

The Connectivist Model and Virtual Learning Networks: Experiences in Second Language Learning At a Remote Distance

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Abstract

The objective of the study was to determine the results of the perception of the connectivist pedagogical model in English students of a virtual learning network (WhatsApp). In this sense, a descriptive research was carried out, following the hypothetical-inductive method. A questionnaire based on a Likert scale, which measures the perception of connectivism, was used to obtain data. The results showed a positive perception on the part of the respondents in most of the statements. From the results obtained in the different dimensions, it can be assumed that connectivism can enhance language learning due to its high acceptance, especially in the dimensions of teacher and student role with an average of 55.94% and 52.24% respectively in the agree scale. In addition, it is necessary to propose actions for the incorporation of technologies by teachers in the classrooms and the correct equipment of the institutions, as well as the training of teachers and the creation of study habits through virtual learning networks.

Keywords: Connectivism; e-learning; English language learning; student perceptions.

1. Introduction

Currently, technology has caused changes in the way people learn and relate to others (Vinueza & Simbaña, 2017), generating challenges to the teaching practice by investigating new educational theories according to the actual demand framed in the globalization and internationalization of knowledge (Tight, 2021); in order to serve as a guide for the improvement of teaching. It is evident the positioning of the connectivist theory in the teaching of any subject as the main characteristic of learning from virtuality, as argued by the re-searchers Vallejo et al. (2019), considering this theory as one of the main ones in the field due to the influence of technology in the educational process.

For Siemens (2005), the starting point in the connectivist learning theory is the individual, since individual knowledge is shaped by a network that by interacting with others helps the growth of networks, benefiting himself and the outside group. In this way, this learning cycle helps to keep the connections up to date.

Similarly, Siemens argues that there are eight principles that characterize the Connectivist model and differentiate it from others, which can be seen in Figure 1.

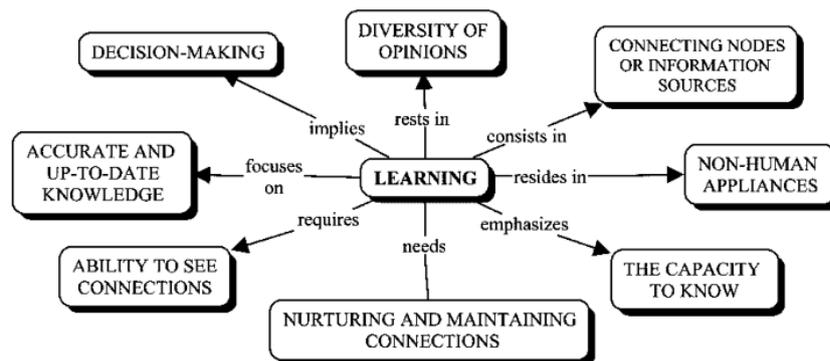


Figure 1. Principles of Connectivism according to Siemens
Source: Adapted from Siemens (2005).

Thus, through the principles of connectivism it can be understood that the theory is focused on learning through discussion and communication of ideas among several individuals, generating enriching and updated information nodes. In addition, it highlights the importance of the ability to detect the connection between different information or ideas with others, more than the accumulation of knowledge, since without this ability learning would be disconnected and could not be considered meaningful.

Solórzano & García (2016), highlight the importance of learning networks in the application of the connectivist theory, because they help students to develop competencies in an environment of collaboration and knowledge exchange. Learning networks enrich learning experiences in an informal way, however, it is also beneficial in the formal educational environment.

On the other hand, in the research by Valencia Ortiz et al. (2020), it was shown that students who take remote classes are the ones who make the most use of social networks to achieve learning objectives. Therefore, we should reflect on the beneficial impact that the application of social networks and the Internet as training tools in formal classes can have.

Nowadays, the environment for the development and application of the connectivist theory is propitious; and without knowing it, many people have bet on virtual learning and learning networks. After more than a year of online learning experience, it is necessary to know the perception of the people who bet on educational networks based on connectivism, which can be answered through the general objective of the research which is focused on determining the student perception regarding the application of connectivism, and specifically to answer if connectivism is perceived as a beneficial theory for learning English.

