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Digital Competences and Emotions in University Students from Dominican Republic

Competencias digitales y emociones en estudiantes universitarios de República Dominicana

多米尼加共和国大学生的数字能力和情感

Цифровые навыки и эмоции у студентов университетов Доминиканской Республики

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Abstract

Digital skills and emotions are two issues that are currently influencing the teaching and learning process, given the situation of education in a kind of face-to-face and online modality, it is relevant to know how students are and if there is any influence between these variables. Therefore, this study is quantitative, correlational, and cross-sectional. Its objectives are to identify the level of digital competence, emotional intelligence, and positive emotions, to identify the differences in digital competences, emotional intelligence, and positive emotions in relation to gender and age, and to identify the relationship between digital competences and positive emotions of students. University students. A sample of 134 students from different careers was obtained. The results found that university students have an average level of digital skills, positive emotions, and emotional intelligence. No variations were found by sex and age in the first two, but in the third it was found that women have better scores in the dimensions of attention and clarity compared to men. Finally, it was observed that there is a positive correlation between digital skills and positive emotions, which suggests that there is a bilateral influence between these variables.

Keywords: digital competence, positive emotions, emotional intelligence, college student.

Resumen

Las competencias digitales y emociones son dos temas que en la actualidad están influyendo en el proceso de enseñanza y aprendizaje, dada la situación de la educación tanto en la modalidad presencial y en línea, es relevante conocer cómo se encuentran los estudiantes y si hay alguna influencia entre estas variables. Por lo tanto, este estudio es de carácter cuantitativo, correlacional y transversal y tiene como objetivo identificar el nivel de competencia digital, inteligencia emocional y emociones positivas, identificar las diferencias entre competencias digitales, inteligencia emocional y emociones positivas en relación al sexo y edad e identificar la relación entre las competencias digitales y las emociones positivas de los estudiantes universitarios. Se obtuvo una muestra de 134 alumnos de distintas carreras. En los resultados se encontró que los alumnos universitarios tienen un nivel medio de competencias digitales, emociones positivas e inteligencia emocional. No se encontraron variaciones por sexo y edad en las dos primeras, pero en la tercera se halló que las mujeres tienen mejores puntajes en las dimensiones de atención y claridad en comparación con los hombres. Por último, se observó que hay una correlación positiva entre las competencias digitales y las emociones positivas, lo cual sugiere que si hay una influencia bilateral entre estas variables.

Palabras clave: competencia digital, emociones positivas, inteligencia emocional, alumnos universitarios.

概要

数字技能和情感是目前影响教学过程的两个问题。鉴于面授和在线教育的情况，了解学生的状况以及是否有到这些变量的影响十分重要。因此，本研究为定量、相关性和横向研究，旨在确定数字能力、情商和积极情绪的水平，确定数字能力、情商和积极情绪之间与性别和年龄相关的差异，以及确定大学生数字技能与积极情绪之间的关系。通过来自不同专业的 134 名学生的样本，研究结果发现，大学生的数字技能、积极情绪和情商处于中等水平。在前两项中没有发现性别和年龄的差异。但在第三项中发现，与男性相比，女性在注意力和清晰度方面的得分更高。最后，我们观察到数字技能与积极情绪之间存在正相关关系，这表明这些变量之间存在双向影响。

关键词：数字能力，积极情绪，情商，大学生。

Аннотация

Цифровые компетенции и эмоции - два вопроса, которые в настоящее время влияют на процесс преподавания и обучения. Учитывая ситуацию как очного, так и онлайн образования, актуально знать, как обстоят дела у студентов и есть ли какое-либо влияние между этими переменными. Исследование является количественным, корреляционным, кросс-секционным и направлено на определение уровня цифровой компетентности, эмоционального интеллекта и положительных эмоций, выявление различий между цифровой компетентностью, эмоциональным интеллектом и положительными эмоциями в зависимости от пола и возраста, а также выявление взаимосвязи между цифровой компетентностью и положительными эмоциями студентов университета. Выборка составила 134 студента с разных программ обучения. Результаты показали, что студенты университетов имеют средний уровень цифровых компетенций, положительных эмоций и эмоционального интеллекта. В первых двух измерениях не было обнаружено различий по полу и возрасту, но в третьем было установлено, что женщины имеют более высокие показатели в измерениях внимания и ясности по сравнению с мужчинами. Наконец, было замечено, что существует положительная корреляция между цифровыми навыками и положительными эмоциями, что говорит о наличии двустороннего влияния между этими переменными.

