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# Teachers' Opinions on the Use of Personal Learning Environments for Intercultural Competence

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**Abstract:** Background: The aim of the present study was to evaluate teachers' opinions on the use of Personal Learning Environments (PLE) for the development of students' intercultural competences. Methods: This investigation carried out a thematic analysis of semi-structured interviews applied to a sample of  $n = 100$  Compulsory Secondary Education teachers in Andalusia (Spain) with an average teaching experience of 13.13 years ( $SD = 6.63$ ). The interview shows excellent content validity (Content Validity Index for the interview overall,  $S-CVI = 0.94$ ). The concordant codes and sub-codes were established in the analysis with the participation of two researchers and an external expert. Then, the data was analyzed using NVivo software. Results: The results show the opinions of the teachers grouped into six separate codes: intercultural learning communities, learning improvement, intercultural development of the student, disinformation, inapplicability, and inappropriate use. Conclusions: In general, it is concluded that the teachers consider the benefits of using PLE in the development of students' intercultural competences. Despite this, some opinions reveal a lack of training and motivation, or the lack of ability teachers have on the subject, as well as in their classrooms, with the result that the PLE is not applicable for intercultural education.

**Keywords:** personal learning environments; teacher perception; intercultural education; intercultural competences; thematic analysis

## 1. Introduction

### 1.1. Present Learning Environments

Currently, new approaches to the understanding of learning exist, in which new ways of relating to others appear, and the acquisition of information is not limited to a specific time and space [1,2]. Theories of learning affirm that the relationship of people with their environment is the most important medium through which the teaching–learning process is created [3–5]. This process requires the use of both traditional and virtual spaces, and is determined by the tools, sources of information, and links between information and activities that each student uses for his or her training. These elements have collectively been defined as Personal Learning Environments (PLE) [2,6,7]. PLE are a set of tools and services that a person uses to build, manage and share knowledge. In PLE, students take an active role in the learning process. In this way, they can visualize their objectives more clearly, and the strategies to achieve them [1,8].

In addition to traditional learning environments, different studies specify the influence of information and communication technologies on the appearance of new PLE [8,9], among which

the following stand out: webpages, encyclopedias, and search engines to obtain information and filter results (keywords, year, language, author, etc.); social networks, such as YouTube or Facebook, which facilitate social interaction; online collaborative work tools, such as Google Docs, that allow the continuity of the learning process anywhere; and blogs and other tools, such as emails, chats, graphics, presentations, or videos. Shoshani and Eldor [10] show that the use of information and communication technologies complement and help the traditional teaching–learning process to achieve quality education. For example, virtual learning environments offer the opportunity to create novel and effective contexts such as simulations, role-plays, and avatars in collaborative works, among others [11–14]. According to Castañeda and Adell [1], all these virtual and traditional PLE can be classified into three fundamental categories: (a) tools and reading strategies, including those PLE that provide access to information, such as newsletters, blogs, video channels, quick readings, book reviews, and conference attendance; (b) tools and strategies of reflection, integrated by PLE that serve to transform the information and reflect it, such as blogs, publications, social networking walls, notebooks, and class diaries; (c) tools and relationship strategies, which include all PLE that enable interaction and exchange of information, such as social networks, applications or the classroom itself.

Likewise, PLE contribute to socialization [8,15]. This occurs in learning communities created with the use of PLE where experiences and social interactions are shared in an environment of trust, security and responsibility [16]. In addition, the use of strategies and virtual tools help to overcome students' physical and temporal difficulties to interact with one another [17].

In relation to this, research has found positive effects of social interaction for learning [18], demonstrating that collaborative learning is a useful effect of PLE, as it includes the coming together of all group members to build knowledge and solve problems, which favors integration [3,13,15]. In this sense, collaborative learning is the result of the learning resources and content shared in the PLE, that allow teamwork and collective learning through the participation processes they create [19].

