Revista Iberoamericana para la Investigación y el Desarrollo Educativo
ISSN 2007 - 7467

https://doi.org/10.23913/ride.v10i20.645

Artículos Científicos

Experiencias del profesorado acerca del aprendizaje autónomo en estudiantes de modalidad a distancia y el uso de recursos digitales

Teachers' Experiences About the Autonomous Learning in Distance Learning Students and the Use of Digital Resources

Experiências de professores sobre aprendizagem autônoma em estudantes a distância e uso de recursos digitais

José de Jesús Peinado Camacho
Instituto Politécnico Nacional, México
jpeinadoc@ipn.mx
https://orcid.org/0000-0002-2262-4565

Resumen

El objetivo de esta investigación fue documentar experiencias del aprendizaje autónomo desde la perspectiva de los profesores de educación a distancia. La metodología que se utilizó fue cualitativa. La investigación fue no experimental con diseño transversal y exploratorio. Se seleccionó el estudio de caso como técnica para obtener la información. La muestra fue no probabilística y heterogénea. Los resultados de la investigación proponen que los profesores fomentan el aprendizaje autónomo al permitir que los alumnos intervengan en la construcción de procedimientos y recursos para alcanzar el propósito y las habilidades planteadas en una actividad específica, de esta manera el estudiante toma conciencia sobre sus decisiones para dirigir y regular su propio aprendizaje. Promover el pensamiento crítico y reflexivo, permitir la autodirección y la autorregulación, aumentar el aprendizaje significativo y emplear habilidades metacognitivas son algunas de las ventajas que los docentes entrevistados perciben al momento de desarrollar el aprendizaje autónomo en los alumnos.

Palabras clave: alumnos, aprendizaje autónomo, educación a distancia, profesores, recursos digitales.

Abstract

The objective of this research was to document experiences of autonomous learning from the perspective of distance education teachers. The methodology that was used was qualitative. The research was non-experimental with cross-sectional and exploratory design. The case study was selected as a technique to obtain the information. The sample was non-probabilistic and heterogeneous. The results of the research propose that teachers encourage autonomous learning by allowing students to intervene in the construction of procedures and resources to achieve the purpose and skills raised in a specific activity, in this way the student becomes aware of their decisions to direct and regulate their own learning. Promoting critical and reflective thinking, allowing self-direction and self-regulation, increasing meaningful learning and using metacognitive skills, are some of the advantages that the interviewed professors perceive when developing autonomous learning in students.

Keywords: students, autonomous learning, distance education, teachers, digital resources.

Resumo

O objetivo desta pesquisa foi documentar experiências de aprendizagem autônoma na perspectiva de professores de educação a distância. A metodologia utilizada foi qualitativa. A pesquisa não foi experimental, com delineamento transversal e exploratório. O estudo de caso foi selecionado como a técnica para obter as informações. A amostra foi não probabilística e heterogênea. Os resultados da pesquisa propõem que os professores promovam a aprendizagem autônoma, permitindo que os alunos intervenham na construção de procedimentos e recursos para atingir o objetivo e as habilidades estabelecidas em uma atividade específica, para que o aluno tome consciência de suas decisões em dirigir e regular sua própria aprendizagem. Promover o pensamento crítico e reflexivo, permitir a auto-direção e a auto-regulação, aumentar a aprendizagem significativa e empregar habilidades metacognitivas são algumas das vantagens que os professores entrevistados percebem ao desenvolver a aprendizagem autônoma nos alunos.

Palavras-chave: estudantes, aprendizagem autônoma, educação a distância, professores, recursos digitais.

Revista Iberoamericana para la Investigación y el Desarrollo Educativo
ISSN 2007 - 7467

Fecha Recepción: Diciembre 2019 **Fecha Aceptación:** Abril 2020

Introduction

Clarence (2017) determines that "teachers accept that challenging academic activities can awaken student achievement goals" (p. 55). Hromalik and Koszalka (2018) agree that “there is greater commitment in self-regulated learning” (p. 528). According to Chen, Bennett and Maton (2008), “students are better adapted to learning in a flexible environment” (p. 307).

The progressive, continuous and process-oriented nature of content design is very important (Esteban and Zapata, 2016, p. 1; Sun, 2016, p. 349). In this sense, Park and Yun (2017) mention that "teachers can use strategies that improve the self-efficacy of online learning" (p. 302). Alqurashi (2019) points out that "there must be the interaction of the student with the content and with the teacher" (p. 133). Grover and Troja (2014), for their part, establish that “at the same time, student satisfaction and perceived learning can be determined” (p. 90).

