Digital Citizenship Approach and Teacher Profile

Aproximación a la ciudadanía digital y el perfil del profesor

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ARTICLE INFO

ABSTRACT

The aim of this paper is to analyse ideas about digital citizenship in Mexican teachers of pupils from elementary through to intermediate level, taking the following as independent variables: gender, age, region and the educational level taught. The hypothesis is that such variables affect what the teachers believe digital citizenship to be. This research is carried out on a group of 220 elementary and intermediate education teachers in a state located in northeast Mexico. Findings show that male teachers are more inclined to use indicators related to the improvement of academic performance, and less interested in indicators related to harmony in the group/school environment. In addition, young teachers tend to work with ideas that are more student-focused and less teacher-led, in contrast to their older peers, who favour more teacher-focused ideas over student-centred ones. Finally, elementary education teachers seek to focus their ideas on parents and the community instead of on students, while those teaching at intermediate level target their ideas more on students and less towards their parents and the community. If schools are planning to focus on the development of competences for digital citizenship, it is important to consider as part of the educational strategy how the profile of the teacher in terms of gender, age, and the educational level at which they teach influences their ideas.

RESUMEN

El objetivo de este documento es analizar la idea que tienen los profesores mexicanos de alumnos de nivel elemental a nivel intermedio sobre la ciudadanía digital, tomando las siguientes variables independientes: género, edad, región y nivel educativo impartido. La hipótesis es que tales variables afectan a lo que los profesores creen que es la ciudadanía digital. Esta investigación se ha llevado a cabo con un grupo de 220 maestros de educación primaria e intermedia en un Estado ubicado en el noreste de México. Los hallazgos muestran que los maestros varones están más inclinados a usar indicadores relacionados con la mejora del rendimiento académico, y menos interesados en los indicadores relacionados con la armonía en el entorno de grupo / escuela. Además, los maestros jóvenes tienden a trabajar con ideas que están más centradas en el estudiante y menos dirigidas por el maestro, en contraste con sus compañeros mayores, que prefieren ideas más centradas en el maestro sobre las centradas en el estudiante. Finalmente, los maestros de educación primaria buscan enfocar sus ideas en los padres y la comunidad en lugar de en los estudiantes, mientras que aquellos que enseñan a nivel intermedio enfocan sus ideas más en los estudiantes y menos hacia sus padres y la comunidad. Si las escuelas planean centrarse en el desarrollo de competencias para la ciudadanía digital, es importante considerar como parte de la estrategia educativa el perfil del profesor en términos de género, edad y nivel educativo en el que enseñan, puesto qeu influye en sus ideas.

1. Introduction

Information technology and the need to communicate have increased the use of technology among young people. Although technology provides advantages for human life, the behaviours displayed on the internet, together with the lack of training or education, may negatively affect young people's lives (Dias 2015). Digital citizenship poses varied and accentuated challenges, meaning that users of modern communication technologies should know how to use them efficiently and appropriately (Ozansoy 2017). This is the belief underlying the argument of Kim and Choi (2018), who posit that digital citizens need preparation to access the digital world, and that teachers are responsible for guiding and preparing these digital citizens. For instance, González-Pérez, Ramírez-Montoya & García-Peñalvo (2016), refer to the use of open-access educational resources to help pupils learn about environmental issues such as sustainability. Academics are also evaluating the implementation of open resources in teaching about energy and sustainability (González-Pérez, Ramírez-Montoya, García-Peñalvo, & Quintas, 2017) and the acceptance of technology as an educational tool in general (Gónzalez-Pérez, Ramírez-Montoya, García-Peñalvo, Valenzuela-González, & Pinto-Llorente, 2018). Guajardo Leal and Valenzuela-González (2017), also analyse the value of virtual learning environments in the effective teaching of issues surrounding energy.

