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Artículos científicos

Encuesta: ciberviolencia dirigida al docente a través de una examinación de autenticidad por dictamen de árbitros

Survey: Cyberviolence Directed at the Teacher Through an Examination of Authenticity by the Opinion of Referees

Inquérito: ciberviolência dirigida ao professor através de um exame de autenticidade por parecer de árbitros

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Resumen

Frente a los altos índices de ciberataques en la actualidad, especialmente en México, es necesario indagar la vulnerabilidad no ya solo de los estudiantes, sino también del docente. Y para ello se requiere de un instrumento que dé cuenta de esta problemática existente. Considerando lo antes expuesto, el objetivo de esta investigación fue constatar la validez de contenido de un instrumento tipo encuesta cuyo propósito es conocer la situación de ciberviolencia del estudiante hacia el docente. Se tomó como referente el cuestionario incluido en el trabajo doctoral realizado en el Instituto de Educación de la Universidad Ciudad de Dublín, en Irlanda, por Challenor (2018). El estudio consistió en tres fases: *1)* la búsqueda de bases teóricas, *2)* el proceso de traducción y *3)* la validez mediante un grupo de ocho investigadores que fungieron de jueces. En cuanto a la validez de criterio, se utilizó la prueba de Friedman. Los hallazgos muestran significancia entre los expertos en la validez

del contenido del instrumento evaluado. Como producto final se obtuvo un bosquejo con un total de 33 interrogantes y cinco categorías: *1)* Datos sociodemográficos, *2)* Capacitación, *3)* Seguridad en Internet, *4)* Ciberviolencia del estudiantado al docente a nivel personal y observador y *5)* Afrontamiento.

Palabras clave: ciberviolencia, validación de expertos, violencia, violencia escolar.

Abstract

In view of the high rates of cyber-attacks at present, especially in Mexico, it is necessary to investigate the vulnerability not only of students, but also of teachers. This requires an instrument that accounts for this existing problem. Considering the above, the objective of this research was to verify the content validity of a survey-type instrument whose purpose is to know the situation of cyber-violence of the student towards the teacher. The questionnaire included in the doctoral work conducted at the Institute of Education, Dublin City University, Ireland, by Challenor (2018) was taken as a reference. The study consisted of three phases: *1)* the search for theoretical bases, *2)* the translation process and *3)* validity through a group of eight researchers who served as judges. For criterion validity, the Friedman test was used. The findings show significance among the experts in the content validity of the instrument evaluated. The final product was an outline with a total of 33 questions and five categories: *1)* Sociodemographic Data, *2)* Training, *3)* Internet Safety, *4)* Student Cyber-Violence Against Teachers at a Personal and Observer Level, and 5) Coping.

Keywords: violence, school violence, cyber violence, expert validation.

Resumo

Diante dos altos índices de ciberataques atuais, principalmente no México, é necessário investigar a vulnerabilidade não só dos alunos, mas também do professor. E para isso é necessário um instrumento que dê conta desse problema existente. Considerando o exposto, o objetivo desta pesquisa foi verificar a validade de conteúdo de um instrumento do tipo survey cujo objetivo é conhecer a situação de ciberviolência do aluno em relação ao professor. Tomou-se como referência o questionário incluído no trabalho de doutorado realizado no Institute of Education da City University of Dublin, na Irlanda, por Challenor (2018). O estudo constou de três fases: 1) busca de bases teóricas, 2) processo de tradução e 3) validação por meio de um grupo de oito pesquisadores que atuaram como juízes. Quanto

à validade de critério, foi utilizado o teste de Friedman. Os achados mostram significância entre os experts na validade de conteúdo do instrumento avaliado. Como produto final obteve-se um draft com um total de 33 questões e cinco categorias: 1) Dados sociodemográficos, 2) Formação, 3) Segurança na Internet, 4) Ciberviolência do corpo discente ao professor a nível pessoal e observador e 5) Enfrentamento.

Palavras-chave: ciberviolência, validação de especialistas, violência, violência escolar.

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Introduction

Derived from the use of electronic media during the teaching-learning process, "new" forms of violence have been experienced in school daily life, since schools are a reflection of society and its culture. Violence is seen here as a preventable social, complex, multicausal and multifactorial phenomenon. The various factors involved do so at different levels of significance and consequences, all of which have implications for the school environment. Its origins come from the imbalance of power between the members of the educational community. It is worth noting that violence brings harm to both subjects, the perpetrator and the victim (Rodney, Bulgado, Estévez, Llivina and Disla, 2020).

