale for this scale fits well with the idea of a portfolio culture that places greater emphasis on students evaluating their conceptual development.

5- Student Negotiation
We recognize the importance of teacher-student negotiations, but in a constructivist learning environment we want to emphasize the importance of developing instructional strategies that promote teacher-student negotiations as a central activity in the classroom (Cetin-Dindar, 2015:234) [4]. The Student Negotiation Scale focuses on whether teachers' pedagogical interest extends beyond the traditional social activity of students helping each other find the right answer to a problem (Taylor et al., 1997:295) [33]. The scale assesses the extent to which students have opportunities to explain and justify their newly developed ideas to other students, to listen attentively and to think about the usefulness of other students' ideas and, in turn, to think critically about their viability, their own ideas.

Third: The concept of blended learning
"We live in an ever-changing world" (Sethy, 2008) [23], and during the past decades, the world of education has diversified with the rapid revolution and in computer and Internet technologies, which are generated and growing in an uncontrolled way, so new concepts are established and built in the world of education (Sethy, 2008:29) [23].

Therefore, the changing environment depends on the concept of blended learning, which is one of these methods that instills the method of online learning and so on. It is a methodology that was introduced more than a decade ago and is used in the field of education that combines (or blends) online learning with traditional classroom methods. Place-based (face-to-face learning) (Saboowala & Manghirmalani-Mishra, 2020:3) [22]. Blended learning was recognized in 2003 as "an effective mixture of different styles of instruction, teaching paradigms and learning styles" (Hirata & Hirata, 2008:23) [12].

In the same context: (Tolks et al., 2014:90) [34] pointed out that as blended learning is adopted by educational institutions around the world, there is an urgent need to examine the willingness of stakeholders in implementing this technology-assisted learning. Moreover, between (Stebbings et al., 2012:26) [30] it is also necessary to appreciate the ability of education directorates to design and implement blended learning courses that include effective teaching methods. And defined (Driscoll, 2002:2) [7] blended learning as a mixture of educational methods. On the contrary: (Delialioglu & Yildirim, 2007:135) [6] indicates that the systematic and strategic combination of ICT tools in teaching and academic courses offers a new way to approach educational goals, and this educational method has been called by many names: blended learning, intermediate learning, or instruction Hybrid, web-assisted help, or web-enhanced help.

On the other hand: (Tayebinik & Puteh, 2013:5) [32] shows the advantages of blended learning in parallel with the increasing use of information and communication technology in the educational environment, as the blended learning approach can be contributing tools to complete face-to-face experiences. Besides: points out (Graham, 2006:42) [10] Blended learning provides an active learning environment that is flexible in the use of resources for students and provides more time for faculty to spend with learners in small groups or even individually. Additionally: (Sharma, 2010:12) [24] Blended learning has the potential to change students' experiences and outcomes through learning. (Tang & Chaw, 2013:80) [31] Adds that blended learning is a resource-efficient methodology with the potential to support teaching and enrich students' learning experience.

Also, between Sharpe et al., 2006:35 [25], there are three ways that learning organizations can adopt the application of blended learning, and these methods are:

▪ Teaching materials are available online through the Learning Management System to complement the traditional teaching activities.
▪ Digital technologies and new teaching methods are introduced to learners for a radical learning experience.
▪ It is the use of digital technologies by the learners themselves.

Fourth: the dimensions of blended learning
A large number of studies dealt with the dimensions of blended education, so the dimensions were adopted below because they fit the current study environment, based on the study of (Singh, 2021) [27] and the study of (Birbal et al., 2018) [3], who in turn relied on the study (Tang & Chaw, 2013:82) [31], which included six dimensions through which blended learning was measured, as shown below.

1- Online Learning
Online learning gives learners more time to reflect on their responses in order to better express their ideas (Tang & Chaw, 2013:82) [31]. So this aspect of online learning caters to students who are introverted or uncomfortable with sharing their opinions in front of others in public (Howard, 2009:586) [14]. Previous studies have shown that students who prefer online learning feel they have a good time to think and respond to asynchronous discussions more effectively.

Whereas: (Singh, 2021:6) [27] pointed out, the blended

learning experience combines both offline and online forms of learning where online learning usually means "online or intranet" and learning takes place offline in a more traditional classroom environment.

2- Classroom learning
Classroom learning provides another means of learning in which students engage in spontaneous verbal communication in a permanent physical environment (Garrison & Kanuka, 2004:101) [9]. Scholars agree that the classroom community provides a sense of real and meaningful interaction between learners and teachers, something that online learning cannot replace (Howard, 2009:587) [14]. It shows (Tang & Chaw, 2013:82) [31] that students who have a greater desire for face-to-face interaction with other students and their lecturers are more likely to withdraw from online learning.