Diverse attempts have been made by educational institutions to deal with the need to teach the skills required for digital citizenship. In the academic environment, several investigations report on the intervention techniques frequently employed to address issues such as cyber-violence, confrontation, empathy training, communication and social skills and digital citizenship (Conte & Filippozzi 2015). Such research efforts are not addressed exclusively towards students; it is also important for parents to be educated on issues such as cyber-bullying. Educational programmes have been developed to aid in the spread of information as well as to educate parents about these topics, with important results being obtained (Hutson, Kelly, & Militello 2018).

The involvement of schools in follow-up systems for such practices is now not only being analysed from a preventive point of view but also as a way of justifying the demanding competences of digital citizenship (Lucena 2016). Yasuda (2010) also discusses the prevention of cyber-bullying as part of a risk-management system. This paper assesses the importance of the role of tutors in cyber-bullying prevention and considers how schools can support both tutors and students.

Promoting digital citizenship seems to be a field which is growing in importance for educational institutions, although the orientation of such training ideas is still debatable. The aim of this paper therefore is to analyse ideas related to digital citizenship in elementary and intermediate education considering teacher profile such as gender, age, region and the educational level at which they teach. The research was carried out on a group of 220 elementary and intermediate education teachers in a state located in northeast Mexico. Ideas about digital citizenship could be related to: a) Reflecting on the effects of technology when used for abuse or learning; b) Focusing on students, parents, teachers or the community; c) Raising academic performance or student and group harmony.

1.1. Digital citizenship and education

According to Carter and Goldie (2017), responsible digital citizenship specifically involves communicating, connecting and interacting in an ethical manner through online media technology. Ethical interaction includes knowing what should and should not be done in a specific situation and involves identifying not only the possibility of participating in a digital community but addressing the issues involved in ensuring that participants are able to interact safely (Martuccelli, 2016).

If digital citizenship is to be truly open to all then it is necessary to learn more about what disturbs young people when they become involved in online communities and to participate in public debates about cyberspace. García-Galera, Muñoz and Pedrosa (2017) state that citizen involvement and participation in social systems is not a new phenomenon exclusive to digital technology. However, social networks and digital environments are transforming the way in which individuals, especially young people, are called to action. The competitive advantage that current technology offers is heavily influenced by variables such as empathy, closeness, and identification with a cause (Goulart 2015). Researchers should become familiar with the aspirations of young people in order to ascertain the best way to attract their attention and ensure their commitment to digital citizenship. In addition, it is necessary to acknowledge that the factors driving the participation of young people in citizen movements are predominantly emotional as opposed to rational (García & Muñoz 2017).

Although digital citizenship is arguably a positive phenomenon for young people, not all age groups view it in the same way. Morales Romo (2017) states that, although students are more motivated to use digital

communication and understand the empowerment that it can give, for older people digital citizenship can represent isolation and disconnection.

Citizenship involves public spaces, and relates directly to social issues (García, et al., 2016). Discovering unjust situations on the other side of the world and discovering something that happens in our own town are at the same distance—just one click away, and it is for this reason that a student taking online or face-to-face courses may experience digital citizenship in a different way to how older and less computer-savvy citizens view the world. Elcicek, Erdemci and Karal (2018) seek to determine levels of digital citizenship and social involvement of students who have had education in digital citizenship. They found that although the levels of digital citizenship and social involvement are no different when it comes to gender, levels of social involvement differ according to degree of digital education. It was also concluded that students who had received education in digital citizenship had a higher degree of social involvement in students.