Violence as a consequence of the new media cultures, where a multidirectional socialization is exercised, and due to its own characteristics of anonymity, has made the teacher a latent cybervictim of students, parents, co-workers and school administrators. A developing society must visualize the role of the teacher as a representative of knowledge; it constitutes the embodiment of culture; His success depends, in addition to his qualities, on the social reality that transcends him (Usagui, 2005). A society that disrespects its teachers is a society in decline. It is under this postulate that the present work will seek to focus on recovering its image and its position as the guiding axis of development.

It is intended, then, to consider the doctoral study carried out at the Institute of Education of the City University of Dublin, in Ireland, by Challenor (2018), entitled Cyberbullying of Post-Primary Teachers in Ireland, with the purpose of resuming the instrument used there. carried out, carry out the corresponding translation, study its reliability and consider its validity.

This study provides an understanding of the various situations that teachers experience on the Web: how they self-regulate their profiles on social networks, the type of prevention and security tools they use, their attitudes during communication with their

students online. , the types of cyberviolence to which they have been subjected, the deterioration of their physical and mental health, the effects of severe stress, fear for their personal safety and their poor performance in the performance of their practice as a result of the cyberviolence experienced.

According to Challenor (2018), previously there was no research that had examined the experiences of cyberviolence recounted first-hand by Irish teachers and that included frequency, victimization and time periods of the attacks, in addition to investigating the tactics used, their impacts and effects on the school and the community, for which reason he had to resort to the questionnaires used by McGuire and O'Higgins Norman (2016, cited in Challenor, 2018), Smith, Mahdavi, Carvalho and Tippett (2006, cited in Challenor, 2018) and the New Jersey School Climate Staff Questionnaire, developed by the New Jersey Department of Education.

Taking the above into account, the following questions arose: is the questionnaire used by Challenor (2018) reliable in the Mexican context? What is the assessment issued by the experts? And what is the validity of the instrument issued at the discretion of judges?

To carry out this study, we started from the concept of validation of judges. Regarding validation, according to Corral (2009), an instrument must reflect a specific domain of the content of the characteristic or trait to be measured. In his own words, "it is about determining to what extent the items or reagents of an instrument are representative of the universe of content of the characteristic or trait to be measured" (p. 230). And as for reliability, it refers to the measurement procedure considering its accuracy and precision.

A judge is that person whose job is focused on evaluating the items previously formulated in an instrument. It should be noted that, if they are researchers, their line of research does not necessarily have to belong to that of the study (Supo, 2013). Here the validation of judges is considered because the issue of student cyber-violence towards teachers has been little studied in Mexico; the investigations have rather focused on cyberviolence among the students themselves.

For its part, the concept of expert, for Supo (2013), points to a person with extensive experience in the development of studies within the line of research or that person who, without being a researcher, has extensive knowledge of the subject and can be considered as such. In this case, since there were no experts or researchers in the line, we opted for the validation of judges.

According to Downing (2003), validity is stated as a hypothesis and uses theory, logic, and scientific methods to collect information and support the proposed interpretations. Likewise, the authors Villasís, Márquez, Zurita, Miranda and Escamilla (2018) mention that this term in investigative contexts refers to what is true or very close to reality.

This research aims to contribute to the development of an instrument that can be used to measure the frequency, tactics and types of cyberattacks propitiated to the teacher; Similarly, it seeks to know the increase in cyberviolence in the school context, the effects caused to the victim and the school community. Having an effective tool in schools will make it possible to regularly assess the phenomenon and thus implement prevention strategies and support for victims, as well as programs to reduce violence and cyber-violence, in order to build an education for peace. .

Having said the above, the purpose of this study is to examine the authenticity of content through the opinion of referees, who, it is intended, will ponder an instrument to evaluate cyberviolence directed at teachers. For the development of this study, the Cuban standard NC 49:1981 was used, suggested by Ortega (2008), which helps to know the number of judges necessary to carry out an investigation with acceptable reliability. In addition, the Delphi technique was used to determine the referees, that is, who will make up the select group of judges in the study.

The interaction between the referees and the researcher was carried out through the Google Forms tool, following the recommendations of Leyva, Pérez and Pérez (2018), authors who point out that this is an instrument that allows researchers to collect information from an easy and free way. The judges were monitored during the completion of the survey in order to maintain clarity in the activities; If there were doubts, an answer was given at that very moment.

For the examination of the collected information, the advice of the authors Ramírez and Polack (2020) was followed, who suggest using the Friedman test, since it helps to contrast K-means in related models.

Given the execution of the study, the effects obtained offer reliable information according to the judges among their answers.

