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# Preservice Teachers' Perceptions of Linguistic Abilities and Privacy Policies in the Use of Visual Materials During Their Own and Their Tutors' Lessons

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This article analyzes the capacity for improvement of digital observation in initial teacher training to investigate whether the implementation of visual materials is effective for the reinforcement of previously taught content, the assessment of one's own linguistic abilities and whether it motivates learners. To do so, the subjects analyzed classroom behavior and learning typology through the reflection of their own videos recorded with children and tutors. Data was collected through 12 closed-ended questions that follow the Likert scale and one open-ended question for general reflection. The questions focused on the motivation and interest of the students with respect to the videos viewed, comprehension, learning, perceived usefulness, and the problem arising with the privacy of the Students' personal data. The responses were classified and their frequencies and percentages were calculated. The results show that implementing video tools in the classroom and reflecting on their content afterward can be an effective means of assessing one's learning and language skills. In addition, the study highlights the inherent complexities posed by EU GDPR regulations and the significant barriers to integrating video technology into the classroom for schoolchildren in these contexts.

**Keywords: teacher training, preservice teacher, online video exchange, linguistic competence, data privacy, privacy protection, Likert, education**

## INTRODUCTION

The issue of preparing qualified and motivated teachers, with a wealth of knowledge and skills, has become a top priority in many countries. The teaching profession is becoming increasingly complex and teachers' adaptability is constantly challenged. Trainee teachers face many problems when they begin their teaching practice in different schools with real students. They are expected to have a wide range of competencies, including linguistic competences, which is not always the case. The initial teacher-training period is the time when prospective teachers begin to build these professional competencies. Therefore, planning high-quality initial teacher training is vital so that potential teachers can cope with the demands placed on them in terms of academic subject knowledge and

pedagogical competencies. Even so, it seems that initial teacher training will not be able to prepare teachers for all the changes they will experience throughout their working lives.

In Spain, students can enroll in a 4-year degree in Early Childhood Education or Elementary Education, which qualifies them to work as teachers in any school and thus contribute to the intellectual, personal and affective development of children aged 0–12 (depending on the chosen degree). The practicum is carried out in both public and private schools with whom there is an agreement to accept preservice teachers (university students enrolled in the teacher-training program). This teacher-training program aims to support the development of professional competencies that a teacher needs including designing didactic activities; managing and monitoring the learning process; evaluation of educational activities; the use of digital technologies; and the experience of classroom management, among others.

Nowadays, information and communication technologies are part of the daily life of both teachers and students thanks to the multiple easily accessible multimedia resources that are available, including those that incorporate visual elements such as the video. Previous research has shown the positive impact of using different language tools for effective practice during practicum training for preservice teachers, including the use of online videos. However, research analyzing the use of video as a tool in the practicum is scarce and they do not take into account the privacy regulations and the barriers that hinder the integration of video technology into the classroom.

Therefore, this study examines the pre-service teachers' perceptions of the effect of video self-analysis on their development of linguistic abilities and self-reflection abilities, and the influence of personal data privacy on its use. As data will show, all the restrictions implemented are making it very difficult to record classroom videos and then use them as a system to assess teacher beliefs and attitudes, especially when minors are involved.

The following initial hypotheses are proposed.

H1. Preservice teachers were engaged in the practicum experience with the use of video self-observation.

H2. Preservice teachers perceive the difficulties in carrying out a practice using video while maintaining Students' privacy.

H3. Preservice teachers perceive that the use of video self-observation is an effective element of teacher education pedagogy to improve their linguistic and self-reflection abilities.

# BACKGROUND

## Preservice Teacher's Perceptions and Linguistic Competence

Teaching practice (practicum) is widely regarded as a basic component in teacher education programs (Levis and Farrell, 2007; Mutlu-Gülbak, 2015; Ismail and Jarrah, 2019). It is during this training that teachers can improve their levels of essential competences as well as introduce in the classroom competencies that are consistent with their personality, abilities, and tendencies (Davies and Rogers, 2000). However, as Kim (2019) shows, teacher competences are different from teaching competences. The first ones include all the knowledge, attitudes, and skills that are necessary for teaching, while the second are related to their practical implementation (European Commission, 2013). Nevertheless, both types should be intertwined (Rossner, 2017).

Among these, the linguistic competence stands out, which can be defined as the competence "providing learners with linguistic skills that enable them to understand the language, its rules, and grammars which control it and control the characteristics of its components" (Raslan, 1998, p. 128). This competence also includes the knowledge and self-perceptions that teachers have about their own linguistic competence so that they will be able to improve their teaching competence (Borg and Edmett, 2019).

Several studies show that preservice teachers' competence perceptions are essential to improve teaching practice during preservice training: see Gutierrez (2015); Suarez and Basto (2017), and Kim (2019) on English as a foreign language competences, Alvarez-García et al. (2018) on environmental competencies, Reinoso et al. (2019) on science or Tarraga-Minguez et al. (2021) on digital competencies, all cases in Spanish-speaking universities.

In addition, preservice teachers self-evaluate their competences, including their linguistic abilities, taking into account their beliefs (Zingoni and Byron, 2017; Kim, 2019). These can be described as "a proposition which may be consciously or unconsciously held, is evaluative in that it is accepted as true by the individual, and is therefore imbued with emotive commitment; further it serves as a guide to thought and behavior" (Borg, 2001, p. 186). As Kim (2019) states, it seems that teacher's beliefs play some role in evaluating their competence, including their linguistic competence. Previous research studies support the idea that trainee teachers' beliefs may be influenced and modified throughout the practicum by several factors, such as being exposed to a real classroom, facing personal experiences that may change their self-image, student behavior or the characteristics of the institution (Suarez and Basto, 2017; Uibu et al., 2017), which can later influence job persistence (Kim and Corcoran, 2018).