Ключевые слова: цифровая компетентность, положительные эмоции, эмоциональный интеллект, студенты университета.

Introduction

In current times, we are living in a digital era in which Internet and technology are a primary source for the realization of any daily activity or oriented towards an area such as education, work or leisure, due to them facilitating access to platforms or data that can be of help in their development. So, it is needed to prepare students and future professionals with the necessary skills to interact in a globalized world, unsure, interdependent and highly complex, in which technology plays a fundamental role (Monroy et al., 2022).

Digital Competences are those abilities, knowledge and attitudes developed in technological aspects, informational, multimedia and communicative (Gisbert Cervera & Esteve Mon, 2011), as well as in the safe and critical use of technologies for work and leisure (Comisión de las Comunidades Europeas, [CCE], 2006).

Aside, the European Community has planted a frame to develop and understand Digital Competences (DIGCOMP), by means of five dimensions of performance: information, communication, content creation, security and problem solution (Ferrari, 2013). Its important to note that this model and areas of measurement for Digital Competences are used in research with teacher and student populations (Benaoui & Kassimi, 2021; Puertas Molero et al., 2018). This indicates the pertinence of determining levels of Digital Competence through the distinct dimension that weigh on this model, given its impact on research both past and present.

Also, instruments have been designed in a Likert scale which value these dimensions of Digital Competence, taking as a reference the DIGCOMP model (Benaoui & Kassimi,

2021; Çebi & Reisoglu, 2020; Gallego-Arrufat et al., 2019). Also, some tools have been created under the Common Frame of Teacher Digital Competence [INTEF] (Pascual et al., 2019; Pérez & Hernández-Sánchez, 2020), which was taken as a base for the DIGCOMP model, actualizing several aspects.

On other side, research on Digital Competences posits that students have a medium-high level in them, with the areas of communication, multimedia, information and security being high score levels, while technical aspects, problem solution and content creation have inferior scores (Çebi & Reisoglu, 2020; Esteve-Mon et al., 2020; Guillen-Gámez et al., 2020; Moreno et al., 2018). This means that students are better prepared on those dimensions related to the management of information, communication with others, data transference by digital mediums and protection of data, but require reinforcement in other abilities such as those related to the manipulation of digital tools and problem-solving using technologies.

On the same note, the variables of gender, age and academic grade are of influence, but not deterministic in the development of Digital Competence, as it was obtained that women perceive themselves as less competent than men in Digital Competences (Cabezas-González et al., 2021). Another variable of note in these studies was the positive attitude of students for the implementation of TIC in education (Maier & Koval, 2021).

Related to this, research has been ongoing on the topic of emotional intelligence in university students, on which it was found that there are differences related to gender on the emotional intelligence level, as women have better developed skills such as self-regulation and clarity (Del Rosal et al., 2018). Also, it has been found that university students have medium levels of emotional intelligence, which favors a more plentiful personality, a more grateful perception of life and empowers the development of competences related with their professional and academic work (Barrera-Gálvez et al., 2019).

Also, in research on university students happiness, it was fund that there are no significative differences on its perception by gender, age and career choice, however, when implementing an intervention program on the topic of positive emotions, there was a significative augment in subjective happiness on the experiment group over the control one.(Caballero-García & Sánchez Ruiz, 2018).

It is also relevant to consider that happiness is associated with academic performance, which brings a better development of students personal and academic life (Caballero-García & Sánchez Ruiz, 2018).

Digital Competences and Emotions

On the same page, it is important to focus on emotional factors in a more integral manner in future technologies acceptance research related to digital learning systems, in such a way that their designs stand on the context of technologies use in education and therefore can be effective for guaranteeing more successful adoption processes (Sahin & Sahin, 2021). This research remarks on the role of emotions in the digital world, as it is a variable that influences in their acceptance or rejection, and therefore must be taken in account for a better reception and implementation of these technologies.

Meanwhile, the use of the inverted classroom mode permits the participation of students in class activities, this was found by comparing two groups: one working on an inverted environment and one on a traditional one, in which it was found a significant difference in students' emotions towards learning, with students from the first group obtaining higher scores in emotional commitment to learning in comparison with their traditional counterpart. Therefore, inverted mode promotes the development of positive emotions towards learning (Jdaitawi, 2020).