Methodology

Participants

Non-probabilistic and discretionary sampling was used to select the collaborators. The practice, understanding and knowledge of issues related to this investigation were items that were taken into account. To establish the reliable number of arbitrators, the NC 49:1981 standard was applied.

At first, email was implemented, a means by which a personalized invitation was made to each collaborator, and the purpose of the study was briefly explained. Afterwards, given the response of each participant, the Google form was sent so that each of them answered objectively what had been sent.

Method

This is an exploratory and descriptive investigation and adopts a quantitative, non-experimental approach; situated level, since a representation, analysis and weighting of the operability of the variables involved in the research process was followed; non-experimental, since, during the execution of the study, there was no surveillance of the variables and these were not manipulated, and quantitative since, in order to respond to the hypotheses, a correct analysis and a reliable collection of information will be required. .

Procedure

The study followed three stages, proposed by Poblano, López, Gómez and Torres (2019), García, Poblano, Reyes, Cuamea and Juárez (2021) and Rodríguez, Poblano, Alvarado, González and Rodríguez (2021). In a first stage, the theoretical bases were developed, beginning with the approach; in the same way, the scope and justification were built; Finally, the objective and the problem that would guide the present investigation were raised. To do this, a search of existing literature on the topic addressed was carried out. In this work, the Google Trends tool was used, of which Oteros, García, Viuf and Galán (2015) express that it provides results of the periodicity of exploration of a term. It should be noted that open databases such as Researchgate, Google Scholar, Scielo, etc. were used. The selection criteria used were: 1) the document had to correspond to the research topic analyzed and 2) the articles, reports, book chapters or theses reviewed had to be written in Spanish or English; jointly, they had to be disclosed in peer-reviewed and indexed journals.

In a second stage, he devoted himself to working on validity, with the help of expert researchers. In a first approach, they were sent an email where the purpose of the examination was briefly explained. Those who answered positively were sent a second email, this time the Delphi method was applied. It was possible to obtain the number of eight referees, which is necessary according to the Cuban standard in order to obtain a reliability of 95%.

For the third, the content authenticity tests were counted with the selected collaborators. For the study to be successful, each referee maintained contact with the researcher at all times: if any judge had any doubts, they were resolved immediately.

Once the previous stage was completed, the information from each collaborator was collected. Then, the calculation of the authenticity of the content continued. For this, as mentioned at the end of the introduction, the Friedman test was used. Here assumptions were made, which helped build the p-value. Kappes and Riquelme (2021) allude that this value is used as a verification tool to provide a solution to research that uses hypotheses.

The assumptions made were:

H_0: $X \sim N$

H_1: $X \nsim N$

Results

As a first instance, through the review of the topic, it was possible to identify and establish the variables that the instrument should have. As a result, only one instrument of a cyber-attack on a teacher was found in Ireland. The translation of the instrument was carried out, consisting of 52 questions, of which six questions are found in the first section, corresponding to demographic information; In the second section, there are four questions related to the training acquired; a third section, with 17 questions, addresses the use of Internet security, obtained from the study by McGuire and O'Higgins Norman (2016, cited in Challenor, 2018); a fourth section, made up of 11 questions, focuses on the issue of cyberviolence between students and teachers on a personal level, where the questionnaire developed by Smith et al. (2006, cited Challenor, 2018); The fifth section, made up of 11 questions, focuses on the teacher observing acts of cyberviolence from the student body to the teacher colleague, where the questionnaire developed by Smith et al. (2006); In a final section, the topic of coping is resumed, consisting of three questions.

In the end, it was possible to have a first draft of the tool, which was built by four main variables and 18 efficacy environments (Table 1).

Table 1. Assessment instrument: quality

Main endpoint	Quality criteria
Sociodemographic data	Clear, formal, inclusive writing, without repetition of words and consistent with the criteria to be evaluated,
Training	Clear, formal, inclusive writing, without repetition of words and consistent with the criteria to be evaluated,
Internet safety use	Clear, formal, inclusive writing, without repetition of words and consistent with the criteria to be evaluated,
Cyberviolence from the student body to the teacher on a personal level	Clear, formal, inclusive writing, without repetition of words and consistent with the criteria to be evaluated,.
Coping	Clear, formal, inclusive writing, without repetition of words and consistent with the criteria to be evaluated,

Source: Own elaboration based on Challenor (2018)

During the design period, the advice of each referee was read and the suggestions were taken into account. The recommendations were, mainly, the reduction of questions, since they were too extensive. For this, the outline was updated and the questions were reduced. In addition, the writing of some questions was improved. The final result gave an outline of five categories (Sociodemographic data, Training, Internet Safety, Cyberviolence from the student body to the teacher at a personal and observer level and Coping), with a total of 33 questions (Table 2).