### *1.2. The Importance of PLE in the Development of the Students' Intercultural Competences*

PLE have been influenced by the phenomenon of migration and globalization. In the last several decades, there has been a significant increase in the number of foreign students in classrooms, transforming these classrooms into intercultural learning contexts [20,21]. More specifically, in Andalusia, located in the south of Spain, the context in which the study was carried out, the high school education classrooms reflect the intercultural diversity present in the society [22]. As a consequence, there were 84,879 foreign, non-university students registered in that community during the 2016–2017 school year [23]. This transformation has meant the incorporation of new educational responses, among which are those that promote learning through cultural diversity [13,21].

The recommendations by experts in light of the effects of globalization suggest the need to find new teaching–learning methods [8] that would involve the creation of new environments for tending to the cultural diversity of different classrooms [24,25]. However, the educational policy for the Andalusian community does not allow intercultural education to be carried out in the official curriculum [26]. This type of education and the application of its necessary educational environments is left to the free choice of teachers at all times, which implies limited effects in the development of the students' intercultural competences [27].

In this sense, the PLE represent an advance for intercultural education in that they allow teachers to develop new curricula that favor collaboration among students from different cultures. For example, strategies and interactive tools such as Skype, Dropbox, or Prezi have enabled exchanges of information among diverse students [28,29], allowing the exchange of communication and experiences from an intercultural approach [24,30]. This experience develops what some theorists call intercultural competences, which facilitates appropriate behavior and communication between cultures [30–32]. Intercultural competences are defined as a multidimensional concept that begins with the acquisition of attitudes (respect, openness of mind, curiosity, and discovery), followed by the development of skills (listening, observing, interpreting, and evaluating) to obtain knowledge (cultural awareness, role

and impact of culture, etc.) [33]. In short, intercultural competences are the ability to communicate effectively and appropriately in intercultural contexts [34], which will be influenced by the personal experiences of students [35,36].

### 1.3. State of the Matter and Objective of the Investigation

Regarding the teachers' opinions, they consider intercultural education to be important for students, although according to them, this does not receive sufficient attention [37]. In a recent investigation, teachers affirm that the necessary resources are not regularly available to carry out intercultural education effectively, so it is difficult to put the teaching of intercultural competences into practice [38], and much less carry them out using PLE.

Additionally, some teachers believe that PLE offer effective opportunities in student relationships as they participate in learning communities focused on communication and the exchange of resources and tools [39]. Furthermore, other studies show that teachers believe the PLE enhance reciprocal learning for their students [40,41], and according to the results obtained from another investigation, they turn into subjects responsible for their own learning, which influences the development of students' personalities [42].

Despite the development, the studies focused on discovering the teachers' opinions on the use of PLE for the development of the students' intercultural competences are scarce. This is why this investigation set out to reach this objective. To do so, this investigation mainly focuses on the concept of intercultural competences which are defined as the set of skills that help develop specific knowledge, as well as attitudes that lead to proper behavior and communication in the interactions of people from different cultures [31,32,43].

In short, the investigation aims to discover the teachers' opinions on whether tools and training strategies (reading, reflection, and relationship) improve the students' intercultural competences [1], to know the teachers' beliefs on the use of tools and strategies related to information technologies on the development of this competence, and to discover the current situation of the use and applicability of PLE in the classrooms of the teachers who were assessed.

For this, a qualitative research design has been carried out in which the data were analyzed through thematic analysis, which consists of a research approach that presents effective objectivity in the analysis of issues [44].

## 2. Methods

### 2.1. Participants

A random sample of 100 teachers from secondary education institutes from different cities in Andalusia (Spain) was selected, with an average teaching experience of 13.13 years (SD = 6.63). Of the total, 8% had teaching experience of less than 5 years, 36% between 5 and 10 years, 23% between 11 and 15 years, 13% between 16 and 20 years, and 20% of the teachers had been working for over 20 years.

In terms of gender, 62% were male ( $n = 62$ ) and 38% were female ( $n = 38$ ).