From other point of view, in a study on learning mediated by text, video and videogames, e-learning implications suggest that when the content of a message is constant, both videogames and texts can be better to induce emotional intensity and reduce fatigue than video by itself, which could improve their motivation to learn when education is mediated by technologies (Adams & Toh, 2021). This indicates that students prefer to manipulate information for their learning, that meaning, having control over it, which can be a key towards a better reception of online education.

Also, there is a correlation between emotions and Digital Competences, as teacher that had a higher level on them during confinement developed positive feelings, proactive and collaborative when resolving problems that have appeared before them. Meanwhile, teachers with low scores of these competencies presented more negative experiences such as fear, anger, rejection and embarrassment. However, positive attitudes and emotions appeared in teachers with more frequency during the pandemic, such as calm, surprise and happiness (Villén Sánchez, 2020).

Therefore, it is considered relevant to study the relationship between Digital Competences and emotions on students, as these exercise some influence on them and this theme has just started to be studied, which implies a broad variety of possible results, on top of the theoretical apports it would bring. Also, coming from this results other variables could be studied that exercise or affect Digital Competences and emotions of students. Because of this, the objective of this study is to identify the level of Digital Competence, Emotional Intelligence and Positive Emotions related to sex and age of university students, and finally, identifying the relationship between Digital Competencies and positive emotions on university students.

Methodology

This study was designed from a quantitative focus with a correlational reach, as it aims to relate the variables of Digital Competence with positive emotions of future professionals, as well as its relation to other variables such as age and sex; its temporality is also transactional given the viability of the study.

Also, the instrument used for the recollection of data was developed using two Likert scales that value Digital Competence, emotional intelligence and emotions trough 106 items (Fernández-Berrocal et al., 1998; Mengual-Andrés et al., 2016; Schmidt, 2008).

Validation was acquired through expert review and the implementation of a pilot test with 50 students enrolled in a program for teacher formation, where a Cronbach Alpha of .971, .921 and .944 was acquired for each instrument respectively.

The population of the study was composed of students from different areas of the Universidad Federico Henríquez y Carvajal (UFHEC) of the Dominican Republic. A convenience sample method was used, as a hyperlink was shared to those students that were available. For the data analysis, descriptive statistics such as central tendency

and dispersion were used to compare variables such a T-Student, ANOVA and Pearson correlation.

For data collection, the American Educational Research Association (2011) ethical considerations were used, such as the solicitation of informed consent in the case of the e-mailed tests and the preservation of anonymity in their responses.

Student's Demographic Data

The population of this study was conformed by 133 students, of which 18 were men (13.6%) and 114 (86.4%) women, their ages oscillated between 17 and 52 years old, the majority of participants were between 17 and 26 (55.3%), followed by 27 and 36 (29.5%), and 37 to 52 (15.2%).

Students belonged to different places form the Dominican Republic, such as Santo Domingo (N=28), Bani (N=10), San Cristóbal (N=9), Neiba (N=5), among others The principal careers they belonged to were Infirmary (N=23), School Orientation (N=22), Educational Psychology (N=20), Clinical Psychology (N=20) and Accountability (N=14).

Results

In this section, an answer is given for the first objective of the study which is identifying the level of Digital Competence, emotional intelligence and positive emotions of university students, in the following paragraphs the main results of these variables are shown

It was found that the Digital Alphabetization dimension has the highest percentage with 1.01 in the "bad" section of the performance scale, meanwhile creativity and innovation had the lowest at 7.2 On the other side, the categories of optimal access and information use had the lowest percentage with 10.1, in contrast with creativity and innovation which had the highest with 12.6. The former indicates a better performance in the dimension of creativity and innovation along whit a lower on in digital alphabetization and access and use of information. (See Table 1).

Table 1

Student percentage according to their level in the performance scale, medium and standard deviation by dimension of Digital Competence

Dimension	Bad	Good	Can Improve	Optimal	Medium	Standard Deviation
Digital Alphabetization	10.1	38.8	39.0	12.1	2.53	.56
Access and Use of Information	8.5	40.5	40.9	10.1	2.52	.58
Communication and Collaboration	7.8	43.2	38.6	10.4	2.51	.60
Digital Citizenship	7.7	38.8	41.3	12.2	2.58	.64
Creativity and Innovation	7.2	38.6	41.7	12.6	2.59	.63

As it can be seen, the medium of the five dimensions is similar, varying only on the last digits from 2.51 to 2.59, standing out that it is the dimensions of communication and

collaboration and creativity and innovation which have these mediums. Meanwhile, the standard deviation was between .56 to .64, which does not represent a significative value. A general medium of 2.55 was found, which represents a medium level of performance in Digital Competences.