Table 2. Evaluation variables by referee judgment

Variables to weight	Description
Sociodemographic data	*1)* Email
	2) Ege
	3) Last grade of study
	4) Educational level that works
	5) Program/subject taught
	6) Years of service
	7) Work´s center name
	8) Work´s center place
Training	*9)* Have you receivedany tyoe of training on cyberviolence for teachers?
	10) If your answer was yes: What kind of trainig was it?
	11) How long have you receive it?
	12) Do you consider that training on cyberviolence for teachers in essential? Explain your answer.
Internet safety use	*13)* Do you know tools to prevent attacks on web pages?
	14) If your answer was affirmative, check the tools you know to prevent attacks on Web pages or social networks:
	15) Pease, check the tools you have used to prevent attacks on web pages or social networks:
Cyberviolence from the student body to the teacher at personal and observed level	*16)* Have you ever been a victim of cyber violence by a student or student groups at your workplace?
	17) Have you heard of any case of cyber-violence from the student body to the teacher?
	18) If you have not been a victim or have not known of any case of cyberviolence against a fellow teacher by a student or groups of students, go to the next section.
	19) How many teachers do you know who have been victims of cyber violence by students?

	20) Which of the following ways were used by the student body to carry out the cyberattack?
	21) Which of the following forms of cyberviolence were you, your classmate or fellow teacher a victim of by the student body?
	22) How many people participated in the cyberattack?
	23) Who were the cyber attackers?
	24) How long ago was the cyberattack?
	25) How long did the cyberviolence last?
	26) Which of the following forms of cyberviolence do you consider to have the greatest effect on the teacher who is attacked by the student body?
Coping	*27)* How was the problem of cyberattack faced by the student body?
	28) Did the school authorities get involved to solve the problem?
	29) If you commented on the cyberviolence attack, who did you talk about it with?
	30) What do you feel when you find out that a fellow teacher is facing a cyber-violence attack?
	31) What do you think should be done to prevent cyberviolence against teachers by students?
	32) How should the problem of cyberviolence be faced by the student body?
	33) What should people who observe or find out about a cyber attack on teachers by students do?

Source: Own elaboration (2022)

In the approval section, first, the number of collaborators to participate in this examination was determined. At this point, the advice of the authors Lao, Pérez and Marrero (2016) was followed, who urge following the methodology of the National Standardization Office of Cuba, an institution that establishes the NC 49:1981 standard, which explains that the number of people should range between 7 and 15, and that with this a reliable study can be achieved. A close dimension of error (p) of 0.05, a degree of certainty (K) of 95% and a

degree of specificity (i) of 0.15 were used in the execution. With the variables described above, the total number of referees was eight experts.

The first approach was to 11 people, who have a postgraduate degree in the area of education. Once this first meeting was over, eight collaborators reached an approval number, ranging from medium to high. George and Trujillo (2018) and López (2018) state that a minimum figure of 0.8 means that the person can be considered for the next stage. Table 3 shows the conformation of the Delphi method.

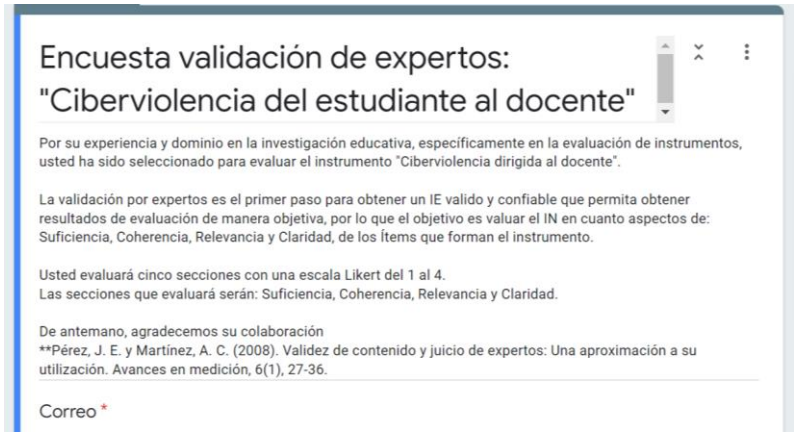
Table 3. Results of the conformation of the Delphi method