As regards their field of study, 14% of the teachers teach Geography and History; 11% Biology and Geology; 9% Mathematics and Philosophy; 8% Physics and Chemistry; 7% Spanish Language and Literature; 6% French and Religion; 5% English and the specialty of Plastic, Audiovisual, and Visual Education; 4% Ethical Values, Classic Culture, and Music; 3% Physical Education and Information and Communications Technology; and 2% teach Technology.

The sample was selected at random from a set of 24 centers that wished to participate in the study, and only teachers were invited to collaborate in the study. Prior to the investigation, permission was requested from the appropriate educational authorities. Participation was voluntary, and the teachers were assured that their answers would be confidential.

Furthermore, in the context of this study, it is worth noting that Andalusian schools have a culturally diverse student body according to the Permanent Migration Observatory of Andalusia

(OPAM in Spanish) [23]. The student body mainly consists of students from European countries (35.53%), the African continent (34.85%), South America (12.43%), and Asia (7.44%).

## 2.2. Instrument

A semi-structured interview was used (see Appendix A). This type of interview is defined as a qualitative research technique in which information is obtained through questions established as a guide. In addition, a series of optional questions can be proposed, in case the interviewer believes it is convenient to ask them, depending on the conversation [45].

In this investigation, an initial ad hoc interview was prepared, adapted from and based on the one conducted by Agirdag, Merry, and Van Houtte [28] and completed with questions related to the categorization of PLE proposed by Castañeda and Adell [1]. Content validity was determined after the instrument was applied to the teachers [46]. This analysis verified whether the interview measured what was expected. To conduct this analysis, 17 experts were involved whose answers served to analyze the content validity index (CVI) [47]. First, the CVI was determined for each element of the interview (I-CVI) by asking the expert panel to rate the importance of each item in evaluating the teachers' opinion regarding the use of PLE in the development of intercultural competences of their students, following a four-point Likert scale (1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, and 4 = very relevant). With the I-CVI, the percentage of experts that provided a rating of quite relevant (3) or very relevant (4) for each element of the interview was obtained. Those items that obtained an index of I-CVI < 0.78 were eliminated, as recommended in the literature [47]. Subsequently, the CVI for the interview overall (S-CVI) was obtained, assessing the average of the I-CVI of each element [48]. An index S-CVI = 0.91 was obtained, and thus, according to Polit et al. [47], the interview initially evidenced excellent content validity.

After conducting the interview with the teachers, the CVI was evaluated again. In this case, the index for the semi-structured interviews conducted with high school education teachers in the 2017–2018 academic year was S-CVI = 0.94, maintaining excellent evidence of content validity.

## 2.3. Process

### 2.3.1. Information Collection

Once permission was obtained from the relevant educational authorities, semi-structured interviews were given to secondary education teachers in the 2017–2018 academic year. The researcher maintained the guidelines of the interviews at all times. Interviews were conducted in the teachers' rooms in the different chosen institutes with a duration between 20 and 30 min and were recorded or transcribed directly with each participant being assigned a pseudonym. An initial explanation of the study was given, and the possibility to clarify any doubt about PLE and intercultural competence was offered. All the established questions, including those not posed initially, were directly related to the teachers' opinions regarding the use of PLE in developing the intercultural competences of the students.

During the whole interview process, ethical guidelines stated in the Helsinki Declaration were followed, as well as those in the protocol approved by the Ethics Committee in the University of Granada.

### 2.3.2. Data Analysis

The interviews were analyzed using thematic analysis [49]. The data obtained was discovered in an inductive way, and the answers obtained from the data were evaluated, which provide new perspectives for understanding the reality [50]. This occurred in the way described below.

In the first phase, manual transcription of the interviews was carried out. Then, in the second phase, initial codes were generated that were applied to the data. These codes emerged from the analysis of the answers to the 13 questions given by the teachers in the semi-structured interview.