It is suggested that dimension of reparation had the lowest percentage with 12.5 in the "not in accordance" in the satisfaction scale, meanwhile attention had the highest value with 16.9. Also, in the scale of "totally in accordance", attention had the lowest score with 17.7, in contrast with reparation which was the highest with 21.5. Therefore, reparation has the highest satisfaction level among them. (See Table 2).

Table 2

Student percentage according to their level in the satisfaction scale, medium and standard deviation by dimension of emotional intelligence

Dimensions	Not In accordance	Some accordance	In accordance	High accordance	Totally in accordance	Medium	Estándar Deviation
Attention	16.9	28.3	25.3	11.5	18.1	2.85	1.20
Clarity	13.6	31.6	23.1	14.0	17.7	2.90	1.17
Reparation	12.5	30.6	22.7	12.8	21.5	3.00	1.20

As it was visualized, the mediums of these dimensions are very similar, with variance only from 2.85 to 3.00, in the same manner as the standard deviation which obtained a level of 1.17 to 1.20 between means but is not considered significative. It can be said that the general medium on emotional intelligence was of 2.92, which represents a low-medium level in the development of these skills.

It was also found that the optimism dimension had the lowest percentage with 2.4 in the "never" category, while life satisfaction obtained the highest score with 17.9. In the section of "always", optimism had the highest score, while life satisfaction was the lowest with 19.9. This indicates that the dimension that has the best performance is that of optimism, with life satisfaction needing more development (See Table 3).

Table 3

Student percentage according to their level in the frequency scale, medium and standard deviation by dimension of positive emotions

Dimensions	Never	Sometimes	Frequently	Always	Medium	Standard Deviation
Happiness and sense of humor	3.3	17.7	39.9	39.1	3.15	.7
Optimism	2.4	14.8	36.9	46.0	3.26	.67
Tranquility	9.8	24.2	33.5	32.4	2.88	.49
Gratefulness	10.9	16.8	31.9	40.4	3.01	.47
Interest-enthusiasm	3.8	16.2	39.3	40.8	3.17	.65
Life satisfaction	17.9	28.0	34.1	19.9	2.56	.73

As it was observed, the principal mediums correspond with the prior results, so, the dimensions of life satisfaction and tranquility correspond to a medium level, while other had a high level. Standard deviation had a variance between .47 to .73, which is not considered significative. The general medium is 3, which indicates a medium level of development in positive emotions.

To give answer to the second objective of the study, identifying the differences between digital competencies, emotional intelligence and positive emotions related to sex and age of university students, T-Student tests for independent samples and Pearson correlation test cross tabulated the variables.

Comparing Digital Competences with the sex of the participants, there were no significant differences ($t_{(130)}$ = - .472; p = .638), and as the significance level was higher than .05, it can be said that there ais no difference in the level of Digital Competence between men and women. There were also no significant differences found in accordance age (p = .804), which indicates that age is not a factor that influences Digital Competence in students.

Relating positive emotions with students sex there were not found significant differences ($t_{(130)}$ = - .333; p = .740), therefore it can be said that there is no difference between men and women according to their positive emotions level. Contrasting positive emotion levels with the age of the participants there were not found significant differences (p = .259), which indicates that the age of the students does not influence their positive emotions and vice versa. On the same note, linking emotional intelligence with the sex of the students, the following results were observed (see Table 4).

Table 4

Results of the T-Student test with the dimensions of emotional intelligence and participant sex

Dimension	Sex	Medium	t	gl	Sig.
Attention	Men	2.7705	-2.062	130.00	.041
	Women	3.3889	-1.827	21.033	.082
Clarity	Men	2.8158	-2.245	130.00	.026
	Women	3.4722	-1.943	20.769	.066
Reparation	Men	2.9225	-1.911	130.00	.058
	Women	3.5000	-1.666	20.848	.111

As visualized, the dimensions of attention and clarity when associated with sex demonstrated significative differences in their mediums, meanwhile reparation did not. This indicates thar women have a better development of attention and clarity than men, however, when relating the dimensions of emotional intelligence with ages there were not found significative differences (p = .364), which means that age does not make influence in he level of emotional intelligence of the participants.