Delphi procedure assessment					
Collaborator	Ka	Kc	*K*	Appreciation	Arbitration
1	0.900	1.050	0.975	High apreciation	Sí
2	0.700	0.950	0.825	High apreciation	Sí
3	0.800	0.650	0.725	Medium preciation	No
4	0.900	0.950	0.925	High apreciation	Sí
5	0.500	0.950	0.725	Medium preciation	No
6	0.800	0.950	0.875	High apreciation	Sí
7	0.800	0.950	0.875	High apreciation	Sí
8	0.800	1.050	0.925	High apreciation	Sí
9	0.900	1.050	0.975	High apreciation	Sí
10	0.800	0.650	0.725	Medium preciation	No
11	0.900	0.950	0.925	High apreciation	Sí

Source: Own elaboration based on George and Trujillo (2018) and López (2018)

Having the conformation of digits of the Delphi method, we continued to choose and invite the eight collaborators whose evaluation went to the next round. They weighted the checklist into four sectors: Aptitude, Importance, Lucidity, and Consistency (Escobar & Cuervo, 2008). Figure 1 shows what was sent to each referee.

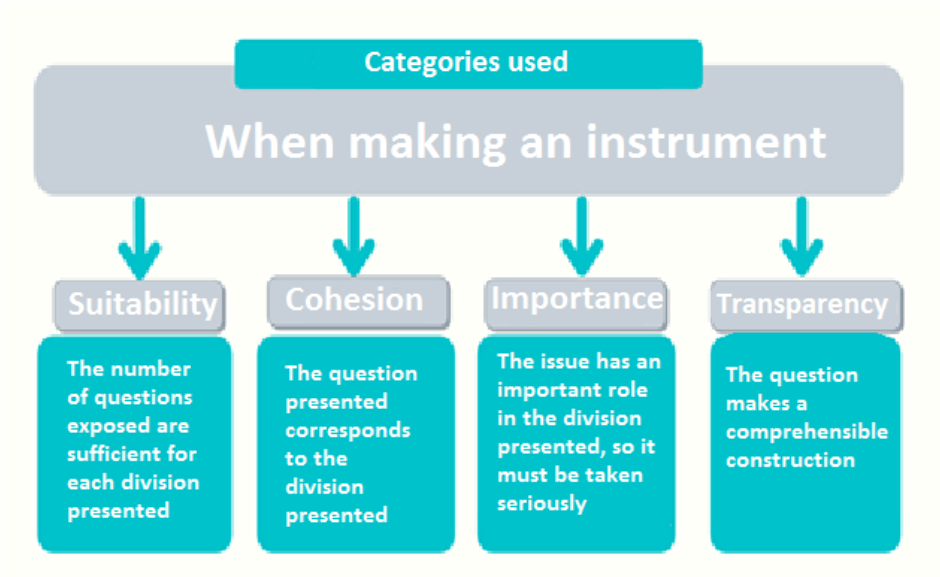
Figure 1. Refereree assessment form



Source: Own elaboration (2022)

The author Cruz (2018) argues that, for decision-making, the Delphi methodology is ideal, since it will have the arbitrator agreement as its main highlight. Figure 2 shows the factors described by Escobar and Cuervo (2008).

Figure 2. Factors used to value a tool



Source: Escobar y Cuervo (2008, pp. 35-36)

Table 4 shows a summary of the digits collected by the collaborators in the assessment of the Aptitude factor. For this evaluation, each referee weighted each issue on a scale of one to four, where one is the lowest digit and four is the highest digit.

Table 4. Figures example of the assessment by judges of the Aptitude factor

Factor	EXP	Questions																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Aptness	1	4	3	4	4	4	4	4	4	3	4	4	4	4	4	4	4	3	4	4
	2	4	4	3	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4
	3	4	4	4	4	4	4	4	4	3	4	4	3	4	4	4	4	4	4	4
	4	1	4	4	4	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	5	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4
	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	8	4	4	4	4	4	4	4	4	4	4	2	2	4	4	4	4	2	4	4

Source: Own elaboration (2022)

Subsequently, each table made up of the figures collected from the judges were analyzed with the specialized program SPSS, in its student version 22. Rivadeneira, Barrera and De La Hoz (2020) indicate that the SPSS software is versatile and easy to use, which is why it is one of the most used internationally. Immediately, the advice of Flores, Miranda and Villasís (2017) was taken into account, researchers who suggest calculating the behavior of the figures collected in a study. Therefore, the normality experiment was established, this is recommended by Flores and Flores (2021); jointly, the recommendation of Novales (2010) was followed, who argues that, when there is a set of figures greater than 50, the Kolmogorov-Smirnov test should be used.

The assumptions stated were the following:

- H_0: The set of figures does not present a significant discrepancy.
- H_1: The set of figures presents significant discrepancy.