Some specialists such as Hromalik and Koszalka (2018) specify that "monitoring performance, learning methods, use of time and motivation are very useful in student learning" (p. 528). But it must be considered that students differ in the use of learning strategies, regulatory strategies, motivation and attitudes towards a specific subject (Clarence, 2008, p. 439; Esteban and Zapata, 2016, p. 1). For this reason, the role of goal orientation and academic self-efficacy in student performance influenced by regulation of effort, metacognitive regulation, and regulation of interaction should be examined, thus developing critical thinking and knowledge that the students themselves show in order to guide support where it is most needed (Cho and Shen, 2013, p. 290; Onrubia, 2016, p. 3; Park and Yun, 2017, p. 302).

For Clarence (2017) "students better perceive performance-focused objectives for dealing with academic tasks that require them to demonstrate proficiency" (p. 55). While Niño, Castellanos and Viloria (2019) specify that "students must have the possibility of setting short and medium-term goals for the effective development of a task" (p. 18). In this way, better results are achieved than with domain objectives on specific topics (Clarence, 2008, p. 439). Additionally, they complete their tasks, demonstrate mastery of skills and are more positive when having options. (Hanewicz, Platt y Arendt, 2017, p. 273).

Accompaniment in the student training process is vital for the construction of knowledge (Henning and Escofet, 2015, p. 5). Motivation, responsibility and feedback play a crucial role in the success of self-learning (MacDougall, 2008, p. 228). Furthermore, to achieve this success, the

student must have metacognitive skills (Onrubia, 2016, p. 3), as well as academic and independent self-efficacy (Cho and Shen, 2013, p. 291; García, 2012, p. 20) . Without a doubt it is a process of preparation for working life, where, when the time comes, the student will be able to benefit from self-knowledge at this stage.

In addition, students also use the collaborative workspace, as well as digital tools and means to carry out independent and collaborative activities (Amador and Velarde, 2019, p. 8; Henning and Escofet, 2015, p. 8). This includes getting to know each other, sharing personal and group expectations, respecting individual differences, negotiating meaning with others, and self-regulating (Mendieta, Estrada, and Pérez, 2019, p. 5; Niño et al., 2019, p. 18), which contributes to individual student development and academic achievement in the course (Cardoso and Cerecedo, 2019, p. 16; Cho and Shen, 2013, p. 290).

On the other hand, the efforts to incorporate new trends in the dynamics of virtual learning are varied and extensive with the intention of adapting new proposals for digital media (Domínguez, Organista and López, 2018; Gros, 2016; Torres, Jara and Valdivieso, 2012); Such is the case of messaging platforms, better known as messaging apps, applications or chat apps (Camacho, Caldera and Valenzuela, 2019; Carrillo, Cascales and López, 2018; Henze, Pielot, Poppinga, Schinke and Boll, 2011). There are also podcasts, audio or video multimedia files that include text either as subtitles or notes (Contreras, Herrera and Ramírez, 2009; Turró, Despujol and Busquets, 2014); Of course, there are notable efforts to incorporate the extremely popular social networks into distance education (Belli and Reyes, 2015; Torres et al., 2012); videogames are a significant and viable experience in learning contexts, since, in more than one case, it is feasible to analyze their impact on academic performance, motivation and degree of satisfaction (Bossolasco, Enrico, Casanova and Enrico, 2015; Jiménez and Diez, 2018; Rodríguez, López and Mortera, 2017). Push notifications, artificial intelligence and voice assistants remain to be developed in the distance education environment.

Taking into consideration all the information mentioned so far, the National Polytechnic Institute (IPN) was selected as the object of study, in order to answer the following research question: how is autonomous learning promoted in distance education students through of digital resources? The objective is to document autonomous learning experiences from the perspective of IPN distance education teachers.

Method

The methodology used was qualitative. The research was non-experimental with a cross-sectional and exploratory design. The case study was selected as the technique to obtain the information, since it is a systematic and empirical investigation. The sample was non-probabilistic and heterogeneous.

Sample design

A heterogeneous sample composed of 12 professors from scientific and technological studies centers and 8 from higher education schools of the IPN distance education system was structured. Participants were selected for their academic background, professional experience, and teaching work at IPN. The interviews were carried out between the months of March and December of the year 2018.