To give answer to the third objective of the study (identifying the relationship between Digital Competence and positive emotions in university students) Pearson correlation tests were mad between Digital Competence and their respective dimensions, as well as with positive emotions and their dimensions, these results are shown in Table 5.

Table 5

Pearson Correlation between dimensions of Digital Competence and positive emotions

Dimensions	Tranquility	Life Satisfaction	Happiness and Sense of Humor	Optimism	Interest-Enthusiasm	Gratefulness	Positive Emotions
Digital Alphabetization	.053	-.124	.209*	.280**	.248**	.169	.228**
Access and Use of Information	.045	-.133	.191*	.253**	.233**	.168	.205*
Communication and Collaboration	.117	-.162	.262**	.326**	.307**	.198*	.282**
Digital Citizenship	.098	-.131	.261**	.314**	.290**	.234**	.287**
Creativity-Innovation	.038	-.115	.221*	.318**	.259**	.182*	.248**
Digital Competences	.077	-.145	.250**	.326**	.293**	.208*	.274**

Note. **. Correlation is significative at level .01 (bilateral). *. Correlation is significative at level (bilateral).

As was observed, most dimensions of Digital Competences were correlated with positive emotions, however, tranquility and life satisfaction did not correlate with other competence dimensions, while gratefulness neither correlated with digital alphabetization or access and use of information.

A significative bilateral correlation was found between digital competence and positive emotions (r= .274), which indicates that if one grows the other will too. Also, a significative correlation was found between digital competencies and the dimensions of happiness and sense of humor (r= .250), optimism(r= .326), interest-enthusiasm (r= .293) and gratitude (r= .208). This also happened in the case of positive emotions and the dimensions of digital alphabetization (r= .228), access and information use (r= .205), communication and collaboration (r= .282), digital citizenship (r= .287) and creativity and innovation (r= .248).

Also, significative correlations were found between digital alphabetization and happiness and sense of humor (r= .209), optimism (r= .280) and interest-enthusiasm (r= .248), same case in access and use of information with happiness and sense of humor (r= .191), optimism (r= .253) and interest-enthusiasm (r= .233).

Meanwhile, in the case of communication and collaboration, there was significant relation between happiness and sense of humor (r= .262), optimism (r= .326), interest-enthusiasm (r= .307) and gratefulness (r= .198). This repeated with digital citizenship and the dimensions of happiness and sense of humor (r= .261), optimism (r= .314), interest-enthusiasm (r= .290) and gratitude (r= .234). Lastly, creativity and innovation was significantly correlated with happiness and sense of humor, (r= .221), optimism (r= .318), interest-enthusiasm (r= .259) and gratitude (r= .182).

Discussion

In accordance with the results previously described, students have a medium level in digital competences, which is correspondent with the studies on this competenc-

es with university students which have intermediate or medium-high levels (Çebi & Reisoglu, 2020; Esteve-Mon et al., 2020; Moreno et al., 2018).

Also, there were not found any significative differences between men and women, as well as due to age of the participants in regards to their levels of digital competences, which is consistent with other research on the matter in which it is mentioned that there were also no differences by sex o age, or that these were not of influence on the results. (Cabezas-González et al., 2021; Monroy et al., 2022).

De igual forma, se halló un nivel medio en la inteligencia emocional en los estudiantes universitarios, lo cual es semejante a lo plasmado en otras fuentes (Barrera-Gálvez et al., 2019). También, se detectó que hay diferencias significativas en inteligencia emocional con respecto al sexo, específicamente con las dimensiones de atención y claridad en las que las mujeres tienen mayores puntajes que los hombres, lo cual en otros estudios no se manifiesta, pero si es similar que no hay diferencias significativas de estas habilidades con respecto a la edad (Del Rosal et al., 2018).

Samely, it was found that there no significant differences between positive emotions and sex and age, which is similar to what was found in a study about happiness in university students (Caballero-García & Sánchez Ruiz, 2018), so it can be assumed that positive emptions depend on other variables of influence.