## Data Privacy in Education

In the last few years, regulations and laws on the protection of personal data have emerged. These laws protect the rights of minors, mainly in relation to the recording of images when using new technologies. For example, Marín et al. (2021) study the relationship between the use of social networks by minors and preservice teachers and data privacy. Cobo (2019) shows the consequences of the massification of technologies and their impact on new modes of power and control of society, one of the axes being the loss of privacy. Given these tensions, teachers may find themselves caught between "contradictory technological imperatives" (Leatham and Robertson, 2017), as they are encouraged both to make an innovative use of technology in their classrooms and to protect Students' privacy. Based on the results of this study, Leatham and Robertson (2017)

suggest that some teachers may feel unprepared to select and implement digital tools in their classroom, even though they feel there is a need to use technology (Krueger and Moore, 2015). A further example, unrelated to education but very eloquent, is online shopping, where the convenience provided by the digital tool often overrides the user's concern or caution for their own privacy (Miyazaki and Fernandez, 2001).

As technology has advanced to provide valuable learning tools, parents and policymakers have begun to raise concerns about the privacy of student data held by schools. Laws are intended to protect students and their families, but they have not and will not be able to keep pace with the rapid evolution of technology (Krueger and Moore, 2015).

In Spain, the article 111.bis of the Organic Law 2/2006 on Education (BOE, 2006) establishes in section "Discussion" that educational administrations and school management teams shall promote the use of Information and Communication Technologies in the classroom as an appropriate and valuable didactic mean to carry out teaching and learning tasks. In this sense, the recording of practices or knowledge tests is one more working methodology for the teaching professional.

The Covid19 pandemic has had a strong impact in all areas. All schools and universities in Spain have been forced to seek immediate (and effective) solutions in order to ensure the continuity of educational activity, whether through video-calls, online classes or virtual classroom platforms. When it comes to carrying out this activity, many doubts have arisen, mainly focused on data protection.

Since image, sound and text recordings constitute a processing of personal data, all those involved (teachers and students) must be informed about the data processing that is carried out. As a result, the broadcasting of recorded lessons may violate the fundamental right to data protection, as well as the right to one's own image and intellectual property rights. According to case law, the recording could involve a violation of the current legislation and the rights of citizens for one or more of the following reasons (Delegación de Protección de Datos, 2021):

- Infringement of the Right to Privacy (art. 18 of the Spanish Constitution).
- Infringement of the Secrecy of Communications (art. 18 of the Spanish Constitution).
- Infringement of the current regulations on data protection: General Data Protection Regulation (GDPR, 2016) and LOPDGDD (Organic Law on Protection of Personal Data and Guarantee of Digital Rights) (BOE, 2018).

According to Spanish law, with regard to the recording of lessons, a distinction must be made between materials:

- That the teacher himself records, which may be convenient or even necessary for the exercise of the educational function. Access to the video must be limited to the teacher and the students to whom it is addressed, without it being used later for other purposes, such as public disclosure, which would require the express consent of those affected.
- That is produced by one of the students present, in which case the purpose of the recording must be identified and for which both the teacher and the rest of the students must give their consent if their image or voice could be the subject of the recording.
- When the center considers it appropriate to disseminate audiovisual content, it must include all the purposes for which the class is being recorded and students must be able to independently accept/refuse each of these purposes.

Some examples of purposes would be:

- Excerpts from the session used as publicity material.
- Excerpts from the session used as course demos.
  When only the tutor's image and voice are recorded, the content can be used as academic material in other courses.

Most universities have data protection policies that comply with the different regulations and laws that apply to them. For example: Harvard University,[1] Stanford University,[2] which explains how they use personal data, or Cambridge University,[3] which explains how they treat the data of the person who visits their website.

In Spain, the majority of universities collect data in accordance with the principles set out in Article 5 of the GDPR. It fact, we should highlight the specific information that is available on the website of the University of Vigo.[4] The information provided on this page is very comprehensive and the website includes information about data protection, definitions and principles, data processing activities, rights, regulation and documentation, virtual teaching and assessment and online resources (which includes the recording of classes and exams and the rights of both students and teachers).

## Video in Preservice Teachers' Perceptions

Information and communication technologies are part of the daily life of both teachers and students in any type of education. Technology alone has no pedagogical value, it is essential to manage this resource in an appropriate manner. The numerous multimedia resources available in the classroom, together with the Students' interest in them, with online video and the YouTube tool being among the most flexible materials, are an advantage when it comes to approaching the teaching-learning process and adapting it to individual differences (Cabero et al., 2005; Cabero, 2006). Because today's information is digitized, online resources represent one of the most common sources for learning among university students (Goldman et al., 2007).

According to Bartolomé Pina (2008), the use of free resources (i.e., personal e-mail, public or private websites, blogs, YouTube videos, chat via Skype or Zoom) that include visual elements develops useful digital competencies and generates greater effectiveness and empowerment in tutorial situations. In fact, the YouTube educational channel shows an increasing influence

[1]https://www.harvard.edu/privacy-statement/

[2]https://privacy.stanford.edu/

[3]https://www.cam.ac.uk/about-this-site/privacy-policy

[4]https://www.uvigo.gal/es/universidad/informacion-institucional/proteccion-datos

on teaching and learning (Berk, 2009; Snelson, 2011; Rodríguez Villalobos and Fernández, 2017; Tudini and Dooly, 2021). In this sense, there are experiments such as the one carried out by Sung et al. (2016) that focused on researching the effects of embedded mobile devices on teaching and learning.