This way, the intercultural learning communities code was obtained from the analysis of Questions 3, 4, 10, and 11. The code learning improvement was obtained from the analysis of Questions 5, 6, 7, 8, 9, 10, and 11. The intercultural development of the student code was obtained from the analysis of Questions 3, 4, 6, 8, 9, and 11, and the disinformation code from Questions 1, 2, and 12. Finally, the inapplicability and inappropriate use codes were obtained from the analysis of Questions 12 and 13.

In the third phase, the answers that belong to each code were grouped by similar content. In the fourth phase, the sub-codes were identified, and in the last phase, the established sub-codes were redefined (see Table 1).

**Table 1.** Themes and sub-themes extracted from the opinions of the teachers who were assessed.

Themes	Subthemes
Intercultural learning communities	Social interactions Intercultural experiences Exchanges of information
Learning improvement	Access to information Reciprocal learning Self-learning
Intercultural development of the student	Integration Respect Tolerance Empathy Critical attitude
Disinformation	Lack of knowledge Lack of ability
Inapplicability	Motivation Classroom resources Organization
Inappropriate use	Misuse They are not used for intercultural education

The whole process was carried out separately by two researchers and an external expert using the latest version of NVivo qualitative software. This research software was chosen due to its ease of use and the good training that researchers and experts have on it.

The reliability of the data analysis was analyzed obtaining the concordance results from the codes and sub-codes among the researchers, which varied from  $K \geq 73$  to  $K \geq 92$ . The different codes and sub-codes were then revised and altered for their inclusion in the analysis. Finally, an external researcher who was not familiarized with the investigation analyzed 35% of the interviews. The analysis of their data with the codification of codes and sub-codes was compared to the researchers' analysis and showed a concordance interval of  $K \geq 83$ .

The interviews were analyzed in Spanish, although, to illustrate these results in this paper, they were translated into English.

### 3. Results

#### 3.1. Thematic Analysis of the Answers Given by the Teachers

The thematic analysis of the data was carried out [49], and the interviews revealed six main themes for classifying the teachers' opinions on the use of PLE to develop students' intercultural competences: (1) intercultural learning communities, (2) learning improvement, (3) intercultural development of the student, (4) disinformation, (5) inapplicability, and (6) inappropriate use.

The themes were also divided into subthemes. The category system used in the thematic analysis is shown in Table 1.

### 3.1.1. Intercultural Learning Communities

In general, the teachers affirmed that PLE particularly related to the tools and strategies for interaction and reflection improve the students' intercultural competences. According to these teachers, the principal motive is that the use of chats, communal areas, webs, videos, games, educational platforms, social networks, and apps in the classrooms, favor teamwork, and in turn, encourage education in intercultural learning communities. In these communities, a network is established in which the students interact with other students from different cultures; they exchange information and make the creation of intercultural experiences possible.