Equally, significative correlations were observed between the dimensions of digital competences and positive emotions, such as happiness and sense of humor, optimism, interest-enthusiasm and optimism. It is worthwhile to remark that it was also found correlation between digital competence and positive emotions, which was significative and due to that of influence bilaterally, which was mentioned in previous studies as a positive relationship in which technologies improve students emotions (Adams & Toh, 2021; Sahin & Sahin, 2021) and when digital competence levels are improved positive emotions are also improved, and vice versa, if competences diminish so do emotions (Villén Sánchez, 2020).

Conclusions

In conclusion, university students have digital competence, positive emotions and emotional intelligence in a medium level, which indicates that there are areas of improvement, as in order to give response to this situations that can be problematic for students it is necessary to develop in a higher measure digital and emotional skills so they can face the social reality in which they live, taking into account the events that have happened before, such as online classes, work at home and the semi-presential modality that higher level schools implemented.

Also, variables such as sex and age are not of enough influence in the development of digital competences and positive emotions, so it is thought that variations in these are due to environmental, personal or educational factors. In contrast, emotional intelligence does have variations by sex on some of their dimensions favoring women, while age was not a factor of influence, which can be attributed to other variables to which students are subject to.

Lastly, it was found that there are positive bilateral correlations between digital competences and positive emotions, which senses that improving one of these would end up in the improvement of others, with the corresponding academic, professional and personal development.

The limitations of this study are that data was only collected in a single institution and with a non-probabilistic sample, which does not permit generalization; also, it was limited to measure positive emotions, so it is recommended for future studies to work with more institutions using probabilistic sample means and including other variables such as negative experiences to correlate with positive ones, and also with digital competences.

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References

Adams, A., & Toh, W. (2021). Student Emotion in Mediated Learning: Comparing a Text, Video, and Video Game. *Electronic Journal of E-Learning*, *19*(6), 575–587. https://doi.org/10.34190/EJEL.19.6.2546

American Educational Research Association. (2011). Code of Ethics. *Educational Researcher*, *40*(3), 145–156. https://doi.org/https://doi.org/10.3102/0013189X11410403

Barrera-Gálvez, R., Solano-Pérez, C., Arias-Rico, J., Jaramillo-Morales, O., & Jiménez-Sánchez, R. (2019). La Inteligencia Emocional en Estudiantes Universitarios. *Educación y Salud Boletín Científico de Ciencias de La Salud Del ICSa*, *7*(14), 50–55. https://doi.org/10.29057/icsa.v7i14.4437

Benaoui, A., & Kassimi, M. A. (2021). Using machine learning to examine preservice teachers' perceptions of their digital competence. *E3S Web of Conferences*, *297*, 01067. https://doi.org/10.1051/e3sconf/202129701067

Caballero-García, P. Á., & Sánchez Ruiz, S. (2018). La felicidad en estudiantes universitarios. ¿Existen diferencias según género, edad o elección de estudios? *Revista Electrónica Interuniversitaria de Formación Del Profesorado*, *21*(3), 1–18. https://doi.org/10.6018/reifop.21.3.336721

Cabezas-González, M., Casillas-Martín, S., & García-Peñalvo, F. J. (2021). The digital competence of pre-service educators: The influence of personal variables. *Sustainability (Switzerland)*, *13*(4), 1–14. https://doi.org/10.3390/su13042318

Çebi, A., & Reisoglu, I. (2020). Digital competence: a study from the perspective of pre-service teachers in Turkey. *Journal of New Approaches in Educational Research*, *9*(2), 294–308. https://doi.org/10.7821/naer.2020.7.583

Comisión de las Comunidades Europeas. (2006). Recomendaciones del Parlamento Europeo y del Consejo de Europa sobre las competencias clave para el aprendizaje permanente. *Diario Oficial de La Unión Europea*, 10–18.

Del Rosal, I., Moreno-Manso, J. M., & Bermejo, M. L. (2018). Inteligencia emocional y rendimiento académico en futuros maestros de la universidad de Extremadura. *Profesorado. Revista de Currículum y Formación Del Profesorado*, *22*(1), 257–275.

Esteve-Mon, F. M., Llopis, M. A., & Adell-Segura, J. (2020). Digital competence and computational thinking of student teachers. *International Journal of Emerging Technologies in Learning*, *15*(2), 29–41. https://doi.org/10.3991/ijet.v15i02.11588

Fernández-Berrocal, P., Alcaide, R., Domínguez, E., Fernández-McNally, C., Ramos, N. S., & Ravira, M. (1998). Adaptación al castellano de la escala rasgo de metaconocimiento sobre estados emocionales de Salovey et al.: datos preliminares. In *Libro de Actas del V Congreso de Evaluación Psicológica*.