Table 5. Results for reasoning: Aptitude

	Smirnov[a] Test		
	Statistical	Gl	Sig.
Aptness	0.527	272	0.000

Source: Own elaboration (2022)

Table 5, in its Sig. column, presents a digit of 0.000, said figure is less than 0.05, to which it is concluded: contradicting the assumption H0; and therefore, the null assumption (H1) is the one that should be selected. In other words, the set of figures does not follow a normal distribution. This decision is based on what was presented by Chalapud, Muñoz and Trochez (2021).

Continuing with the calculation of the other three factors, Table 6 presents the digits for the three missing variables: Importance, Lucidity and Consistency.

Table 6. Normality test in reasoning: Importance, Lucidity and Congruence

	Smirnov[a] Test		
	Statistical	Gl	Sig.
Congruence	0.507	272	0.000
Importance	0.518	272	0.000
Lucidity	0.520	272	0.000

Source: Own elaboration (2022)

The figures shown in the previous table, for the three factors, symbolize that the Sig. has a digit less than 0.05; and for each factor the assumption H0 is challenged, and therefore the assumption H1 is chosen. In other words, they do not follow a normal distribution.

The next step was to conjecture Friedman's F trial. The degree of hierarchy operated was 0.05, which, for Juárez (2015), is the most used in the disciplines of psychology and social sciences.

The assumptions outlined were:

$$H_0: X \sim N$$

$$H_1: X \nsim N$$

Immediately afterwards, the Friedman F test was calculated for the variables: Aptitude, Importance, Lucidity and Congruence. Table 7 shows the digits by reasoning.

Table 7. Friedman test for reasoning: Aptitude, Importance, Lucidity and Congruence

	Reasonings			
	Aptitude	Importance	Lucidity	Congruence
N	8	8	8	8
Chi squered	29.697	38.285	25.380	37.107
gl	33	33	33	33
Asymptotic	0.632	0.242	0.826	0.285

Source: Own elaboration (2022)

Table 6, in its asymptotic Sig. line, reveals figures ascending to 0.05, therefore, and following the advice of Chávez (2020), there is no certainty not to challenge the null assumption (H0). In other words, there is revealing agreement on all four factors by the referees.

Discussion

Once the present examination is completed, it is determined that, by opting for a methodology, which is proven and authorized, the practice of a project will achieve a triumphant effect. In the case of this examination, the system recommended by the researchers Poblano et al. (2019), Garcia et al. (2021) and Rodríguez et al. (2021). The Delphi procedure is of great help when wanting to make a decision and for this the opinion of a group of collaborators is used, an experience similar to that of the researchers García and Lena (2018), López and Lluch (2019) and Pinto, Perez and Darder (2022). In the same way, for the statistical investigations, in its final digit Sig. asymptotic, for the determination of the decision, this was supported in investigations such as that of Rendón, Riojas, Contreras and Martínez (2018) and Delgado, Salazar and Herrera (2021).

Conclusions

The purpose of this investigation was the execution of the verdict of people for a tool that investigated cyberviolence directed at teachers. Thanks to the process carried out, there is currently an instrument that will allow the recovery of valuable and pertinent information related to the subject in question and at a future time interventions concerning coping with school violence, specifically cyberviolence, can be implemented.

For the progress of the exploration, a methodical process was favored, thanks to which, pursuing to the letter, a prosperous effect was reached.

The approval of content, thanks to the report of specialists, was methodical and very revealing, since a consensual arbitration was reached through the judges.

The survey that was worked on in this exploration glimpsed five significant variables: Sociodemographic data, Training, Internet Safety, Cyberviolence from the student body to the teacher at a personal and observer level and Coping. The instrument had 33 questions distributed in these five factors.

Once the work has been accomplished, the Friedman F test states that it is useful in confirming reports regarding the inquiry of a group of people.

It should be noted that cyberviolence in the school environment continues to increase, especially due to the globalized era, where from a very early age boys and girls are allowed to manipulate electronic devices with Internet access, and to date, the educational curriculum has omitted cybersecurity issues, which has made the student body, parents and the teacher

himself victims. That is why this instrument will be of great value for future research, especially those that want to venture into cyberviolence and that take the teacher as a research subject as a reference.

Future lines of research

The purpose of this examination was through the verdict of arbitrators the authenticity of a survey of cyberviolence addressed to the teacher.

Therefore, as a future path of exploration, the effectiveness of judgment is proposed, which will help to compare with an external tool and understand if the verification is correct.

Consequently, it is proposed to carry out a construct efficacy study. Said investigation will calculate the connection between the tool with respect to its theory and the observed variables.