Acquiring digital citizenship skills is part of both a formal and informal educational process. Learning how to move in a digital world involves becoming immersed in it (García-Valcárcel et al. 2016). Traditional education therefore is no longer enough; it must also include digital education. Gleason and von Gillern (2018) explore how the use of social networks in formal and informal learning environments may support the development of digital citizenship for secondary school students. As students spend more time online (i.e., an average of six hours in front of the computer screen per day, not including school hours and homework), developing skills that allow them to find, assess and share information in a responsible way, engage in a constructive conversation with people from different places and guarantee that their involvement online is safe, ethical and legal, is essential. Ideas about the integration of digital citizenship into education are also shared by Pedersen, Nørgaard and Köppe (2018), who suggest that the concept of hybrid education can help guide the utilisation of digital technologies in the field. They consider hybrid education as a methodology for fostering new ways of involvement, inclusion and commitment in education. These authors also argue that digital citizenship is becoming increasingly necessary in a culturally diverse and digitally mediated world.

There is a need not only to work on the development of skills to help take advantage of technology, but also to develop a critical sense in order to guard against manipulation and choose the best of the digital world. McGillivray et al. (2016) conclude that a critical digital citizenship agenda must be added to educational strategies, where young people are asked to consider how audiences work with digital mediation both inside and outside the school environment through practice. They also argue for educating students in critical thinking skills, and that courses in analysing the benefits and dangers of digital society should be compulsory.

1.2. Teachers in digital citizenship

Working on digital citizenship also involves considering the peculiarities inherent in the educational environment, with the available infrastructure and the skills that teachers develop over the course of their careers also being highly relevant (Ávila, 2016). McGillivray et al. (2016) found there to be various significant inequalities in terms of school provision, access to infrastructure, supply of adequate equipment and availability of qualified staff. Appropriate leadership is required for digital projects to become integrated into daily learning practices.

In addition to proper training for both teachers and students, it is particularly important to educate parents about cyber-bullying, digital identity, fingerprint impact and appropriate use of social networks (Martin et al., 2018).

Teachers need to be highly prepared in order to connect with students about issues surrounding digital citizenship. If what goes on in the digital world is not adequately understood by teachers, they will be unable to adequately frame their discourse to relate to the experiences of young people (Viñals & Cuenca 2016). Such convergence however is difficult to achieve; Zhou, Yin and Zhou (2017) found that the widespread dissemination of violence and harmful information on the internet has the capacity to distort the ideas of students, and it is difficult for teachers to understand these kinds of discourse when they ignore what students are exposed to.

1.3. Digital citizenship and teaching

Despite the importance of working on digital citizenship education, researchers have found that there is little interest in integrating the topic into the educational agenda. Karaduman (2017) finds that there is a general lack of information relating to digital citizenship issues within the social studies area, and that such information, if it

is present, is lacking in both scope and detail. His study makes several suggestions as to how issues surrounding digital citizenship could be incorporated into the social studies teacher training programme.

Researchers working on issues related to digital citizenship have already identified low levels of preparation in teachers and highlighted the need to develop education programmes capable of addressing the problem. Choi, Cristol and Gimbert (2018) refer to three findings from their research on teachers: (1) relatively low levels of digital citizenship, internet political activism and critical perspective among teachers; (2) a strong connection between the self-sufficiency promoted by the internet and digital citizenship, and (3) that three variables (familiarity with the internet, availability of teaching technology and years of work experience) have a significant impact on teacher perceptions about digital citizenship. Lastly, their study offers recommendations for furnishing teachers with the proper knowledge and makes suggestions for appropriate online behaviour.

However, teachers are not the only group in need of consideration. Those in charge of educational institutions can help support digital citizenship through their leadership skills. Thannimalai and Raman (2018) found an important link between the leadership demonstrated in IT skills by school principals and administrators and the amount of technology employed by teachers. It is therefore apparent that educational programmes must highlight leadership based on technology in order to improve the integration of that technology in classrooms (López & Bernal 2016).

Digital citizenship should not be treated in isolation but should instead be integrated into the educational curriculum by including it in different subjects. Van de Oudeweetering and Voogt (2018) carry out an exploratory factorial analysis on activities directed by teachers which foster the skills of 21st-century students. The results suggest six dimensions for 21st-century competences: digital literacy, innovative thinking, critical thinking and communication, (virtual) citizenship, self-paced learning and (computer-assisted) collaborative learning. The six dimensions revealed however some important commonalities, most important of which was that teachers failed to adequately understand how some aspects of these 21st-century competences were motivated by activities unrelated to those done in class. Teachers already had very specific preconceived ideas about curricular innovation.