2. Method

2.1. Design

The research was non-experimental because the object of study was not manipulated during the investigation. It had a quantitative approach due to the use of numerical data collection with the help of statistics in order to test the research hypothesis (Lima & Araujo, 2018). In addition, the research worked under a descriptive research design since the main objective of the study is to specify the characteristics of the sample under analysis.

2.2. Population and sample

The study population consisted of English language learners in a learning group through the WhatsApp social network. Such group, for the year 2020, consisted of 220 participants. The study sample corresponds to 140 students of different ages and countries as shown in the following figures:

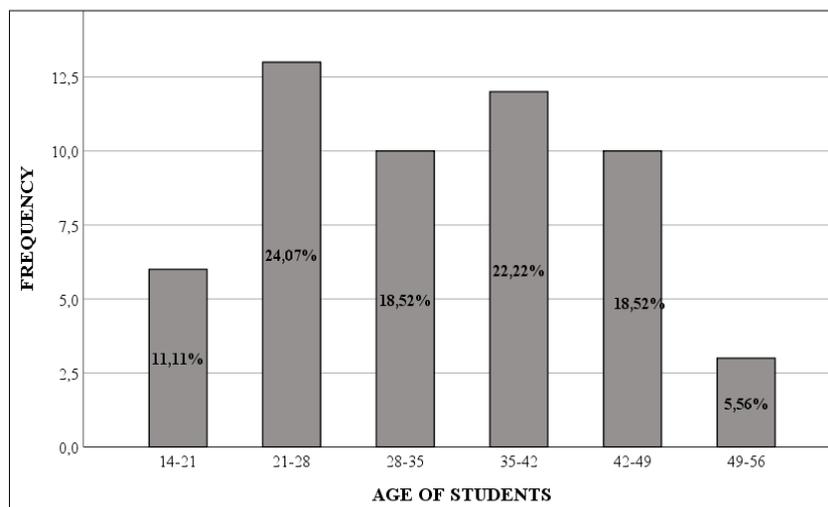


Figure 2. Age of surveyed students of the English study group from WhatsApp social network.

Source: Data collected through the application of the survey

Figure 2 shows the percentage of students surveyed according to their ages. A higher percentage is perceived with 24.07% in students from 21 to 28 years old, while the lowest percentage is 5.56% represented by students from 49 to 56 years old. It can be inferred from the figure that people of adult age seem to be more interested in learning English, being the average age of approximately 32 years old.

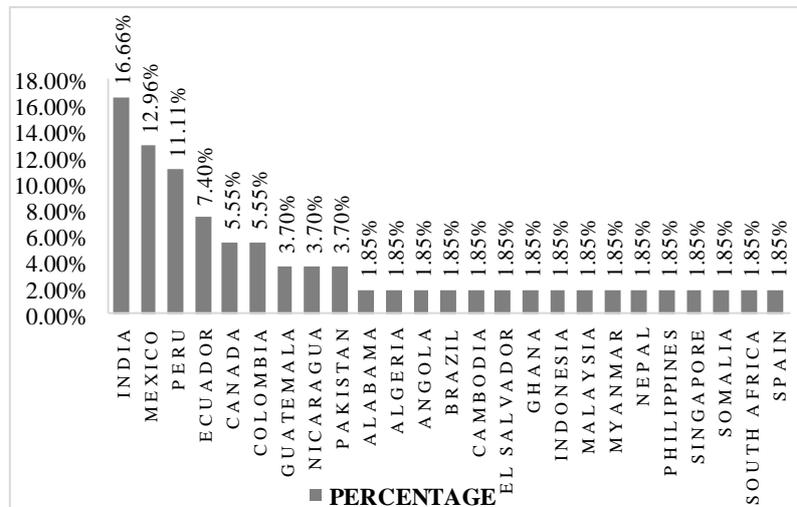


Figure 3. Country of origin of students surveyed from the English study group from the WhatsApp social network.