Collection of information

Once the possible interview participants were selected, they were contacted and the date, time and place of the interview were established; Subsequently, the interview program was prepared, and finally they were carried out. To carry out the interviews, a questionnaire was designed with six questions in depth, where the interviewer introduced additional comments to clarify concepts and obtain more information on the topic studied. It is worth mentioning that the questionnaire raised a specific situation in order for teachers to present their experiences about how they promote autonomous learning in their distance learning students and the use of digital resources. The approach to the situation and the questions were as follows:

> Activity four of the learning unit it teaches points to retaking the results of activity three as the basis for doing more elaborate, comprehensive and in-depth work. The purpose is to monitor the skills and competencies previously achieved. In this regard, one of his students comments to him: “I allow myself to communicate with you because I have difficulties doing activity four, I have the job in activity three, but due to force majeure I can no longer follow up on the same job. Can you give me the opportunity to do activity four with other information? I am ready to do all the work from the beginning. ”

With this eventuality in mind, answer the following questions: What answer would you give the student? Would you allow changes to perform the scheduled activity? What would be the reasons? How would you handle the situation with the other students? What would be the advantages of the new proposal to achieve the competences in the student? Is autonomous learning promoted in students through digital resources?

Information processing

The information processing consisted of transcribing the interviews from the audio file into the Word word processor; A file was generated for each interview. Then a synthesis of each was prepared to be used in the information systematization stage.

Systematization and analysis of information

Based on Peinado, Cerecedo and Jaramillo (2015), the systematization and analysis of the information was organized as follows:

First of all, it is worth noting that throughout this stage the ATLAS.ti computer tool was used, the purpose of which is to facilitate the qualitative analysis of textual data. However, as a first step, the primary documents were entered, that is, the transcripts of the interviews that were carried out with the teachers. The second step was to prepare the citations for the primary documents. Citations are significant segments of these primary documents, it is the first selection of material for the reduction of field data. The third step was to encode the information. Codes are conceptualizations, summaries or groupings of citations, which implies a second level of data reduction. The fourth step was to process the memos or notes. These are comments of a qualitatively higher level, since they include all those annotations that were made during the analysis process: from reminder notes to explanations of the relationships found, conclusions and others that can be used as a starting point for writing the report. The fifth step was to create megafamilies, superfamilies and families, groupings of codes that have the purpose of establishing relationships of different types between the components (Peinado et al., 2015, p. 145).

The structuring of megafamilies, superfamilies and families are described in Table 1.

Tabla 1. Estructuración de megafamilias, superfamilias y familias

Megafamilias	Superfamilias	Familias
1) La actividad y su propósito	*1)* Respuestas al alumno	*1)* Ratificar lo establecido en la actividad
		2) Adecuar la actividad
	2) Argumentos para no hacer cambios	*1)* Cumplir con los objetivos en tiempo y forma
		2) No afectar la actividad
		3) Adquirir las competencias deseadas
	3) Justificaciones para realizar cambios	*1)* Motivarlo a ser responsable y creativo
		2) Considerar las circunstancias del alumno
		3) Hacerlo por medios digitales
2) Manejo de la situación	*1)* Manejo del problema	*1)* Informar la situación del alumno al tutor
		2) Apoyar la formación académica del alumno
	2) Postura con los otros estudiantes	*1)* Explicar razones para cambiar la actividad
		2) Poner a discusión la situación del alumno
	3) Ventajas de una nueva propuesta	*1)* Lograr competencias en el alumno
		2) Potenciar las capacidades del alumno
		3) Fortalecer la dedicación del alumno
3) Aprendizaje autónomo	*1)* Aprendizaje aplicado al entorno y realidad del alumno	*1)* Promover el pensamiento crítico y reflexivo
		2) Permitir la autodirección y la autorregulación
		3) Aumentar el aprendizaje significativo
		4) Emplear habilidades metacognitivas
	2) Recursos digitales	*1)* Utilizar tecnologías de la información y la comunicación (TIC)

Fuente: Elaboración propia

Results

The main results obtained are presented below. Regarding the question "What answer would you give the student?", Most of the teachers answered that they would support the student with their request. Something that the respondents mentioned on more than one occasion was that, in order to solve the problem, the accompaniment work by the assigned tutor is essential. In this sense, some teachers agree that the student must notify the tutor of any changes they make, of

address or work, for example, so that the tutor can have the database of their tutored students updated. Likewise, the professors interviewed agree that the tutor should know the student's academic career and obtain further feedback through their comments. Additionally, they expressed that changing the place is not important, that what is truly substantial is developing the skills to evaluate the student's competence.