In addition, it seems that the use of video recordings in self-assessing one's performance are correlated with a positive effect in motivation and interest and a desire for improvement (Hirschel et al., 2012). The use of video tools also enhances the meta-cognitive skills of both students and teachers that allows them to regulate their own comprehension and reflect on their professional development (Brevig, 2006; Toci et al., 2015).

Among the characteristics of ICT tools we can find that they promote learning opportunities that can help guide preservice teachers in how they acquire and apply knowledge (Abell and Cennamo, 2004; Kersting et al., 2009; Blomberg et al., 2014; Gold and Holodynski, 2017) or reflect, improve and apply changes in pedagogy during school practices (Christ et al., 2014; Chilton and McCracken, 2017; Lebak, 2017; Barth-Cohen et al., 2018). Therefore, visual language tools are seen as a much more versatile medium that captures the complexity of classroom situations (Miller and Zhou, 2007; Newhouse et al., 2007; Shepherd and Hannafin, 2008; Sherer and Shea, 2011; Blomberg et al., 2013).

A number of researchers have studied the use of different visual language tools for reflective practice during practicum for preservice teachers, especially online videos: McCoy and Lynam (2021) found that the vast majority of participants ($n$ = 35) were highly motivated about this experience and they were able to identify different ways in which video footage helped them critically evaluate their performance, Santagata and Angelici (2010) suggested that a methodology that included the use of videos of classroom teaching helped the reflections on mathematics teaching on a sample of preservice teachers ($n$ = 34), especially if this intervention is guided, and Santagata and Guarino (2011) found that video-based activities were able to support a sample of preservice teachers' ($n$ = 27) learning and reasoning.

Newhouse et al. (2007) and Shepherd and Hannafin (2008) interviewed 10 preservice teachers who had analyzed videos of their own teaching and concluded that the videos helped them to see their teaching from multiple perspectives, or to discover aspects that they had previously overlooked thanks to the videos. Similarly, they refer to the "slowing down" effect: videos of their own teaching practice allowed them to reflect on classroom events that they had not noticed while teaching in class due to time pressure and the immediate need to act (Borko et al., 2008; Rosaen et al., 2008; Snoeyink, 2010).

Preservice teachers claim to have difficulties with classroom management so as not to neglect the individual approach to each student (Kounin, 1970; Giallo and Little, 2003; Romano, 2007). They report receiving insufficient preparation in classroom management during their teacher training (Meister and Melnick, 2003; Romano, 2007; O'Neill and Stephenson, 2012; Gold et al., 2020) as well as having difficulties in assessing their own abilities, including linguistic ones (Brevig, 2006; Toci et al., 2015). One of the procedures to avoid this is the use of videos.

Van den Bogert et al. (2014) suggest that the study of their own or other teachers' videos allows student teachers to compare, contrast and reflect on their memories of a lesson taught in combination with a video of this lesson. Kane et al. (2016) highlighted the advantages of using video technology with preservice teachers from the perspective of school administrators, universities, or providers. Furthermore, there are programs that use video in order to develop pedagogical skills independent from specific disciplines among preservice teachers, such as understanding student thinking or reflective practice (Masingila and Doerr, 2002; Stockero, 2008; Marsh et al., 2010). Other programs emphasize the development of teachers' understanding of particular subject areas (Schrader et al., 2003; Ling Wong et al., 2006; Llinares and Valls, 2009; Wang et al., 2015). However, the majority of research available do not take into account the inherent complexities posed by data privacy regulations and how they affect to the integration of video technology in the classroom.

# MATERIALS AND METHODS

## Participants

The participants were a convenience sample of 29 preservice teachers in their final year of a 4-year program in Elementary or Early Childhood Education at the University of Vigo (Spain). The sample consisted of 22 women and 7 men, with an average age of 22.93 (SD = 2.099) of which 12 were final year students of the degree in Early Childhood Education and 17 were final year students of the degree in Elementary Education. All the preservice teachers responded to a survey after their teaching practicum period (ranging from 7 to 8 weeks) in the aforementioned schools.

Due to the fact that this research was not compulsory and only student volunteers participated in it, we could not expand our number. However, we believe that our results can serve as a basis for future studies on this subject.

## Instruments

The authors (all of them university teachers) designed a questionnaire that was made up of 12 closed-ended questions that follow the Likert scale and one open-ended question for general reflection (What are your impressions of this method?). The questions focused on the motivation and interest of the students with respect to the videos viewed, comprehension, learning, perceived usefulness, and the problem arising with the privacy of the Students' personal data. The responses were classified and, at the end, an elementary statistical analysis of the data collected was carried out, calculating the frequency of responses, the percentages they represent and organizing them in a table for analysis. The justification of the Likert scale rating used is included in the next section.

Before implementing the questionnaire, we followed several stages (**Figure 1**). All the authors were also involved in the course development of the teaching practicum and its practice through close contact with the tutors. The first stage began with a talk on what the practicum consisted of and what was expected of its realization, an analysis of the situation and the identification of

the content of the material, the target audience and the objectives to be pursued. Subsequently, the guidelines for the design of the video were proposed, knowing the availability of the material for the recording of the videos, the activities to be performed in the classroom as well as the authorization to be able to carry it out.