Source: Data collected through the application of the survey

Figure 3 shows the nationality of the students surveyed. The highest percentage with 16.66% is carried by Indian students, followed by 12.96% of Mexican students. It can be seen that the majority of respondents come from American countries, and in second place from Asian countries.

According to Sloep and Berlanga (2011), the objectives of a learning network for the acquisition of competencies are the following:

- To exchange experiences and knowledge with others.
- Working collaboratively on projects (e.g., innovation, research, jobs).
- Creating working groups, communities, discussions and congresses.
- Offer and receive support to/from other users of the learning network (such as questions, comments, etc.).
- Evaluate themselves and others, search for learning resources, create and elaborate their competence profiles.

2.3. Techniques for data analysis

2.3.1. Techniques

Questionnaire technique was used to measure the level of perception about the connectivist model in English.

2.3.2. Instruments

A survey was applied through the Likert scale design considering the following dimensions and indicators:

Dimension 1: Principles of connectivism. Demonstrates positive or negative perception according to the principles of connectivism proposed by Siemens.

Dimension 2: Teacher’s role. Demonstrates positive or negative perception according to the role of the teacher in connectivism.

Dimension 3: Student’s role. Demonstrates positive or negative perception according to the student's role in connectivism.

Dimension 4: Limitations. Demonstrates positive or negative perception regarding limitations in the application of connectivism.

2.3.3. Measurement scale

In order to obtain data about the perception of students related to the connectivist model, a questionnaire was taken through the Likert scale. The categories that were considered are the following: Strongly agree, agree, neutral, disagree, and, strongly disagree. Due to the different characteristics of the students, the survey was taken in English.

2.3.4. Data analysis

The data was collected personally. After a survey by google forms, results were observed using bar graphs and double entry tables processed by Excel and SPSS 21 programs.

2.3.5. Instrument reliability

Based on George and Mallery (2003) state that the internal consistency method of Cronbach's alpha allows the reliability of the measurement instrument through a number of items that will measure the theoretical dimension, through the application of a pilot test the result obtained was 0.88, which means that the instrument applied in this variable is good.

3. Results

Table 1. Respondents' perception of the principles of connectivism.

Dimension 1: Principles of Connectivism	SD	D	N	A	SA	Total
1. I learn English better when I use forums and social networks.	0.00%	3.70%	16.70%	59.30%	20.4%	100%
2. I think that the information provided by the Internet is enough to study English on my own.	0.00%	29.60%	20.40%	44.40%	5.60%	100%
3. I think that it is not necessary to memorize in English classes, but to reflect on what is learned.	0.00%	13%	20.40%	42.60%	24.10%	100%
4. I feel better when I learn English through technology than from physical books.	0.00%	22.20%	33.30%	31.50%	13%	100%
5. I think I can learn English better in virtual classes than in face-to-face classes.	9.30%	31.50%	27.80%	24.10%	7.40%	100%

Source: Data collected through the application of the survey

Note: SD = Strongly disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly agree

Table 1 shows the students' perception of the principles of Connectivism proposed by Siemens. The statement that obtained the highest percentage of approval was item 1 with 79.70% between strongly agree and agree; on the other hand, the statement that obtained the lowest positive percentage was item 5 with 40.80% between strongly disagree and disagree. From the above, it can be inferred that English language learners are in favour of the use of social networks and forums as a good option for learning a language; however, the respondents also demonstrate that virtual English classes are not enough for them through their position in disagreement in the fifth statement

Table 2. Respondents' perception of the teacher's role in connectivism.