- Social interactions. The teachers say that when a student interacts socially with another of different ethnicity, culture, or religion, an improvement in communication skills and cultural knowledge is experienced by both. In relation to this, and faced with the question, "What is your opinion on the link between the personal learning environments that you use and the intercultural education of your students?", there are some answers that serve as an example of the above:
  - "I think they result in significant benefits in the intercultural education of our students and all adolescents in general, as they allow the exchanging of opinions, and the generation of new knowledge, ideas,"* etc. (Geography and History teacher with 12 years of experience).
  - "When intercultural education occurs, it happens through personal peer relationships as they exchange their own cultural reality on a day-to-day basis. This happens when the students socialize in person and through social networks"* (Geography and History teacher with 5 years of experience).
 Furthermore, the social PLE are those which the teachers consider as being fundamental for creating positive interactions in intercultural contexts. The main cause is the teachers use these strategies and tools to form work teams, encourage collaborative learning, and create online communities. Interactions between students are created using traditional teaching methods or the use of technologies, as the answers show.
  - "Social strategies in the classroom can help to form a positive attitude towards others, and to acquire values such as respect and to increase affective relationships through social networks"* (Information and Communications Technology teacher with 17 years of experience).
  - "In my classes, we choose a subject to address and link it to interculturality in some way, as Almería is a province with a high percentage of foreigners. By playing games, the whole group comes together to take part, share, and have fun. We also have comprehensive readings of articles, books, work groups, and watch films"* (Ethical Values teacher with 5 years of experience).
- Intercultural experiences. Mostly, the teachers think that the learning communities created through PLE of interaction and reflection alter the students' intercultural experiences and their perception of their surroundings. The reason is that contact with culturally different people helps them to understand their reality. This is why the question, "Why do teachers think the tools and strategies for interaction and reflection assist students' intercultural competences?" obtained answers such as the following:
  - "They are very important and necessary, especially for helping students to open their minds"* (Physics and Chemistry teacher with 2 years of experience).
  - "They change mistaken concepts, help to understand the others and work on developing empathy,"* etc. (Philosophy teacher with 23 years of experience).
- Exchange of information. The teachers believe that information and communication technology facilitates the exchange of information in intercultural learning communities. Some examples of the answers that support these opinions are the following:
  - "I think we have platforms nowadays where intercultural information may be exchanged and expressed, and this is beneficial"* (English teacher with 6 years of experience).
  - "The internet is the largest source of information nowadays, and the most important environment for many subjects; it connects many people and facilitates communication"* (French teacher with 10 years of experience).

Furthermore, the teachers consider the speed at which these exchanges occur with people in any part of the world a big advantage for the intercultural education of students. The following opinion is an example of this:

*“The growth of new technologies makes personal learning environments for students increasingly more cybernetic. This is a big advantage, as students are just a click away from accessing a world of information on their screens. The use of social networks is the norm, and these applications bring people together from all cultures, and let people meet very easily, regardless of where they may be in the world. That’s why I think it’s easier to bring cultures together, and to learn from each other”* (Religious Studies teacher with 7 years of experience).

### 3.1.2. Learning Improvement

In general, the teachers’ opinions link the use of PLE for reading and reflection with an improvement in the students’ learning, which has an effect on the development of their intercultural competences. The main reason that the teachers expose is that the use of strategies and tools such as documentaries, series in their original version, blogs, social networks, films, school planners, articles on intercultural opinions or chats in which experiences are shared, facilitates the access to information, the reciprocal learning and self-learning of the students:

- Access to information. The teachers consider that the strategies and reading tools demonstrate a fundamental role in the improvement of access to information for the students. In this regard, the general opinions link information and communications technology with the speed and access to a larger quantity of information, even to approach information from other cultures in real time. The following answer is an example of this thought:
 

*“They give us access to information we find in a quick way. They allow us access to culture and education. Knowledge changes the world and our world is changing; we must adapt to the new times, hence the importance that these tools have”* (Biology and Geology teacher with 21 years of experience).

 Nevertheless, there are also opinions that stress the importance of controlling and mediating the access to this information.
 

*“They are useful from the beginning due to their mere presence and availability in the classroom or on the Internet. But their knowledge and use aren’t enough if there isn’t good management of the knowledge on the teacher’s part, along with their good will and conviction when it comes to giving knowledge, customs, and multiple realities”* (Geography and History teacher with 22 years of experience).
- Reciprocal learning. The teachers’ opinions that PLE for reflection are very important for students concerning their reciprocal and intercultural learning because through these tools and strategies they can transform their information and exchange cultural ideas. Some examples of these opinions are:
 

*“They assist cultural exchanges and knowledge from other cultures”* (Plastic, Audiovisual, and Visual Education teacher with 33 years of experience).