Stage 2 consists of the execution of the practicum itself with three aspects. The first is the development of a normal class; the second is the possibility of recording a video on the behavior of the students and the internship teacher, supported at certain times by the senior lecturer of the class, who acts as a tutor and coordinator of the class. In the case of impossibility of recording for any of the reasons mentioned before, the UvigoTV newspaper library will be available[5] (**Figure 2**).

Stage 3 consists of using the tutor's video recordings, either through new videos or by going to the UvigoTV newspaper library where 21,624 videos are available from all fields of knowledge, mainly conferences and congresses. There is another section of MOOCs but they are not accessible.

Stage 4 is the completion of the questionnaire and, as an optional task, students have the possibility of adapting the video to comply with privacy regulations (**Figure 3**). For example, they are taught that faces can be pixelated/blurred in the video. However, it is a rather laborious process; becoming more complicated as the number of faces and movements increase. Any free multi-track video editing program of limited sophistication, such as ShotCut[6] or AVSDC[7] allow the students to do it manually.

On the other hand, free professional programs such as DavinceResolve[8] or paid programs such as Adobe Premiere[9] allow for the tracking of the subject to be pixelated but the use of the tool is a little complex for someone with no experience. In addition, for the tracking of the person to be correct, it must be taken into account that, when recording, the background should be mostly flat and the faces to be blurred should not overlap too much.

In short, pixelating a large number of children, if the video is a little long, can be a very laborious task, even for a professional, if it has not been recorded under certain conditions that make it easy for the automated tool. In this sense, what is often done is to record the whole frame out of focus from the beginning. This way, everything is sensed but everything is out of focus. In addition, using any of the free programs mentioned above, teachers could also blur the entire video, a task that is much more feasible and easier to do.

As step 5, activities were designed to be carried out after the observation in order to keep track of it, help students identify their competences as well as any errors acquired during the observation process, and analyze the quality and quantity of the information acquired and its deepening impact (Cabero et al., 2005).

[5]https://tv.uvigo.es/

[6]https://shotcut.org/

[7]https://www.videosoftdev.com/es

[8]https://www.blackmagicdesign.com/es/products/davinciresolve/

[9]https://www.adobe.com/es/products/premiere.html

## Methodology

For the questionnaire, we used as a main tool a Likert-type scale, which is one of the most widely used measurement tools in Educational Sciences and Social Sciences. The Likert scale is a psychometric response method mainly used in questionnaires to obtain the level of agreement with a given statement using an ordinal scale. Among researchers, there is no clear consensus on the form and design of the scale format. Probably the most commonly used item is the 5-level scale (chosen in our study), but 4, 7, or 10-level scales are also used. Two well-known situations tend to occur, central tendency bias where the two extreme options are avoided, or acquiescence bias where there is a tendency to agree with the statements presented. The scoring used in the present study is shown on **Table 1**.

Establishing the internal consistency of a scale approximates the validation of what has been designed. Scales can be validated with the use of a standard of reference to quantify the correlation that exists between the items that compose it. For this purpose, we calculated Cronbach's alpha value (see Equation 1) and the result of its validity was checked against **Table 1**.

$$\propto = \frac{k}{k-1}\left[1 - \frac{\sum_{i=1}^{k} S_i^2}{S_t^2}\right]$$

Equation 1, where $S_i^2$ is the variance of item $i$, $S_t^2$ is the variance of the total observed values and $k$ is the numbers of questions or items.

After implementing the scale, we calculated the frequencies and percentages of the results obtained. In addition, because reliability makes it possible to measure the accuracy of the questionnaire and thus obtain consistent results (the higher the reliability, the lower the error), we calculated the reliability of the questionnaire using Cronbach's alpha.

## RESULTS

The results of this survey show the Students' perceptions of interest and usefulness in relation to the experience. **Table 2** shows these results.

**Table 3** shows the results and the data found for the variances. The value of the Cronbach's alpha formula was 0.7908, which shows that the test is at the limit of excellent in terms of data reliability.

**TABLE 1 |** Likert and Cronbach's alpha (data are independent of each other).

| Likert scale | | Cronbach's alpha rank | |
|---|---|---|---|
| | Quantitative score | Rank | Qualitative score |
| Strongly agree | 5 | 0–0.2 | Very low |
| Agree | 4 | 0.2–0.4 | Low |
| Undecided | 3 | 0.4–0.6 | Moderate |
| Disagree | 2 | 0.6–0.8 | Good |
| Strongly disagree | 1 | 0.8–1.0 | Very good |