Dimension 2: Teacher's role	SD	D	N	A	SA	Total
6. I think teachers should promote the use of technology and web pages in English classes.	0.00%	0.00%	7.40%	66.70%	25.90%	100%
7. I think teachers should provide virtual resources, applications and games to learn English better.	0.00%	1.90%	7.40%	53.70%	37.00%	100%
8. I think teachers should teach what information and websites on the Internet are reliable for learning English.	1.90%	4.00%	7.40%	55.60%	31.50%	100%
9. Teachers should promote autonomous learning in English language learners.	0.00%	1.90%	18.50%	46.30%	33.00%	100%
10. I think teachers should teach how to organize and apply information found on the Internet about the English language.	0.00%	1.90%	9.30%	57.40%	31.50%	100%

Source: Data collected through the application of the survey

Note: SD = Strongly disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly agree

Table 2 shows the perception of the respondents regarding the teaching role in connectivism. The item that obtained the highest positive score was item 6 with 92.60% between strongly agree and agree, in contrast, the item that obtained the lowest positive percentage when compared was item 9 with 79.30% between strongly agree and agree. However, all items obtained significant positive percentages, so it can be inferred that the respondents show high expectations regarding the teaching role and its performance in English classes, thus requiring the teacher to promote the use of technology, games and to provide students with web pages that can help them develop their autonomous learning in English.

Table 3. Respondents' perception of the student's role in connectivism.

Dimension 3: Student's role	SD	D	N	A	SA	Total
11. I think English language learners should seek to communicate and share experiences in English with others virtually.	0.00%	0.00%	7.40%	66.70%	25.90%	100%
12. I think English learners should be motivated and try to learn the language on their own.	0.00%	1.90%	11.10%	46.30%	40.70%	100%
13. I think English language learners should try to connect the new information they are learning with their prior knowledge.	0.00%	0.00%	7.40%	55.60%	37.00%	100%
14. I think students should recognize that group learning is better than individual learning in English classes.	0.00%	0.00%	18.50%	51.90%	30.00%	100%
15. I think students should recognize that collaborative learning is better than individual learning in English classes.	0.00%	9.30%	14.80%	40.70%	35.20%	100%

Source: Data collected through the application of the survey

Note: SD = Strongly disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly agree

Table 3 shows the perception of the respondents regarding the role of the student in connectivism. All items obtained significant positive percentages, however, items 11 and 13 stand out with 92.60% approval between strongly agree and agree. Thus, the respondents demonstrate that they are aware of the important role they play in the sessions and in their own learning of the English language, for which they show positive tendencies to the characteristics of connectivism, such as group learning, exchange of experiences and handling of new information.

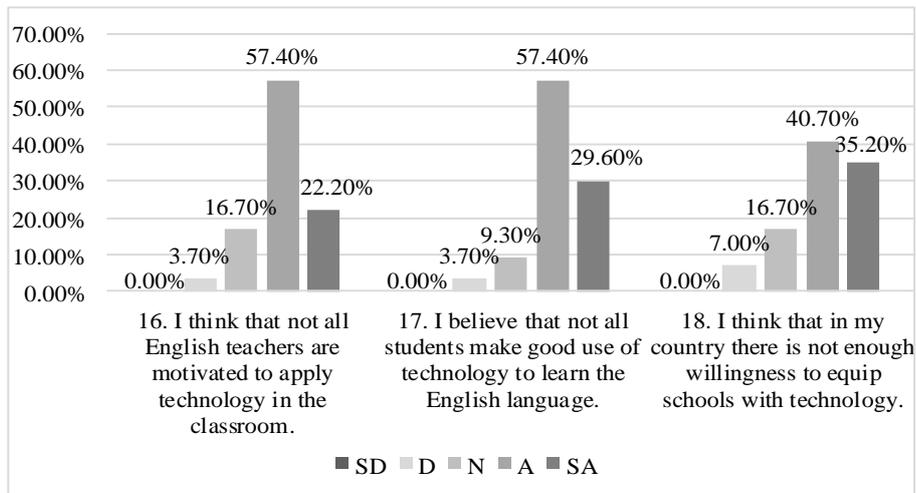


Figure 4. Respondents' perception of the limitations in the application of connectivism.