Several researchers have proposed different instruments for measuring digital citizenship, and these measurements not only give us a reliable overview of what is going on but allow us to contrast digital citizenship with other environments and carry out comparative studies in order to measure efficiency of uptake. According to Kim and Choi (2018), the categories in the existing Digital Citizenship Scales are too broad and insufficiently student-centred. The lack of a solid scale means that the criteria employed by teachers to measure levels of digital citizenship in their students are unclear, leading to issues with both implementing the course and attaining the desired goals. Kim and Choi (2018) propose a Digital Citizenship Perception Scale for teenagers coordinated by those teachers with particular responsibility for digital education: this scale would yield information about the orientation and educational needs of the school and would satisfy the variables considered in the digital citizenship scale, one of which is ethics in the digital environment.

In addition to the digital citizenship scale, Choi, Glassman and Cristol (2017) present a complete hierarchy of digital citizenship based on carefully measured, global and inclusive components in order to measure the skills, perceptions and levels of involvement of young adults in the internet community. This hierarchy proved to have a convergent relation with how efficiently individuals used the internet and a divergent relationship with internet anxiety. Thanks to this study, it is possible to understand the perceptions of an individual about their skills and development as active members and/or critics of online communities in the local, national and international spheres.

Other research on empirical measurements addressing issues concerning digital citizenship deals with ideas related to civil respect and engagement online. In their study, Jones and Mitchell (2016) state that online respect scores decreased among young people and scores in both sub-scales were higher in girls than in boys. Both online respect and civil engagement are negatively related to the perpetration of online bullying and positively related to involvement by active viewers, after controlling for other variables. In preparing pupils to be digital citizens, we need to develop and assess digital citizenship education programmes in order to determine how efficiently they foster both respectful behaviour and civil engagement online.

Finally, additional studies show differences between digital citizenship and civic citizenship. Choi (2016) found four main categories that build the concept of digital citizenship: ethics; means and information; literacy, involvement and engagement, and critical resistance. Based on these complete and interlinked digital citizenship categories, the latter needs to be understood as a multidimensional and complex concept with an important non-linear relation with civic lives.

The dimensions of digital citizenship, i.e. traditional citizenship education and extracurricular activities oriented towards civic commitment, may be integrated by means of a curriculum which includes reference to

social networks. Finally, authors such as Gleason and von Gillern (2018) offer suggestions for teaching and learning through social networks to teachers, members of the community and parents and professionals, among others.

To sum up, it is possible to affirm that despite the importance of developing competences in digital citizenship in both formal and informal learning spaces, educational institutions are doing little to incorporate such challenges. It is necessary to consider how the school system can support citizenship education digitally, as citizenship is exercised both in person and online.

2. Methodology

From September to November 2017, a workshop on digital citizenship education was held in a state in northeast Mexico, targeted at basic (preschool and primary level) and intermediate (secondary level) state schoolteachers.

The sociodemographic profile of the sample which includes the 240 teachers that took part in the study is as follows:

	Sub-group 1	**Sub-group 2**
Gender	Women: 80% (192)	Men: 20% (47)
Age	Young people (younger than 50): 45% (109)	Middle-aged people (older than 50): 54% (130)
Region	Urban: 50% (120)	Non-urban: 50% (120)
Educational level	Elementary education: 73% (146)	Intermediate education: 27% (54)

Table 1. Sociodemographic profile of the sample. Source: author's own.

The sample in this study is non-probability. In this case, the choice of participants does not depend on the probability but on the causes related to the characteristics of the research. In this study, 900 teachers participated in the workshops offered, but only 240 teachers decided that they could make some effort to link education with the digital society. The participation of the 240 teachers was voluntary and anonymous. With these 2 conditions, it was guaranteed to comply with the ethical standards with which this type of research must be carried out.