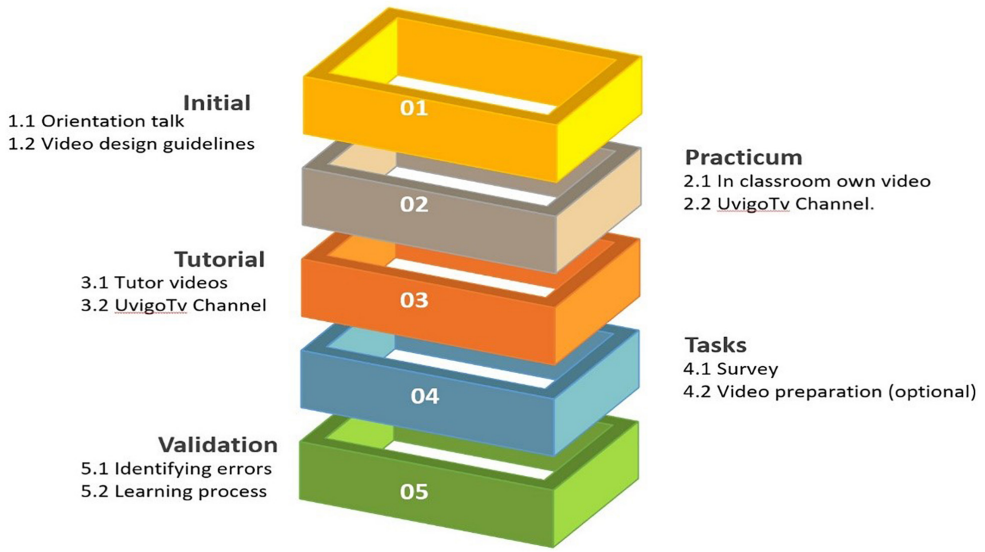


**FIGURE 1 |** Methodology.


**FIGURE 2 |** UvigoTV on the internet.

For the analysis of the questionnaire, the sum of *Strongly agree* + *Agree* has been used, and it has been grouped into three main sections.

The first of these is to inquire into perceptions of self-recording. An analysis of these results reveals the following: 79.31% of the students surveyed agree or strongly agree that the use of video as a tool to improve one's own linguistic competences is interesting and 89.66% agree that the implementation of this type of practice motivates and improves their linguistic competences. A very large majority (93.1%) agree or strongly agree with its use for learning.

These values change slightly when their importance as *Strongly agree* is studied: 55.17% of the students consider that the videos managed to motivate them a lot and improved their linguistic skills, while 37.93% of the students answered that they used them for learning, although the total values are similar. This can be related to the advantages that the students observe, since 34.5% of the students point out that the video could be used in more subjects not only in the practicum, specifically they point out their usefulness in linguistic subjects. Regarding the use of videos in more motivational subjects, such as language related subjects, 55.17 and 51.72% *Agree* (although not strongly), being the highest rating of the entire survey in this type of evaluation.

The second section deals with the observation of the videos made by the tutors. 44.8% indicated that it was easier for them to maintain attention compared to a typical class. The results thus show that video is a motivating tool for students. As for the usefulness of the video for the assimilation of content, referring to

**FIGURE 3 |** Example of a video capture of a classroom and the problems it presents for the protection of personal data.

the perceived improvement of knowledge and skills, we can see that the values remain high (86.21%). Looking at the questions referring to the usefulness of the combination of their own and the tutors' videos, we find that 31.03% consider them very useful, while 48.3% consider them quite useful and 20.7% somewhat useful. This means that 79.3% consider the videos very useful or quite useful for learning. The results of this section, together with the advantages pointed out in the first section (control over the video, possibility of repetition and so on) show that the video could be used as a tool to attend to the different learning rhythms, since they could help improve comprehension.

The section on privacy is where both the greatest discrepancies and the greatest consensus have been found. 100% of preservice teachers consider a complicated issue to convert the videos into

**TABLE 2 |** Questionnaire and accumulated data by element.

| | **Interest, motivation, usefulness, understanding, and appreciation of the videos** | | | | | |
|---|---|---|---|---|---|---|
| | | **Strongly agree** | **Agree** | **Undecided** | **Disagree** | **Strongly disagree** |
| Own video | Do you find the use of videos interesting to improve your teaching and linguistic competences? | 13 | 10 | 5 | 1 | 0 |
| | Do you think that the placements motivated you and improved your teaching and linguistic skills? | 16 | 10 | 3 | 0 | 0 |
| | Do you agree with the use of video for your learning? | 11 | 16 | 2 | 0 | 0 |
| | Do you think that this type of videos should be used for other subjects besides the practicum (Specifically in linguistic subjects)? | 10 | 15 | 4 | 0 | 0 |
| Tutor video | Is there a difference between the videos of the students and the video of the tutors' presentations? | 15 | 10 | 3 | 1 | 0 |
| | Have the videos helped you by watching the tutors' experiences? | 13 | 12 | 4 | 0 | 0 |
| | Do you think that the combination of your own videos and those of the tutors are useful? | 9 | 14 | 6 | 0 | 0 |
| Privacy | How complicated is it to prepare videos to comply with the privacy law without being an expert in the field? | 17 | 12 | 0 | 0 | 0 |
| | Do you think video recording affects individuals' data protection? | 14 | 10 | 4 | 1 | 0 |
| | Have you had any problems when recording your lessons (seeking authorizations, recording being prohibited, lack of resources to record correctly.)? | 7 | 14 | 7 | 1 | 0 |
| | Do you feel a lack of training in terms of knowledge on how to deal with data protection issues for students? | 19 | 8 | 0 | 2 | 0 |
| | Do you think you protected Students' privacy correctly? | 3 | 10 | 12 | 4 | 0 |