Source: Data collected through the application of the survey

Note: SD = Strongly disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly agree

Figure 4 shows the perception of the respondents regarding the limitations in connectivism. All the items show to be approved by the respondents, especially item 17 with 87.00% between totally agree and agree. It is thus inferred that the respondents show that in their countries the educational system is not oriented to the teaching of connectivism due to deficiencies in infrastructure and motivation on the part of teachers to use new technologies and that as a result, students do not make good use of the Internet for their learning.

4. Discussion

After the description and analysis of the results collected about the variables "Perception of the connectivist model" and "English language teaching", we proceed to carry out the discussions according to the objectives set out in this research. The main objective is to determine the students' perception of the connectivist model in English language teaching. Although connectivism, unlike other learning theories, has garnered considerable attention and discussion, there is a long history of testing and modification which leads to a defining framework to explain how individuals in the digital age learn differently and most efficiently (Corbett & Spinello, 2020). Connectivism was ground-breaking when it was launched in 2004 for the first time over a decade, anchored on chaos theory, networking, complexity and ideas on self-organization. The original notion of Siemens, however, is not considerably updated and improved at the theoretical level.

In the dimension of connectivism principles, it can be seen that students mostly agree with the use of social networks for English language learning, which is reinforced by the research of Lima and Araujo (2018), who conclude that students demonstrate a positive perception towards social networks and enjoy the benefits they offer while reinforcing the communicative ability of the target language when they are used in a responsible and

conscious manner. However, the respondents also demonstrate the need for a balance between physical learning through a book and learning English virtually, considering even more that the knowledge acquired virtually is not enough and that it is necessary for them to also attend face-to-face classes since virtual interaction is not of the same intensity as face-to-face learning. This can be explained by Aguilar and Del Valle (2016), who argue that many students need face-to-face contact with the teacher to achieve better learning, because learning in virtual modalities requires a lot of will and self-control on the part of the student.

In the teacher's role dimension, it is shown that the demand and expectation is high with respect to the role they play, considering that teachers should encourage the appropriate use of digital media, prioritizing autonomous learning in students while making use of virtual games, applications or web pages oriented to English language learning. Therefore, the teacher is considered by the respondents as a necessary actor for English language learning considering their participation in virtual media, since the teacher exerts a guiding role that helps to control the teaching process. This is demonstrated in the research by Laura and Velarde (2019) who conclude that most of the students in educational institutions can achieve significant learning in the comprehension of English texts with the application of the JClick tool in the classroom, generating innovation in teaching and in the learning process. Different advancements in technology, education and pedagogy in recent years have influenced the teaching and learning processes. Numerous studies have investigated factors influencing teachers' technology integration in diverse cultures to learn a foreign language (Teo et al., 2018).

Similarly, the use of technologies through mobile devices shows a great impact on language learning, generating improvement in the development of skills, as well as solidarity and collaboration among peers, which was demonstrated in the research of Rodriguez (2015) who applied various teaching materials such as the use of forums, chats, activities in the virtual classroom, web pages, podcasts, among others, achieving the aforementioned results. Moreover, today's teachers of English cannot see online teaching as complex, which might explain the lack of a significant link between ease of use and intent to use in this study, therefore requiring further investigation on the previous variable in other contexts (Huang et al., 2019; Venkatesh & Bala, 2008).

In the student's role dimension, it can be evidenced that students recognize that their participation is necessary to achieve English language learning, thus recognizing that they should seek communicative virtual environments, where they can share their experiences using the target language and thus improve their English skills with emphasis on oral and written skills. The previous result is supported by the research by González (2012) who argues that students show a positive perception regarding the use of Blogs and Facebook as places that allow language learning through interaction with the work of other classmates, the exchange of information and comments. Likewise, the respondents show preference for group work as a means that allows meaningful learning of English compared to individual work; considering that group learning can have great benefits in learning and teaching, allowing the exchange of valuable knowledge among students, the co-evaluation among

them, as well as the development of social and cooperative skills and finally the implementation of communicative skills in the English language (Salas, 2016).