Regarding the question "Would you allow changes to carry out the scheduled activity?", The answer of most teachers is that they would give the student the opportunity to do the activity somewhere else. Among the proposals mentioned is that of offering more time to deliver the work and thus, with more time, the student can carry out the activity. They also stated that it could be done with the results of the previous work using ICT to achieve it.

Regarding the question "What would be the reasons?", The teachers present different reasons. One of them is that the purpose of the activity is respected. Participants agree that students should be supported when they find solutions to their problems themselves and thus motivate their own learning. The interviewees also indicated that there must be flexibility taking into account the circumstances; They recognize that in this way, autonomous learning and the development of the skills indicated in the program are also promoted.

Regarding the question "How would you handle the situation with other students?", The teachers answered that they would explain the reasons that exist to change and adapt the activity of the student in question. Some of them argued that they would consult it through a forum or internal messaging, to find out if someone else is in a similar situation, make the necessary adjustments in their group and inform the tutor, with the aim of offering alternatives and that they are not left without acquire the competence of the activity. Only two teachers interviewed indicated that they would inform the students if it was really necessary, since they considered that no special handling of the situation is required with the other members of the group.

Concerning the question "What would be the advantages of the new proposal to achieve the competences in the student?", The teachers interviewed established that, in addition to promoting the achievement of the competences of the activity, learning with technological tools should be motivated and generate critical and reflective thinking, as well as use their metacognitive skills. They also indicated that the main advantage of the proposal is for the student to develop self-regulation of their own learning by meeting the objective of the activity. The interviewees stated that another of the expected advantages is to strengthen self-esteem, security in their decisions, initiative and creativity, which will impact the motivation and dedication of the student.

Corresponding to the question "Is autonomous learning promoted in students through digital resources?", Participants listed various ICTs to carry it out. E-mail is considered as a means to carry out the requested work: they send files and then receive responses through this same resource. They also propose to share by Skype, by traditional telephone, by WhatsApp or by social networks. The teachers also mention Google Forms, the means by which it is possible to carry out surveys, it is enough to send a link to the students so that they can answer it, in this way the information that is required can be collected. Finally, they point to Google Drive as a digital resource.

Discussion

Following Gros (2016), "when educational technologies and designs communicate, there is a dynamic interdependence" (p. 2). Thus, the key to solving the student's situation is not to change the contents of the learning unit, or offer different options to each student; the objective is to access the purpose of the activity in a different way to achieve the same learning. These situations should not be seen as a problem, but as an extraordinary opportunity to promote autonomous learning.

Romero and Barberà (2013) indicate that "the student must be allowed to develop their competencies of management or regulation of learning and to know how to reconcile their different professional, family and academic times" (p. 14). In this way, increased confidence and self-regulation are beneficial results of the distance learning process, applying approaches based on the students' personal experience (Gutiérrez & Gallego, 2017, p. 1181), and with it students develop autonomous learning: learning to learn (MacDougall, 2008, p. 224). In this regard, the student shows autonomous learning skills by proposing an alternative to their problems and taking responsibility for completing the work. The teacher must encourage and promote this type of learning, but, at the same time, it must be transparent with the other students and with the guidelines of the learning unit. It is pertinent to remember that the teacher can modify the forms of work, the type of individual or team work, delivery times, assessment instruments and sources of information. What is not recommended to change are the skills that the student must acquire, the purposes of the activity and the evaluation percentage.

Hanewicz et al. (2017) establish that "student-centered teaching is a more effective pedagogy for online students" (p. 2). Teachers who focus on promoting autonomous learning in the student adequately guide pedagogical methods, improve communication, appropriately manage

available resources and adapt activities to the living conditions of students. Additionally, when the teacher provides feedback to the activities of their students, it promotes the student's autonomous learning, as it allows them to recognize their strengths and areas for improvement.

Attention should be paid to technological approaches, trends and current developments that allow obtaining massive information and the dissemination of knowledge (Arancibia, Cabero and Valdivia, 2019, p. 104; Gros, 2016, p. 11; Molinero and Chávez , 2019, p. 9). It should be said that the teacher must know the management and use of digital tools and media, his technical skills must understand abundance, analysis and adaptability. Through them, you must achieve individualization and differentiation to achieve personalization of activities, with inclusive, democratic and participatory educational practices, based on self-planning and self-regulation strategies, seeking the acquisition of competencies and skills to develop autonomous learning in the students.