3- Online Interaction
Tang & Chaw (2013:82) [31] points out that interaction and discussion are important aspects of the learning process and should therefore be integrated into a blended learning environment. Suggestion (Garrison & Kanuka, 2004:102) [9] The possibility of conducting online interaction in the form of open dialogue or critical discussion through asynchronous web-based discussion forums etc. Reports indicate that blended learning provides a seamless collaboration platform for group learning.

4- Technology
Information technology is a major enabler of blended learning (Tang & Chaw, 2013:83) [31]. (Som *et al*., 2020:10) [29] stresses that digital tools can help build online communities across borders and time zones, which are more prevalent than traditional face-to-face communities. (Howard, 2009:588) [14] stated that easy access to digital technologies and good familiarity with them among learners is a prerequisite for the successful implementation of blended learning. Students embrace the possibilities offered by technology to allow them to participate in learning activities anytime and anywhere.

5- Learning Flexibility
As an increasing number of students assume multiple responsibilities, such as work and family commitments, the flexibility of learning allows students to balance their academic, work and family lives (Singh, 2021:8) [27]. Therefore, blended learning provides the advantages of time efficiency and ease of location for learners (Vaughan, 2007:12) [36]. Students can access educational materials on the web when needed. In addition, the built-in learning reduces commute time or reduces the need to find a parking spot during working hours.

6- Study Management
Tsai (2010:563) [35] describes this aspect as a self-organized learning process in which learners make an intentional effort to plan, manage and direct learning activities as well as share responsibility for learning with their teachers. He added (Tang & Chaw, 2013:84) [31] This is an important aspect that contributes to stronger learning motivation and better time management when studying online. Webbin (Smyth *et al*., 2012:465) [28] Blended learning provides the autonomy for students to be responsible in their own learning, which requires self-discipline and self-motivation.

The third topic: the practical aspect of research
First: descriptive analysis of the research variables
In this section of the research, a set of well-known and common tests will be used for descriptive analysis. This is to describe the opinions of the members of the Najaf vocational high school sample for boys, towards the research variables that were adopted in the current research, and as follows:

1. Descriptive analysis of the independent variable (structural learning environment)
Table (2) below shows the results of the descriptive analysis of the constructivist learning environment variable, which includes the arithmetic means, standard deviations, and the relative importance of the constructivist learning environment dimensions.

Table 2: Descriptive analysis of the constructivist learning environment variable

Dimensions	Sample	Mean	Std. Deviation	Percentage
Personal Relevance	210	3.69	0.813	74%
Uncertainty	210	3.78	0.722	76%
critical voice	210	3.86	0.690	77%
Shared Control	210	3.73	0.743	75%
Student Negotiation	210	3.90	0.640	78%
Total Constructive Learning Environment	210	3.79	0.722	76*%*

Source: Prepared by the researcher based on the results of Spss v.22.

As a result of the foregoing, the results of the descriptive analysis of the dimensions of the constructivist learning environment variable, which are shown in Table (2) above, show that there are different levels of its prevalence in the Najaf Vocational Preparatory School for Boys under study. And that the ordinal importance of the variable dimensions came with different and close values and levels from each other. Noting from the results also, the student's negotiation dimension is the most prevalent dimension, as it came with

an arithmetic mean of (3.90) and a standard deviation of (.640), with a relative importance of (78%). As for the personal suitability dimension, it was the least prevalent, as it came with a mean of (3.69) and a standard deviation of (.813) with a relative importance of (74%).

2. Descriptive analysis of the dependent variable (blended learning)

Table 3: below shows the results of the descriptive analysis of the blended learning variable, which includes the arithmetic means, standard deviations, and the relative importance of the blended learning dimensions

Dimensions	Sample	Mean	Std. Deviation	Percentage
Online education	210	3.21	0.703	64%
learning in class	210	3.30	0.609	*66%*
Online interaction	210	3.23	0.654	65%
technology	210	3.07	0.767	61%
Learning flexibility	210	3.10	0.754	62%
Study management	210	3.31	0.689	66%
Total blended education	210	3.20	0.696	64%

Source: Prepared by the researcher based on the results of Spss v.22

As a result of the foregoing, the results of the descriptive analysis of the dimensions of the blended learning variable, which are shown in Table (3) above, show that there are different levels of its prevalence in the Najaf Vocational Preparatory School for Boys under study. And that the ordinal importance of the variable dimensions came with different and close values and levels from each other. As we note from the results also, that the dimension of lesson management is the most prevalent dimension, as it came with an arithmetic mean of (3.31) and a standard deviation of (.689) and a relative importance of (66%). As for the technology dimension, it was the least prevalent, as it came with an arithmetic mean of (3.07) and a standard deviation of (.767), with a relative importance of (61%).