According to the four independent variables—gender, age, region and educational level—the three dependent variables are analysed: type of action, intended audience for the action and effectiveness-measurement indicator.

2.1. Hypotheses

Based on the above, the following 12 hypotheses are created to assess the dependence between the variables:

Hypothesis 1: teacher gender (male/female) influences ideas about digital citizenship.

a) Type of action for digital education training (H1a)

   a. Use of technology for learning purposes
   b. Educational projects based on technology
   c. Reflection about the effects of technology

b) Target audience for ideas about digital citizenship (H1b)

   a. Students
   b. Teachers
   c. Community and parents

c) Indicators measuring the effectiveness of digital education training (H1c)

   a. Improved academic performance
   b. Greater group/school harmony

Hypothesis 2: teacher age (young/old) influences ideas about digital citizenship.

a) Type of action employed for digital citizenship training (H2a)

a. Use of technology for learning purposes
b. Educational projects based on technology
c. Reflections about the effects of technology

b) Target audience for ideas about digital citizenship (H2b)

a. Students
b. Teachers
c. Community and parents

c) Indicators measuring the effectiveness of digital citizenship training (H2c)

a. Improved academic performance
b. Greater group/school harmony

Hypothesis 3: regional origin (urban/rural) of the teacher influences digital citizenship

a) Type of action for digital citizenship training (H3a)

a. Use of technology for learning purposes
b. Educational projects based on technology
c. Reflections about the effects of technology

b) Target audience for ideas about digital citizenship (H3b)

a. Students
b. Teachers
c. Community and parents

c) Indicators measuring the effectiveness of digital education training (H3c)

a. Improved academic performance
b. Greater group/school harmony

Hypothesis 4: Digital citizenship involvement according to the educational level where teachers work (elementary/intermediate)

a) Type of action for digital citizenship training (H4a)

a. Use of technology for learning purposes
b. Educational projects based on technology
c. Reflections about the use of technology

b) Target audience for ideas about digital citizenship (school stakeholders) (H4b)

a. Students
b. Teachers
c. Community and parents

c) Indicators measuring the effectiveness of digital education training (H4c)

a. Improved academic performance
b. Greater group/school harmony

2.2. Statistical method

The chi-square test is utilised to test the hypothesis that there is no relationship between the variables. The test analyses whether the frequencies observed are in fact different from those expected if there is a lack of correlation. If there is no relationship between the variables, the resulting table must be equal to the expected

frequency, and vice versa. The table compares observed and expected frequencies (Hernández, Fernández-Collado, & Baptista 2006).

Unlike a perception questionnaire, where reliability criteria are usually important for validating constructs, this study measures only teachers' preferences about efforts to link education in the digital world. The significance levels of the square chi test will be the criterion to follow to demonstrate the confidence level (0.05) of the research findings.

3. Discussion of results

	Sub-group 1	Sub-group 2
H1. Gender	**Women professors**	**Men professors**
	Hypothesis not accepted.	*Efficiency indicator:* (ideas focus on) Academic performance: standardized residual of 1.3 (ideas focus on) Harmony (Group/School): standardized residual of -1.4 Pearson chi-square *test:* 0.035
H2. Age	**Young professors**	**Middle-aged professors**
	(ideas focus on) Students: standardized residual of 1.6 (ideas focus on) Teachers: standardized residual of −2.0 Pearson chi-square *test:* 0.001	(ideas focus on) Students: standardized residual of −1.5 (ideas focus on) Teachers: standardized residual of 1.8 Pearson chi-square *test:* 0.001
H3. Region	**Urban**	**Non-urban/rural**
	Hypothesis not accepted.	Hypothesis not accepted.
H4. Educational level	**Elementary education**	**Intermediate education**
	(ideas focus on) Students: standardized residual of −1.3 (ideas focus on) Parents and community: standardized residual of 1.1 Pearson chi-square *test: 0.024*	(ideas focus on) Students: standardized residual of 2.1 (ideas focus on) Parents and community: standardized residual of −1.7 Pearson chi-square *test: 0.024*

Table 2. Statistical Results. Source: author's own.