From another angle, Xiao (2012) determines that "the tutor-student relationship is another factor to consider because it affects the motivation of student learning" (p. 375). Along these lines, communication between the teacher and the tutor must be continuous to accompany the student's academic career.

In general terms, the research showed that teachers promote autonomous learning by allowing students to intervene in the construction of procedures and resources to achieve the purpose and skills set out in a specific activity, in this way the student becomes aware of their decisions. to direct and regulate their own learning.

The present study generated data for more introspective research, it is not considered generalizable and it is not conclusive either (Hernández, Fernández and Baptista, 2010, p. 165). It is recommended for future works to expand the size of the sample, include experiences of distance education students, inquire about teaching practices and their transformation with the support of new technologies, determine the acceptance of technologies by other actors associated with the educational process, the role played by school authorities and the importance of current regulations, as well as the financial impact of the use of these technologies in the educational field.

Conclusions

The objective of the study was to contribute data and experiences on autonomous learning from the teachers' point of view.

In the course of their studies, students face different problems and often make proposals to solve them themselves. This speaks to their level of creativity and responsibility. In this aspect, the teacher makes changes allowing the student to advance and acquire the necessary skills for their training. But before making any changes it is advisable to examine the implications on the purpose of the activity, the collaboration between students and the digital resources to use.

The teachers interviewed understand that students use digital media to face the challenges that they face in their learning, even more when it comes to their learning on their own. This flexibility should be allowed when considering the situation and circumstances of each student.

Promoting critical and reflective thinking, allowing self-direction and self-regulation, increasing meaningful learning and employing metacognitive skills are some of the advantages that the teachers interviewed perceive when promoting autonomous learning in students.

As an additional line of work, it is possible to consider other quantitative studies that focus on terminal efficiency, as is done in some works in face-to-face education (Peinado and Jaramillo, 2018; Peinado, Mayagoitia and Cruz, 2019), and to determine the factors that intervene in the desertion of the distance modality.

References

Alqurashi, E. (2019). Predicting student satisfaction and perceived learning within online learning environments. *Distance Education*, *40*(1), 133-148. Retrieved from http://doi.org/10.1080/01587919.2018.1553562.

Amador, C. y Velarde, L. (2019). Competencias para el uso de las TIC en estudiantes de educación superior: un estudio de caso. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, *10*(19), 1-27. Recuperado de https://doi.org/10.23913/ride.v10i19.515.

Arancibia, M., Cabero, J. y Valdivia, I. (2019). Estudio comparativo entre docentes y estudiantes sobre aceptación y uso de tecnologías con fines educativos en el contexto chileno. *Apertura*, *11*(1), 104-119. Recuperado de http://dx.doi.org/10.32870/Ap.v11n1.1440.

Belli, S. y Reyes, M. (2015). La experiencia de lo virtual en la educación digitalizada. Cuestiones de confianza en contextos educativos online. *RED-Revista de Educación a Distancia, 47*(5), 1-21. Recuperado de http://www.um.es/ead/red/47/Belli.pdf.

Bossolasco, M., Enrico, R., Casanova, B. y Enrico, E. (2015). Kokori, un *serious game*. La perspectiva de los estudiantes ante una propuesta de aprendizaje innovadora. *RED, Revista de Educación a Distancia*, 45(3), 1-17. Recuperado de http://www.um.es/ead/red/45/bossolasco.pdf

Camacho, A., Caldera, M. y Valenzuela, V. (2019). Fidelidad en el uso de app para la resolución de ecuaciones diferenciales. *Apertura*, 11(1), 74-89. Recuperado de http://dx.doi.org/10.32870/Ap.v11n1.1463

Cardoso, E. y Cerecedo, M. (2019). Estudio evaluativo de las competencias genéricas en las licenciaturas de comercio y administración de modalidad virtual del IPN. *RIDE. Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, 9(18), 62-83. Recuperado de https://doi.org/10.23913/ride.v9i18.411

Carrillo, M., Cascales, A. y López, A. (2018). Apps para el aprendizaje de idiomas en la Universidad de. *RED. Revista de Educación a Distancia*, 58(13), 1-18. Recuperado de http://dx.doi.org/10.6018/red/58/13