References

Challenor, L. (2019). *Cyberbullying of Post-Primary Teachers in Ireland*. (Doctoral thesis). Dublin City University. Retrieved from https://bit.ly/404s7Bq.

Chalapud, L. M., Muñoz, J. N. y Trochez, A. (2021). Programa de yoga para mejorar el equilibrio y la flexibilidad en el adulto mayor de la fundación EMTEL, Centro Vida Sur en Popayán - Colombia. *Horizonte de Enfermería, 32*(1), 15-27. Recuperado de http://bit.ly/3XFfew9.

Chávez, E. A. (2020). Análisis comparativo de competencias emprendedoras entre estudiantes de la UABC. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo, 10*(20). Recuperado de https://doi.org/10.23913/ride.v10i20.646.

Corral, Y. (2009). Validez y confiabilidad de los instrumentos de investigación para la recolección de datos. *Revista Ciencias de la Educación, 19*(33), 228-247. Recuperado de https://bit.ly/3HcZjOA.

Cruz, M. (2018). Un estudio sobre la implementación del método Delphi en publicaciones de ciencias médicas indexadas en Scopus. *Educación Médica Superior, 32*(3), 36-50. Recuperado de https://bit.ly/403porY.

Delgado, D. S., Salazar, J. M. y Herrera, L. (2021). Las herramientas web 2.0 en el desarrollo de habilidades lectoras. *Horizontes. Revista de Investigación en Ciencias de la Educación, 5*(19), 668-676. Recuperado de https://doi.org/10.33996/revistahorizontes.v5i19.227.

Downing, S. M. (2003), Validity: on the meaningful interpretation of assessment data. *Medical Education*, *37*(9), 830-837. Retrieved from https://doi.org/10.1046/j.1365-2923.2003.01594.x.

Escobar, J. y Cuervo. A. (2008). Validez de contenido y juicio de expertos: una aproximación a su utilización. *Avances en Medición, 6,* 27-36. Recuperado de https://bit.ly/3DlGsQ7.

Flores, E., Miranda, M. G. y Villasís, M. Á. (2017). El protocolo de investigación VI: cómo elegir la prueba estadística adecuada. Estadística inferencial. *Revista Alergia México*, *64*(3), 364-370. Recuperado de https://doi.org/10.29262/ram.v64i3.304 .

Flores, C. E. y Flores, K. L. (2021). Pruebas para comprobar la normalidad de datos en procesos productivos: Anderson-Darling, Ryan-Joiner, Shapiro-Wilk y Kolmogórov-Smirnov. *Societas. Revista de Ciencias Sociales y Humanísticas, 23*(2), 83-106. Recuperado de http://portal.amelica.org/ameli/journal/341/3412237018/.

García, R., Poblano, E. R., Reyes, R., Cuamea, G. y Juárez, R. (2021). Elección de carrera e institución de educación superior: validación de instrumento de medición mediante el modelado de ecuaciones estructurales. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo, 11*(22). Recuperado de https://doi.org/10.23913/ride.v11i22.961.

García, M. E. y Lena, F. J. (2018). Aplicación del método delphi en el diseño de una investigación cuantitativa sobre el fenómeno FABLAB. *Empiria. Revista de Metodología de Ciencias Sociales*, (40), 129-166. Recuperado de https://doi.org/10.5944/empiria.40.2018.22014.

George, C. E. y Trujillo, L. (2018). Aplicación del método Delphi modificado para la validación de un cuestionario de incorporación de las TIC en la práctica docente. *Revista Iberoamericana de Evaluación Educativa, 11*(1). Recuperado de https://doi.org/10.15366/riee2018.11.1.007.

Juárez, C.S. (2015). *Análisis de varianza de tipo I: Anova I. Problemario de estadística aplicada* [material educativo]. Universidad Autónoma del Estado de México. Repositorio de la Universidad Autónoma del Estado de México. Recuperado de: https://bit.ly/3JkoGkg

Kappes, M. S. y Riquelme, V. (2021). El valor P, y medidas de efecto: su interpretación en investigación cuantitativa en enfermería. *Ene, 15*(2), 124. Recuperado de https://bit.ly/3HyMvmO.

Lao, Y., Pérez, M. y Marrero, F. (2016). Procedimiento para la selección de la comunidad de expertos con técnicas multicriterio. *Ciencias Holguín*, *22*(1), 34-49. Recuperado de https://bit.ly/3Rb6tHF.

Leyva, H. P., Pérez, G. M. y Pérez, S. M. (2018). Google Forms en la evaluación diagnóstica como apoyo en la actividad docente. Caso con alumnos del Grado en Turismo. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo, 9*(17), 84-111. Recuperado de https://doi.org/10.23913/ride.v9i17.374.