3.1. Analysis of the descriptive statistics of the sample

Professor's ideas about digital citizenship and main focus: Learning purposes (38.1%); Educational projects based on technology (32.2%); Reflection about the effects of technology (29.7%).

Professor's ideas about digital citizenship and target focus (school stakeholders): Teachers (41.1%); Community and parents (36.4%); Students (22.2%).

Professor's ideas about digital citizenship and effectiveness indicators: Improved academic performance (56.5%); Greater group/school harmony (43,5%).

3.2. Hypothesis testing

3.2.1. Hypothesis test for ideas about digital citizenship and the gender variable

The gender of the teacher (woman/man) was analysed as an independent variable with the aim of measuring its effect on ideas about digital citizenship and education. The H1c hypothesis is not proven in the case of women,

but it is accepted in the case of men; according to the chi-square statistics for the tests of independence, there is a statistically significant difference between the gender of the teacher and the digital citizenship indicators they plan to employ. More male teachers plan to use academic performance-related indicators (70.2%, with a standardized residual of 1.3), with fewer male teachers planning to measure group or school-harmony related indicators (29.8%, with a standardized residual of −1.4). The chi-square coefficient in these tests was 0.035, indicating a significant relationship.

Although gender has been studied in the area of digital citizenship, these previous studies have focused on students and not on teachers, as is the case with this article, where male teachers are less interested in focusing efforts on the socialization challenges of their students. In previous studies, based on students, no difference has been found, men and women show the same level of digital citizenship, as demonstrated by the results of Elcicek, Erdemci and Karal (2018).

3.2.2. Hypothesis test for ideas about digital citizenship and the age variable

The age of the teacher (younger/older) was analysed as an independent variable with the purpose of measuring its effect on the idea of digital citizenship education. Hypothesis H2b is accepted according to the chi-square statistics for the tests of independence; there is a statistically significant difference in terms of teacher age. Projects proposing integration of technology into the educational environment were more frequently highlighted by younger teachers, who also gave more importance to a student-centred approach (standardized residual of 1.6). Those projects focusing on teachers were mentioned less often by younger respondents, with more of them deciding not to concentrate on this area (standardized residual of −2.0). Student-centred projects were mentioned less often by middle-aged teachers, with more of them deciding not to focus their project on this area (standardized residual of −1.5). Teacher-focused projects were more frequently highlighted by middle-aged respondents (standardized residual of 1.8). It should be noted that projects focused on parents and the community showed no differentiation for age. The chi-square statistics for these tests is 0.001, making such a relationship statistically significant.

Although there are academic studies analysing the teaching and use of social networks and considering the different target audiences (students, parents and community) as shown by Gleason and von Gillern (2018), it has not been analysed how the teacher's decision can influence where to focus efforts to educate in digital citizenship, as presented in this article. In addition, there are authors who have explained the importance of focusing efforts to prepare teachers for access to digital citizenship. For example, Avila (2016) mentions the importance of developing teachers' skills for digital citizenship. As well, Zhou, Yin and Zhou (2017) refers to the need for the teacher to be well prepared to respond to the needs of students in the digital world. Finally, Choi, Cristol and Gimbert (2018) find that teachers are effectively unprepared to be part of the digital environment. In relation to the concern of previous authors to prepare teachers in the digital world, this article finds that the middle-aged teacher also considers it relevant that the teacher is properly prepared, hence the importance of schools designing strategies focused on the teacher, and not only on students. It is very important that the teacher has formative training to deal with the challenges demanded by the digital society.