Second: Testing the research hypotheses.
In this section, the nature and level of influence between the main research variables will be identified. This will be done by testing the main effect hypothesis and its sub-hypothesis. Simple regression analysis will be performed among the main research variables. The slope coefficient, regression coefficient, and other data will also be extracted using the statistical program (SPSS v.22). It is worth noting that the acceptance or rejection of the tested hypotheses will depend on the level of significance assumed by the researcher (0.05).

1. Test the main effect hypothesis.
The main impact hypothesis of the current research states that: "There is a statistically significant effect of the constructivist learning environment in promoting blended learning in Najaf Vocational Preparatory School for Boys." After measuring the effect, the following results were shown in Table (4) below, as follows:

Table 4: Testing the effect of the constructivist learning environment in promoting blended learning.

Dependent Variable	Blended Education					
Independent variable	β	T Value	R^2	F value	Sig level	Result
Constructive learning environment	0.719	5.674	0.517	9.436	0.000	Accepted

Source: Prepared by the researcher based on the outputs of the program (SPSS V.22). N=210

Table (4) above shows that there is an effect of the constructivist learning environment in promoting blended learning, as the regression slope coefficient is (0.719), which is significant because the level of the achieved morale reached (.000), which is less than the level of morale assumed by the researcher (0.05). Also, the interpretation

coefficient (R2) has reached (0.517). This means that the constructivist learning environment explains (0.517) of the variance in the dependent variable blended learning, which is acceptable based on the calculated (F) value of (9.436), which is greater than its tabular value (4.00), and according to these results it is accepted This hypothesis is at the research level.

2. Test sub-hypothesis of the effect.
These hypotheses impose a statistically significant effect of the dimensions of the constructivist learning environment (personal fit, uncertainty, critical voice, shared control and student negotiation) in promoting blended learning. This means that the dependent variable blended learning is a real function of the independent variable dimensions of the constructivist learning environment, and that any change in the dimensions of the constructivist learning environment will lead to a change in blended learning. Table (5) shows the results of the sub-hypothesis test, which are as follows:

Table 5: Testing the effect of the dimensions of the constructivist learning environment in promoting blended learning.

Dependent variable	Blended education				
Dimensions of the constructivist learning environment	β	R^2	F value	Sig level	Result
Personal Relevance	0.690	0.476	7.212	0.000	Accepted
Uncertainty	0.724	0.524	8.446	0.000	Accepted
critical voice	0.687	0.472	7.567	0.000	Accepted
Shared Control	0.665	0.442	6.970	0.000	Accepted
Student Negotiation	0.707	0.500	7.885	0.000	Accepted
Main Hypothesis	0.719	517.	9.436	0.000	Accepted

Source: Prepared by the researcher based on the results of SPSS V.22. N=210

The results of Table (5) show the acceptance of all the sub-hypotheses emanating from the main hypothesis, regarding the effect of the dimensions of the constructivist learning environment in promoting blended learning. The results of Table (5) showed that all hypotheses are acceptable on the basis of the level of significance (0.000), which is less than the level of significance assumed by the researcher (0.05). In addition, the calculated (F) values for the sub-hypotheses support the acceptance of these hypotheses, because all the calculated (F) values for the sub-hypotheses have exceeded their tabular value of (4.00). As a result of the above, all sub-hypotheses are accepted at the research level.

The fourth topic - conclusions and recommendations
First: The conclusions
1. The organization in question depends on the constructivist learning environment, so it is necessary to

provide a supportive environment and to emphasize learning and awareness to reach the blended learning process in a way that achieves positive learning to build a constructivist learning environment.

2. The constructivist learning environment works on the process of enhancing and raising the efficiency of blended learning in the research organization, by raising the levels of students.

3. It is adopted through the results of the statistical analysis to accept all the hypotheses of the impact of the dimensions of the constructivist learning environment in the blended education.

4. The blended learning dimensions achieve efficiency, interaction and flexibility among students by saving time and effort for students.

Second: Recommendations

1. Attention should be paid to the dimensions of the constructivist learning environment because it leads to an increase in the efficiency of the integrated learning in the research organization and raise its efficiency.

2. The organization in question should promote attention to the dimension of personal suitability for students because it works for students to learn how education can be a part of their lives outside of school.

3. It is possible to pay attention to the dimensions of blended education because it leads to providing better opportunities in achieving the efficiency of education in advanced technology.

4. It is necessary for the organization in question to raise the efficiency of the teaching staff when using the technological aspect in the field of education.

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