López, E. (2018). El método Delphi en la investigación actual en educación: una revisión teórica y metodológica. *Educación XX1, 21*(1), 17-40, Recuperado de https://doi.org/10.5944/educxx1.20169.

López, F. J. y Lluch, A. C. (2019). Diseño y validación mediante método Delphi de un cuestionario para conocer las características de la actividad física en personas mayores que viven en residencias. *Retos*, *36*, 515-520. Recuperado de https://doi.org/10.47197/retos.v36i36.69773.

McGuire, L. and O'Higgins, J. (2016). *Cyberbullying in Ireland: A Survey of Parents Internet Usage and Knowledge*. Dublin, Ireland: National Anti-Bullying Research and Resource Centre.

Novales, A. (2010). *Análisis de regresión* [en línea]. Universidad Complutense. [20-11-2022] Recuperado de: https://www.ucm.es/data/cont/docs/518-2013-11-13 Analisis%20de%20Regresion.pdf

Oficina Nacional de Normalización (1981). *Control de la calidad. Métodos de expertos. NC 49:1981*. Cuba.

Ortega, F. (2008). El método Delphi, prospectiva en ciencias sociales a través del análisis de un caso práctico. *Revista Escuela de Administración de Negocios*, (64), 31-54. Recuperado de http://bit.ly/3Hbdbcb.

Oteros, J., García, H., Viuf, P. y Galán, C. (2015). Google Trends, una herramienta útil para detectar la presencia de polen atmosférico *Anales de la Facultad de Medicina*, *76*(3), 265-268. Recuperado de http://bit.ly/3WVrUOl.

Poblano, E., López, R., Gómez, J. and Torres, V. (2019). Effect of competitive intelligence on innovation capability: An exploratory study in Mexican companies. *Journal of Intelligence Studies in Business*, *9*(3) 62-67. Retrieved from https://doi.org/10.37380/jisib.v9i3.516.

Pinto, A. R., Pérez, A. y Darder, A. (2022). Formulación y validación del modelo tecnológico empoderado y pedagógico para promover la competencia digital docente en la formación inicial del profesorado. *Formación Universitaria*, *15*(1), 183-196. Recuperado de https://dx.doi.org/10.4067/S0718-50062022000100183.

Quispe, A., Calla, K.M., Yangali, J.S., Rodríguez, J.L. y Pumacayo, I. I. (2019). *Estadística no paramétrica aplicada a la investigación científica con software SPSS, MINITAB Y EXCEL. Enfoque práctico*. EIDEC.

Rendón, M. E., Riojas, A., Contreras, D. y Martínez, J. D. (2018). Análisis bayesiano. Conceptos básicos y prácticos para su interpretación y uso. *Revista Alergia México*, *65*(3), 285-298. Recuperado de https://doi.org/10.29262/ram.v65i3.512.

Rivadeneira, J. L., Barrera, M. V. y De La Hoz, A. I. (2020). Análisis general del SPSS y su utilidad en la estadística. *E-IDEA Journal of Business Sciences*, *2*(4), 17-25. Recuperado de http://bit.ly/3XMRqXi.

Rodríguez, M. A., Poblano, E. R., Alvarado, L., González, A. y Rodríguez, M. I. (2021). Validación por juicio de expertos de un instrumento de evaluación para evidencias de aprendizaje conceptual. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, *11*(22). Recuperado de https://bit.ly/408AQTh.

Rodney, Y., Bulgado, D., Estévez, Y., Llivina, M. J. y Disla, P. M. (2020). *La violencia como fenómeno social*. La Habana, Cuba: Editorial Universitaria Pedagógica Varona. Recuperado de https://www.observatoriodelainfancia.es/oia/esp/documentos_ficha.aspx?id=7359.

Supo, J. (2013). *Cómo validar un instrumento. La guía para validar un instrumento en 10 pasos.* Perú: Biblioteca Nacional del Perú. Recuperado de https://bit.ly/3WGRwyd.

Usagui, E. (2005). Durkheim: conflicto y educación. *Cuestiones Pedagógicas*, (17), 277-290. Recuperado de http://bit.ly/3HywAF3

Villasís, M. Á., Márquez, H., Zurita, J. N., Miranda, M. G. y Escamilla, A. (2018). El protocolo de investigación VII. Validez y fiabilidad de las mediciones. *Revista Alergia México*, *65*(4), 414-421. Recuperado de https://doi.org/10.29262/ram.v65i4.560.

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