3.2.3. Hypothesis test for ideas about digital citizenship and the educational level variable

The variable for educational level at which teachers work (elementary/intermediate) was analysed as an independent variable in order to measure its effect on ideas surrounding the integration of digital citizenship into education. Hypothesis H4b is accepted; according to the chi-square statistics for tests of independence, there is a statistically significant relationship with the educational level at which teachers work. Projects proposed by elementary education (primary school) teachers seeking to incorporate technology into a student-centred educational environment were not mentioned as frequently (standardized residual of −1.3). Conversely, projects proposed by elementary education (primary school) teachers seeking to incorporate technology into a community/parent-based educational environment were more frequently mentioned (standardized residual of 1.1). Those teaching at intermediate level (high school) teachers showed statistical results that contrasted with those observed at primary level (primary). Those teaching at this level (high school) particularly mentioned the student-centred nature of their projects (standardized residual of 2.1). These high-school teachers however were less likely to focus their projects either on parents or the community (standardized residual of −1.7). The chi-square statistics for these tests is 0.024, indicating a significant relationship.

While there are academic studies that have found that it is important for students to be well prepared to face the digital world and develop as active citizens while avoiding the risks and threats on internet (Gleason and von Gillern, 2018; Carter and Goldie, 2017; Martuccelli, 2016; Kim and Choi, 2018), there are other authors who have explored the importance of educating parents, not just students. In this study it is demonstrated how the parent is considered by the teachers as an important agent to be educated in the digital world, this is in accordance with the findings previously presented on academic research (Hutson, Kelly & Militello, 2018; Martin, 2018; Gleason and von Gillern, 2018).

In sum, regarding the type of project to be implemented as part of digital citizenship training courses, it should be noted that out of the four independent variables, none had significant influence over suggested project-type. That is, the type of digital education project is not dependent on the gender, age, region or level of education at which the teacher works. In relation to the question 'Target audience for digital citizenship ideas', only the age of the teacher and the educational level at which they work affects such decisions. Regarding the question of which indicator should be used to assess ideas for training in digital citizenship, men tend to use academic performance as opposed to group/school harmony as a yardstick. The remaining independent variables have no impact on the type of indicators defined.

4. Conclusions

In conclusion, male teachers seem to be more inclined towards the use of indicators related to an improvement in academic performance; they display less interest in the use of indicators associated with group/school harmony. This in turn may give rise to limited consideration on the part of male teachers of the possibilities available to them for measuring digital citizenship.

In addition to the above, young teachers are more drawn to student-centred ideas as opposed to teacher-led activities. This contrasts with middle-aged teachers, who are drawn more towards teacher-lead activities than those which are student-centred. Age is therefore considered a governing factor in how teachers approach school stakeholders, and a factor which can lead teachers to ignore the importance of working with others in a more integrated way.

Lastly, elementary education teachers seek to target their ideas more towards parents and the community rather than students, in contrast to those teaching at intermediate level, who have a more student-centred focus. The profile of those who teach at a educational level may result in some school stakeholders receiving more attention than others, with a resulting lack of attention being paid to cooperation on issues surrounding digital citizenship.

It is concluded that, for schools planning to focus on the development of digital citizenship, it would be convenient to consider the influence of teacher age and gender as well as the educational level at which they teach, as these variables may affect ideas about how the subject is incorporated into the curriculum. Finally, those educational institutions with a specific teaching profile should avoid focusing specifically on some school stakeholders to the detriment of others. Additionally, depending on teacher profile, they may well seek to apply an indicator and ignore other measurement possibilities. Endeavours to include digital citizenship in the curriculum should ensure that important variables are addressed, particularly as the area itself is relatively new. Both these findings and the ideas of teachers must be considered before any policy can be implemented. It is therefore necessary to expand this type of research to other educational contexts, with questions directed towards improving the way in which teachers incorporate digital citizenship as part of their teaching-learning strategy.

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