**TABLE 3 |** Table of responses and variance data.

| Preservice teacher | i1 | i2 | i3 | i4 | i5 | i6 | i7 | i8 | i9 | i10 | i11 | i12 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 5 | 5 | 5 | 5 | 5 | 3 | 4 | 4 | 3 | 5 | 3 | 51 |
| 2 | 5 | 5 | 5 | 5 | 3 | 3 | 5 | 5 | 5 | 5 | 2 | 2 | 50 |
| 3 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 3 | 3 | 4 | 2 | 49 |
| 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 59 |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 59 |
| 6 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 58 |
| 7 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 55 |
| 8 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 58 |
| 9 | 2 | 3 | 3 | 3 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 49 |
| 10 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 56 |
| 11 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 56 |
| 12 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 55 |
| 13 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 55 |
| 14 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 55 |
| 15 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 3 | 51 |
| 16 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 5 | 3 | 50 |
| 17 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 3 | 52 |
| 18 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 3 | 48 |
| 19 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 3 | 48 |
| 20 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 3 | 52 |
| 21 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 47 |
| 22 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 46 |
| 23 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 46 |
| 24 | 3 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 3 | 50 |
| 25 | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 3 | 4 | 3 | 43 |
| 26 | 3 | 4 | 5 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 4 | 2 | 40 |
| 27 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 | 46 |
| 28 | 3 | 3 | 3 | 3 | 5 | 5 | 3 | 4 | 3 | 3 | 5 | 5 | 45 |
| 29 | 5 | 5 | 5 | 5 | 2 | 3 | 3 | 4 | 2 | 2 | 2 | 2 | 40 |
| Total per item | 122 | 129 | 125 | 122 | 126 | 125 | 119 | 133 | 124 | 114 | 131 | 99 | 27.6052 |
| Variance per item | 0.7158 | 0.4542 | 0.3520 | 0.4400 | 0.6397 | 0.4899 | 0.5065 | 0.2426 | 0.6825 | 0.6159 | 0.6635 | 0.7253 | 6.5279 |

elements that can be shared without having previous experience and knowledge on how to do it (as established in step 4 of the procedure, one of the possible methods to avoid this difficulty is to explain it). Also of great importance, almost all respondents (93.1%) consider that they do not have sufficient training on how to deal with these issues of confidentiality, mainly relating to minors. As for the perception of whether the recording affects data protection or the problems encountered in doing so, these are the questions with the widest range of values, that is, with the most distributed answers, although their final value is significant (72.41%). As for their perception of whether the students are correctly protected, this is the question with the lowest value found, only 44.83% see it feasible and the option *Undecided* accounts for 41.38%, while 13.79% disagree.

The data in **Figures 4**, **5** shows more clearly the problem of data privacy and the difficulties encountered not only by preservice teachers but also by senior teachers.

## DISCUSSION

This study examines the pre-service teachers' perceptions of the effect of video self-analysis on their development of linguistic abilities and self-reflection abilities, and the influence that personal data privacy have on them and on its use as a tool.

During the presentation of the videos, the students made numerous comments and asked questions about what was shown. It was also noted that the students had commented on the videos among themselves before the overall presentation. As for the open-ended question (What are your impressions of this method?), the students offered very positive evaluations of the activity carried out, showing their satisfaction with the innovative didactic methodology proposed. The following are some of the most relevant comments made by the students.

- *The recording of the video was a surprise from the start.*
- *I had never recorded a video on my own, except for small videos on social networks.*
- *I find it very interesting. From experience, we know that students work very well and are very receptive when there are activities that are different from normal classes, especially if we are the protagonists.*
- *It reinforced ideas such as the importance of maintaining a good relationship and coordination with the tutor teacher (.).*
- *It allowed me to notice mistakes that I wasn't aware of (including mistakes in the way of speaking).*