Chen, R., Bennett, S. and Maton, K. (2008). The adaptation of Chinese international students to online flexible learning: two case studies. *Distance Education*, 29(3), 307-323. Retrieved from http://doi.org/10.1080/01587910802395821

Cho, M.-H. and Shen, D. (2013). Self-regulation in online learning. *Distance Education*, 34(3), 290-301. Retrieved from http://doi.org/10.1080/01587919.2013.835770

Clarence, Ng. (2008). Multiple-goal learners and their differential patterns of learning. *Educational Psychology*, 28(4), 439-456. Retrieved from http://doi.org/10.1080/01443410701739470

Clarence, Ng. (2017). Distance learners' multiple goals, learning and achievement in different learning situations. *Distance Education*, 38(1), 37-58. Retrieved from http://doi.org/10.1080/01587919.2017.1298981

Contreras, J., Herrera, J. y Ramírez, M. (2009). Elementos instruccionales para el diseño y la producción de materiales educativos móviles. *Apertura*, 1(1), 84-99. Recuperado de http://www.udgvirtual.udg.mx/apertura/index.php/apertura/article/view/121/120

Domínguez, C., Organista, J. y López, M. (2018). Diseño instruccional para el desarrollo de contenidos educativos digitales para teléfonos inteligentes. *Apertura*, 10(2), 80-93. Recuperado de http://www.udgvirtual.udg.mx/apertura/index.php/apertura/article/view/1346/969

Esteban, M., y Zapata, M. (2016). Estrategias de aprendizaje y eLearning. Un apunte para la fundamentación del diseño educativo en los entornos virtuales de aprendizaje. *RED. Revista de Educación a Distancia*, 50(15), 1-12. Recuperado de http://www.um.es/ead/red/50/esteban_zapata.pdf

García, L. (2012). *¿Por qué va ganando la educación a distancia?* (1a ed.) Madrid: UNED.

Gros, B. (2016). Retos y tendencias sobre el futuro de la investigación acerca del aprendizaje con tecnologías digitales. *RED. Revista de Educación a Distancia*, 50(10), 1-13. Recuperado de http://www.um.es/ead/red/50/gros.pdf

Grover, J. and Troja, A. (2014). Satisfaction and success in online learning as a function of the needs for affiliation, autonomy and mastery. *Distance Education*, 35(1), 90-105. Retrieved from http://doi.org/10.1080/01587919.2014.891427

Gutiérrez, E. y Gallego, M. (2017). Presencia social en un ambiente colaborativo virtual de aprendizaje: análisis de una comunidad orientada a la indagación. *Revista mexicana de investigación educativa*, *22*(75), 1169-1186. Recuperado de http://www.comie.org.mx/documentos/rmie/v22/n075/pdf/75007.pdf

Hanewicz, Ch., Platt, A. and Arendt, A. (2017). Creating a learner-centered teaching environment using student choice in assignments. *Distance Education*, 38(3), 273-287. Retrieved from http://doi.org/10.1080/01587919.2017.1369349

Henning, C. y Escofet, A. (2015). Construcción de conocimiento en educación virtual: Nuevos roles, nuevos cambios. *RED, Revista de Educación a Distancia*, 45(5), 1-10. Recuperado de http://www.um.es/ead/red/45/hennig.pdf

Henze, N., Pielot, M., Poppinga, B., Schinke, T. and Boll, S. (2011). My Apps is an experiment: Experience from User Studies in Mobile Apps Stores. *International Journal of Mobile Human Computer Interaction*, 3(4), 71-91. Retrieved from http://www.igi-global.com/article/app-experiment-experience-user-studies/58926

Hernández, R., Fernández, C. y Baptista, P. (2010). *Metodología de la investigación* (1.ª ed.). México: McGraw-Hill.

Hromalik, C. and Koszalka, T. (2018). Self-regulation of the use of digital resources in an online language learning course improves learning outcomes. *Distance Education*, *39*(4), 528-547. Retrieved from http://doi.org/10.1080/01587919.2018.1520044.

Jiménez, A. y Diez, E. (2018). Análisis del contenido de apps y videojuegos: implicaciones en procesos cognitivos en la lectura inicial. *Apertura*, *10*(1), 71-87. Recuperado de http://dx.doi.org/10.32870/Ap.v10n1.1114.