Ferrari, A. (2013). *DIGCOMP : A Framework for Developing and Understanding Digital Competence in Europe*. JoinResearch Centre. https://doi.org/10.2788/52966

Gallego-Arrufat, M. J., Torres-Hernández, N., & Pessoa, T. (2019). Competence of future teachers in the digital security area. *Comunicar*, *27*(61), 53–62. https://doi.org/10.3916/C61-2019-05

Gisbert Cervera, M., & Esteve Mon, F. M. (2011). El nuevo paradigma de aprendizaje y nuevas tecnologías. *REDU. Revista de Docencia Universitaria*, *9*(3), 55–73. https://doi.org/10.4995/redu.2011.6149

Guillen-Gámez, F. D., Mayorga-Fernández, M. J., & Del Moral, M. T. (2020). Comparative research in the digital competence of the pre-service education teacher: face-to-face vs blended education and gender. *Journal of E-Learning and Knowledge Society*, *16*(3), 1–9. https://doi.org/10.20368/1971-8829/1135214

Maier, N., & Koval, T. (2021). How To Develop Digital Competence in Pre-Service Fl Teachers At University Level. *Advanced Education*, *8*(18), 11–18. https://doi.org/10.20535/2410-8286.227639

Mengual-Andrés, S., Roig-Vila, R., & Mira, J. B. (2016). Delphi study for the design and validation of a questionnaire about digital competences in higher education. *International Journal of Educational Technology in Higher Education*, *13*(1), 1–11. https://doi.org/10.1186/s41239-016-0009-y

Monroy, F., Llamas, F., Fernández-Sánchez, M., & Carrión, J. (2022). "Dis-Connected University Students?" Knowledge And Use Of Digital Technologies Among University Students. *Journal of Educators Online*, *19*(2), 1–12.

Moreno, M., Gabarda, V., & Rodríguez, A. (2018). Alfabetización informacional y competencia digital en estudiantes de magisterio. *Profesorado. Revista de Currículum y Formación Del Profesorado*, *22*(3), 253–270. https://doi.org/10.30827/profesorado.v22i3.8001

Pascual, M. A., Ortega-Carrillo, J. A., Pérez-Ferra, M., & Fombona, J. (2019). Competencias digitales en los estudiantes del grado maestro de educación primaria. El caso de tres universidades Españolas. *Formacion Universitaria*, *12*(6), 141–150. https://doi.org/10.4067/S0718-50062019000600141

Pérez, Á., & Hernández-Sánchez, A. M. (2020). Efectos del programa affective e-learning en el desarrollo de la competencia digital en estudiantes del grado en educación primaria. *Educatio Siglo XXI*, *38*(3), 129–150. https://doi.org/10.6018/educatio.416431

Puertas Molero, P., Ubago Jiménez, J. L., Moreno Arrebola, R., Padial Ruz, R., Martínez Martínez, A., & González Valero, G. (2018). La inteligencia emocional en la formación y desempeño docente: una revisión sistemática. *REOP - Revista Española de Orientación y Psicopedagogía*, *29*(2), 128–142. https://doi.org/10.5944/reop.vol.29.num.2.2018.23157

Sahin, F., & Sahin, Y. L. (2021). Examining the Acceptance of E-Learning Systems during the Pandemic: The Role of Compatibility, Enjoyment and Anxiety. *International Technology and Education Journal*, *5*(1), 1–10. https://www.proquest.com/scholarly-journals/examining-acceptance-e-learning-systems-during/docview/2608652164/se-2?accountid=13042%0Ahttp://oxfordsfx.hosted.exlibrisgroup.com/oxford?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&genre=articl

Schmidt, C. M. (2008). Construcción de un cuestionario de emociones positivas en población entrerriana. *Revista Iberoamericana de Diagnostico y Evaluacion Psicologica*, *2*(26), 117–139.

Villén Sánchez, C. (2020). *El profesorado y las tecnologías en tiempos de confinamiento por la pandemia COVID-19. Creencias sobre actitudes, formación, competencia digital e importancia de las TIC en educación.* Universidad de Salamanca. https://gredos.usal.es/bitstream/handle/10366/143691/TFM_VillénSánchezC_Profesoradoytecnologías.pdf?sequence=1&isAllowed=y