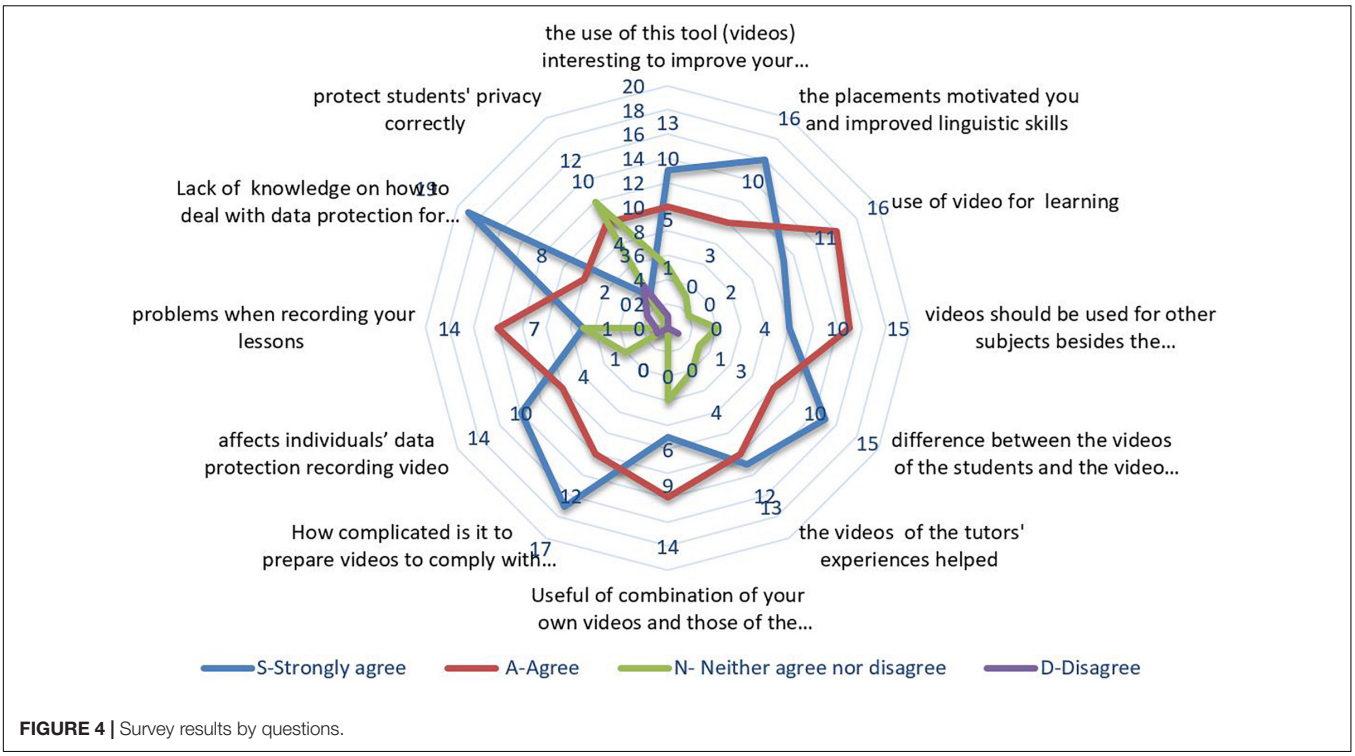


**FIGURE 4 |** Survey results by questions.

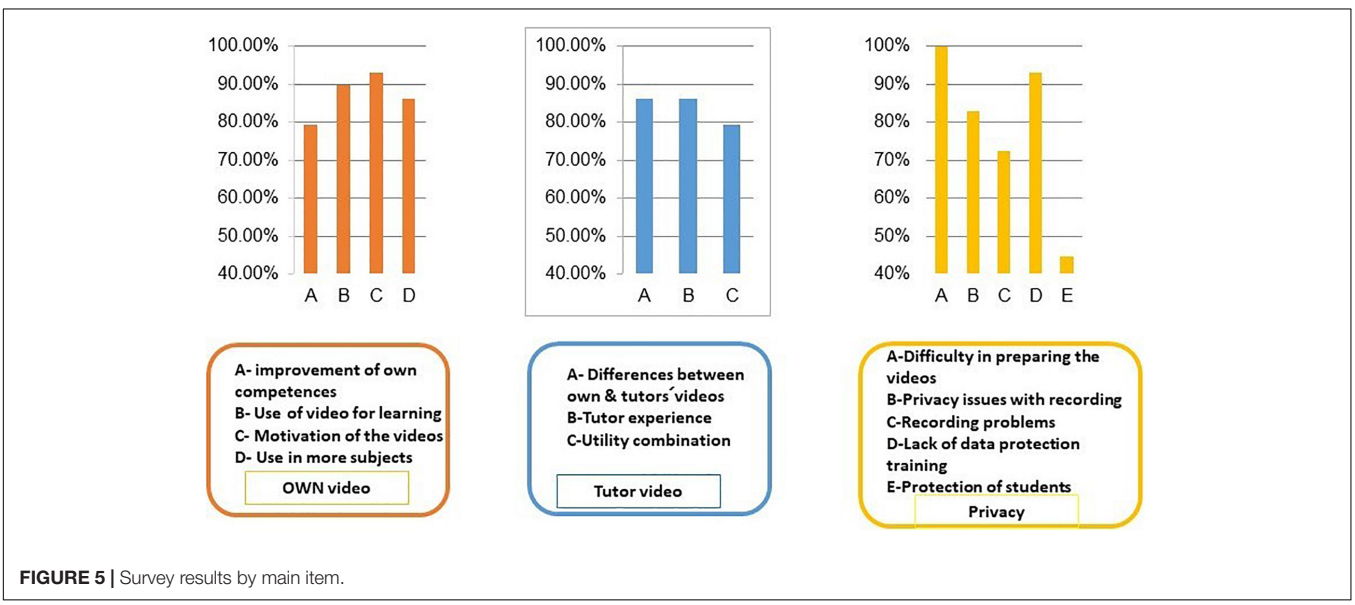


**FIGURE 5 |** Survey results by main item.

- *I think this will imply a motivational plus for the student and surely also a better assimilation of concepts. In addition, they will have to be fluent with ICTs, which is essential in today's education.*

Another element that was particularly significant for the students was the importance and significance of the quality of the relationship established between teachers and students:

- *We can see the pros and cons of each one's behavior, how it affects their level of knowledge, how some preteachers are stricter than others, and how others are more personal and approachable.*
- *We see how knowledge is not enough to generate confidence in the students.*

On the other hand, we found the following negative aspects, as we can see lack of knowledge and time is a very common complaint:

- *I do not completely understand the roles each person has when applying the methodology. The same with the work*

*plan or the presentation, if it is only between the teacher and the students. I think the videos made should be shared with the students of the school to see their reaction.*

- *If you think about it, it is very difficult and costly for teachers to apply this technique. In my case, the fear of making a mistake, of getting it wrong, added to the frequency with which you have to interact with the students, makes it very tiring.*
- *If I had to highlight any negative aspect, it would be the large amount of time involved in this type of project. However, I think the results are worth it.*
- *There is nothing I don't like, but I see difficulties and lack of knowledge and time in avoiding recording the Students' faces. Really complicated and outside the curriculum of a primary school teacher.*
- *The activity takes a little longer than initially thought.*

We will analyze the answers obtained according the hypotheses put forward.

H1. Preservice teachers were engaged in the practicum experience with the use of video self-observation.

Students were particularly engaged this practicum experience and they had very good opinions about it. In fact, to the question "Do you think that the realization of the practices motivated you and improved your linguistic competences?," 55.17% answered "Strongly agree," being the highest value in this category, in line with previous research about use of video in preservice teachers (Santagata and Angelici, 2010; Santagata and Guarino, 2011; McCoy and Lynam, 2021). In addition, as mentioned before, in the open-ended question, students offered very positive evaluations of the activity carried out.

H2. Preservice teachers perceive the difficulties in carrying out a practice using video while maintaining Students' privacy.