MacDougall, M. (2008). Ten Tips for Promoting Autonomous Learning and Effective Engagement in the Teaching of Statistics to Undergraduate Medical Students Involved in Short-Term Research Projects. *Journal of Applied Quantitative Methods*, *3*(3), 223-240. Retrieved from https://eric.ed.gov/?id=EJ813130.

Mendieta, A., Estrada, J. y Pérez, K. (2019). *Millennials* en torno a la comunicación y cultura para la educación superior. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, *10*(19), 1-24. Recuperado de https://doi.org/10.23913/ride.v10i19.497.

Molinero, M. y Chávez, U. (2019). Herramientas tecnológicas en el proceso de enseñanza-aprendizaje en estudiantes de educación superior. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, *10*(19), 1-31. Recuperado de https://doi.org/10.23913/ride.v10i19.494.

Niño, S., Castellanos, J. y Viloria, E. (2019). Construcción del conocimiento y regulación del aprendizaje en tareas colaborativas asíncronas. *Apertura*, *11*(1), 6-23. Recuperado de http://dx.doi.org/10.32870/Ap.v11n1.1465.

Onrubia, J. (2016). Aprender y enseñar en entornos virtuales: Actividad conjunta, ayuda pedagógica y construcción del conocimiento. *RED-Revista de Educación a Distancia*, *50*(3), 1-14. Recuperado de https://www.um.es/ead/red/50/onrubia.pdf.

Park, S. and Yun, H. (2017). Relationships between motivational strategies and cognitive learning in distance education courses. *Distance Education*, *38*(3), 302-320. Retrieved from https://doi.org/10.1080/01587919.2017.1369007.

Peinado, J., Cerecedo, M. y Jaramillo, D. (2015). Propuesta de un modelo de gestión del Capital Intelectual para los Centros de Investigación del IPN. *Punto de Vista*, *6*(10), 135-157. Recuperado de http://dx.doi.org/10.15765/pdv.v6i10.768.

Peinado, J. y Jaramillo, D. (2018). La eficiencia terminal del Centro de Investigación e Innovación Tecnológica. *Revista Electrónica de Investigación Educativa,* 20(3), 126-134. Recuperado de https://doi.org/10.24320/redie.2018.20.3.1797

Peinado, J., Mayagoitia, V. y Cruz, C. (2019). Los grupos de investigación y su impacto en los factores que determinan la eficiencia terminal. *Revista Dilemas Contemporáneos: Educación, Política y Valores*, *7*(1), 1-26. Recuperado de http://files.dilemascontemporaneoseducacionpoliticayvalores.com/200005708-5b0b35b0b4/19.09.32%20Los%20grupos%20de%20investigaci%C3%B3n%20y%20su%20impacto%20en%20los%20factores%20que...pdf.

Rodríguez, R., López, B. y Mortera, F. (2017). El video como Recurso Educativo Abierto y la enseñanza de Matemáticas. *Revista Electrónica de Investigación Educativa*, *19*(3), 92-100. Recuperado de https://doi.org/10.24320/redie.2017.19.3.936.

Romero, M. y Barberà, E. (2013). Identificación de las dificultades de regulación del tiempo de los estudiantes universitarios en formación a distancia. *RED-Revista de Educación a Distancia*, *38*(1), 1-17. Recuperado de https://www.um.es/ead/red/38/romero_barbera.pdf.

Sun, S. (2016). Learntime and learning place-focused forward-oriented design for learning in technology-enhanced classrooms. *Distance Education*, *37*(3), 349-365. Retrieved from http://doi.org/10.1080/01587919.2016.1233051.

Torres, J., Jara, D. y Valdiviezo, P. (2012). Integración de redes sociales y entornos virtuales de aprendizaje. *RED-Revista de Educación a Distancia*, *35*(3), 1-8. Recuperado de https://www.um.es/ead/red/35/torres_et_al.pdf.

Turró, C., Despujol, I. y Busquets, J. (2014). Grabación automatizada de clases magistrales: el proyecto Videoapuntes de la UPV. *RED-Revista de Educación a Distancia*, *40*(3), 1-7. Recuperado de https://www.um.es/ead/red/40/turro.pdf.

Xiao, J. (2012). Tutors' influence on distance language students' learning motivation: voices from learners and tutors. *Distance Education*, *33*(3), 365-380. Retrieved from https://doi.org/10.1080/01587919.2012.723167.