*“The most important information is captured, and the students manage to reflect among cultures and establish common objectives”* (Physics and Chemistry teacher with 4 years of experience).
- Self-learning. With regard to the improvement of intercultural learning itself, in general, the teachers believe that PLE used for reflection contribute to certain benefits in the self-learning process. The main causes are because the students become an autonomous, critical, and reflective being of their own learning. The following answers are an example of these opinions:
 

*“They allow students to stop, think, and realize the personal and social enrichment that imposes the union and interrelation of cultures”* (Philosophy teacher with 22 years of experience).

*“They encourage the autonomy of the students; allow the integration of skills, present the content in a contextualized way, and boost interculturality, as students interact with real material”* (French teacher with 10 years of experience).

### 3.1.3. Intercultural Development of the Student

The teachers who were assessed agree on considering that the strategies and tools for reading and reflection are key aspects for the acquisition of attitudes and fundamental values in the development of the students' intercultural competences, mainly because they train students to be reflective and to understand the intercultural information to which they have access.

The values and attitudes that show the teachers' opinions are integration, respect, tolerance, empathy, and critical attitude. The reasons for choosing these values of teachers and examples of the answers given are shown below.

- Integration. The teachers think that if they develop intercultural situations (virtual or traditional) with the students, they will end up integrating with one another and accept a different culture. *"The interaction tools can help integration when they are used correctly, as they interact with each other and reflect on specific subjects. I think they improve students' attitudes and skills regarding the integration and acceptance of the diversity"* (Biology and Geology teacher with 13 years of experience).
  - Respect. In general, the teachers' opinions link the acquisition of the value of respect with the exercise of communication and knowledge between cultures. In this way, examples of the answers to the question, "What do you understand by intercultural competence training?" are as follows: *"It's an education that could be understood or worked in a transversal way based on the communication and respect between different cultures and would also mean a source of personal enrichment that has a positive effect in society. It would be useful for preventing or addressing conflicts from another perspective: knowledge and respect for others"* (Spanish Language and Literature teacher with 2 years of experience).
  - Tolerance. Another value that prevails among the teachers' opinions is that of tolerance. In this case, it is related to the students' intercultural education, considering that tolerance is an implicit part of intercultural interaction. *"Because students improve their knowledge and interaction with other people. The students' tolerance and respect are increased"* (Biology and Geology teacher with 22 years of experience).
  - Empathy. The teachers' opinions link the acquisition of this value with the use of strategies and tools for reflection and interaction. Where intercultural interaction will allow knowledge among students, making them reflective, critical and empathic with the cultural issues of the partner. *"If we use tools for reflection and keep them, this is going to be very useful to form critical, reasonable, and empathetic people with initiative who are good at solving conflicts. These skills are the basis for achieving an intercultural education"* (Spanish Language and Literature teacher with 7 years of experience). *"The interactions let you understand people with likes, cultures, and interests that are very different to your own, which brings you closer to others, and lets you see their everyday life. They help to understand them and to appreciate their culture"* (Information and Communication Technology teacher with 6 years of experience).
  - Critical attitude. The teachers' opinions on the development of their students' critical attitude focus on considering that this is a direct effect of PLE for reflection, because in this way they analyze the information of the environment, being critical of what happens. *"I think these tools are very necessary in the teaching–learning process, as it is the instance when students manage to reflect and analyze the information given to them. In this way, they can manage to form a critical opinion and with fundamentals on intercultural education"* (Ethical Values teacher with 12 years of experience).
- Furthermore, it is worth highlighting that the teachers link PLE to the development of positive attitudes towards diversity, due to the increase in intercultural information about the other that will improve the values of respect and tolerance. *"They are very important as the social strategies in the classroom can help to form a positive attitude towards others, and to acquire values such as respect and increase affective relationships through social networks"* (Information and Communications Technology teacher with 17 years of experience).

In general the teachers take into account the positive aspects that PLE have in their students' education regarding intercultural competences. However, different opinions exist, not generalizable to most, that show the disinformation of the teachers, as well as the lack of motivation, resources, or good organization as the reasons that prevent the application of PLE in their classrooms or if PLE are applied, they are not used for intercultural education, or are performed incorrectly.