The analysis of the survey responses reveals that teachers' understanding of what constitutes digital privacy is very divided, ranging from strongly agreeing in some cases to disagreeing in others. Approximately 58% of the preservice teachers felt that it was complicated to work with videos (mainly as they commented in the open-ended question, because they feel that it is not part of their training nor should it be). When respondents were asked about the "lack of training on digital privacy" unfortunately, as we have already commented, 100% considered that they were not well trained. These results are in line with other research (see Leatham and Robertson, 2017) that claim that there is a policy vacuum around the use of digital tools and privacy in schools.

When asked how they protected Students' personal information, 62.5% of the responses were very specific and were considered proactive/protective. They included the following examples:

- *I used applications previously allowed by the center that did not require personal information.*
- *The lack of a parent's authorization could prevent the use of the recording since removing the child would be a counterproductive decision in itself leading to an even bigger problem.*

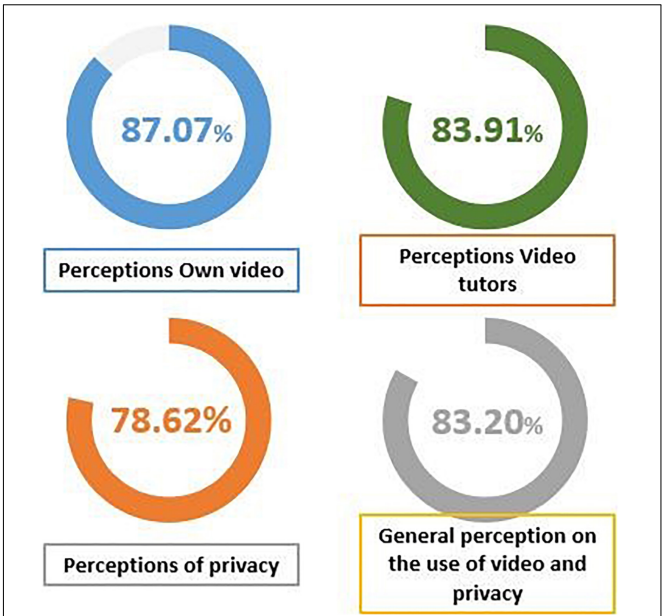


**FIGURE 6 |** Overall summary.

In addition, it seems that this issue has been discussed at school board meetings, as several students stated that: "*The Board of Directors provides us with a guide for action*."

H3. Preservice teachers perceive that the use of video self-observation is an effective element of teacher education pedagogy to improve their linguistic and self-reflection abilities.

87.07% of preservice teachers perceived that the use of video as a self-observation tool was effective to improve their linguistic and self-reflection abilities. The potential of digital observation to improve perceptions of one's own work agrees with previous research (Boster et al., 2007; Santagata and Angelici, 2010; Santagata and Guarino, 2011; Toci et al., 2015; Barth-Cohen et al., 2018; Major and Watson, 2018). For example Kane et al. (2016) reported that for 63% of teachers, the use of video was "quite helpful" or "extremely helpful" in identifying areas where they need to improve. Van den Bogert et al. (2014), suggest that studying their own or other teachers' videos allow student teachers to improve on their recollections of a lesson taught.

In the case of the participating preservice teachers, the results showed that the use and selection of videos allowed an improvement of competencies, specifically linguistic ones, resulting in them perceiving that they can be useful for other subjects, not only in the practicum. Similarly, there is agreement with other research that trainee teachers can more easily assess the complexities of their classroom and critically examine their own practice and to see their teaching from multiple perspectives when video technology is used (Newhouse et al., 2007; Shepherd and Hannafin, 2008; McCoy and Lynam, 2021). Our results highlights that new technologies in education are conceived as tools to provide a solution to certain questions, but this solution often encounters other regulations that are not directly related to education. **Figure 6** shows the overall summary.

There are limitations that could be addressed in future studies. First, the final sample size was smaller than expected; however, we tried to analyze our results as thoroughly as possible. For better generalization, the study should include either a larger number of respondents in a different study area or geographic area to test for similarity. Second, this study lacked the relationship between pre- and post-privacy law variables. Finally, it should be noted that in this study we did not analyze individually each aspect of the linguistic ability, that is, linguistic rules, grammar, language comprehension as so on, as noted by Raslan (1998). Nevertheless, we will take it into account in future investigations.

## CONCLUSION

This study examines the pre-service teachers' perceptions of the effect of video self-analysis on their development of linguistic abilities and self-reflection abilities, and the influence of privacy policy on its use. At the same time, we reflect on the perception of their own videos recorded in class with children and the videos recorded with the tutors. Our results indicate that preservice teachers feel motivated to use these materials as an element of learning competences and reinforcement of their educational and linguistic abilities. In fact, the results of this work agree with previous studies that point out the effectiveness of online video for the improvement of self-reflection abilities, as we have seen in the surveys.

In addition, our results show that implementing video tools in the classroom and reflecting about their contents later is an effective mean for assessing one's own learning and linguistic abilities and performance, although it seems to be highly dependent on the parents of elementary school students and the schools themselves providing authorization, as imposed by the restrictions of the data protection law. Finally, it should be noted that the data highlights the inherent complexities posed by EU GDPR regulations and the significant barriers to integrating video technology in the classroom in these contexts.

## DATA AVAILABILITY STATEMENT

The original contributions presented in this study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

## AUTHOR CONTRIBUTIONS

CM-Á, MC-A, and MD-R contributed to the conception, design of the study, and wrote sections of the manuscript. MD-R implemented the questionnaire. MC-A performed the data analysis. CM-Á wrote the first draft of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

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**Conflict of Interest:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.