In the same way, the respondents accepted that they should be intrinsically motivated, since this type of motivation allows students to achieve their goals without the need for a reward for their effort, rather than the achievement of having learned based on the love of knowledge (Barrera et al., 2014); and that they should relate the new knowledge they learn in class with their previous experience in order to learn the English language by themselves; and show their concern for recognizing reliable pages on the Internet to meet their goals. As noted by Laura et al. (2021), students from public educational institutions improved their text comprehension competence through a gamification tool that included images, videos, phrases, the proposed game was composed of avatars, memes and powers of the Quizizz tool that motivated them to reflect on their learning. In addition, they learned at their own pace, recognizing their strengths and weaknesses, receiving instant and asynchronous feedback through the game reports. According to Yang and Huang (2008) in the fields of technology, the pedagogical, creative and topical expertise of teachers plays a key part. In this light, it is important to promote a technological vision by combining a dual focus in the course of training efforts on technological and pedagogical concerns, coaching and modeling and skills in the creative use of technology-mediated English instruction. Integration of technology must be represented by the teacher and related to content, objectives and tasks of the course.

In the dimension of limitations, there are worrying results that limit the teaching of English and the application of connectivism in the classroom. The majority of respondents answered that the government of the countries they come from does not show interest in the implementation of teaching technologies in schools. This may be due to the lack of adequate equipment or lack of teacher training, as mentioned by Sierra-Llorente et al. (2018) in the conclusion of their research, showing that schools do not have adequate space or sufficient equipment required for the number of students, and that there is no promotion of seminars or implementation of ICTs in the classroom to teachers. On the other hand, respondents perceive that the roles of teachers and students are not as expected in relation to the connectivist theory, with the former showing little motivation in the incorporation of technologies in the class-room and the latter little willpower to make good use of the Internet and technologies for educational purposes. This is supported by the research mentioned below. Ovalles (2014) argues that many teachers are forced to move their classes virtually, and that when they do so, they replicate the methodology of face-to-face studies because they believe that this is the only way in which they can teach correctly. Likewise, Garrote et al. (2018) conclude in their research that many adolescents dedicate large amounts of time to the use of technology, considering it a tool that allows them to relax, but at the same time they demonstrate behaviours very close to dependence, such as dis-comfort at not being able to connect and the need for frequent consultation of the mobile device, thus relegating its use from the educational aspect.

5. Conclusion

According to the analysis carried out in this research, it can be inferred that the respondents show a highly positive perception of the characteristics of connectivism, thus assuming that the application of connectivism in English classrooms can enhance language learning. However, due to the fact that data were obtained where respondents show an undecided perception regarding the best teaching modality for learning English, it could be inferred that students may be more interested in learning in classes where there is a mixed modality or also called Blended Learning, which according to Area and Adell (2009) is an innovative learning model that generates important changes in the interaction between teachers and students, communication and work styles, generating that the virtual classroom is no longer just a reception area for the storage of work, but a place where students can interact in debates, forums and solve exercises.

On the other hand, it can be concluded that students show high expectations about the role of teachers and their use of technology in the classroom; not only considering it as part of the teaching methodology, but also providing an added value that would be teaching students about information and pages that are reliable and how to apply the content they find to become self-learners. Furthermore, respondents demonstrate awareness of the role they play in their own learning and the importance of motivation and group work in language learning.

Finally, some recommendations can be given in base of the research. It is important to consider that teachers have to be very cautious with the use of this model having in mind that the main objective is not motivate students in the use of technology but get them involved in the teaching - learning process and in that way be re-sponsible of their own learning and obtain the necessary competencies. Other important aspect is that is necessary to take action on the limitations described in this research. A high degree of responses was found that affirm that limitations exist in the diversity of countries from which the respondents come from. Respondents, mostly young people, expect a change in the government, teachers and students in order to work together for the progress of their country, specifically in education. It calls for reflection and encourages the different countries to take action to implement technological tools in their classrooms, to train teachers in their use and to teach the proper use of the Internet and social networks so that students create study habits and find in them an environment in which to learn implicitly and collaboratively through learning networks.

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