Below are examples of teacher responses from the above.

#### 3.1.4. Disinformation

Considering the question, "Do you use personal learning environments in your classroom to develop intercultural competences?" there are teachers' opinions that emphasize a lack of knowledge and ability as the main reasons as to why they don't use PLE. Among the causes of this disinformation are a lack of time for carrying out lessons related to PLE or with intercultural education, and the use of an educational curriculum that does not address intercultural competences nor the use of PLE.

- Lack of knowledge. The lack of knowledge on PLE is noted in some of the teachers' opinions, either because they claim the concept is new to them, or because they define it inaccurately. *"I didn't know the concept until I read the introduction"* (Plastic, Audiovisual, and Visual Education teacher with 22 years of experience). *"I'm not sure, but I think it's the possibility that each student learns and discovers knowledge through the use of new technology. I wouldn't know how to describe different types, but I suppose it's according to the technology that is used: blog, Wikipedia, apps"* etc. (French teacher with 14 years of experience).
- Lack of ability. Those teachers who feel they do not have the ability to apply PLE in the intercultural education of their students' attribute their insecurity to a lack of training. This is why there are several teachers who provide a negative opinion in answer to the question, "Do you feel qualified to use personal learning environments in training for the intercultural competences of your students?". *"No, it's due to a lack of training. Training is voluntary in our job; it's carried out in our own time and practically never within our workday"* (Mathematics teacher with 3 years of experience).

#### 3.1.5. Inapplicability

Other reasons why the teachers decide not to use PLE in educating their students in the development of intercultural competences focus on the lack of motivation on the school's part, by the education system or by the teachers themselves, in the lack of necessary resources and in the shortage of time and appropriate contexts for carrying out intercultural activities.

- Motivation. A demotivated teacher does not link intercultural education content to those of the ordinary curriculum. *"No, because I currently follow a very traditional education and keep teaching the essentials without developing the students' cultural intelligence"* (Classic Culture teacher with 8 years of experience). Furthermore, with regard to the demotivation of the teaching staff, this is in addition to a lack of interest in intercultural education from the school itself and the current education laws in Spain. *"No, it's not given much importance in my school"* (Geography and History teacher with 6 years of experience). *"No. The schedules don't include much about it. There still isn't much on intercultural education introduced into the education world. The way to take it into account is not clearly defined in the law, and it's not a priority within the present legal educational framework"* (Geography and History teacher with 25 years of experience).
- Classroom resources. According to some teachers, the lack of personal resources and materials is what makes the applicability of the PLE difficult in intercultural education. *"Although we try to use the internet, sometimes it's impossible because we can't get online, there are no computers, or they are broken"* etc. (Information and Communications Technology teacher with 10

years of experience).

*“The truth is that, in practice, factors such as the high ratio of students in obligatory lessons and the lack of human resources for tending to them are what prevent them from being carried out”* (Mathematics teacher with 5 years of experience).

- Organization. Other teachers’ opinions add the bad temporal and spatial organization to the aforementioned reasons which make the use of the PLE difficult for intercultural education.  
*“No, it’s due to a lack of time and because the classrooms are quite small. These subjects can’t be addressed or given a more varied approach because there are too many students per classroom”* (Philosophy teacher with 13 years of experience).

### 3.1.6. Inappropriate Use

Among the teachers’ opinions on this subject, some opinions reflect a general misuse of PLE in and out of the intercultural context, and some others highlight they are not used for the students’ intercultural education.

- Misuse. The opinions on the misuse of PLE reflect a lack of teacher training, especially in aspects related to when and how to use such environments. As a result, the following answers with regard to the use of environments for intercultural education were given:  
*“It’s only in class when students with other nationalities appear, so it’s then when I try to implement activities using the PLE to integrate those students”* (English teacher with 6 years of experience).  
*“No, because they must leave the classroom to do that”* (Physical Education teacher with 24 years of experience).
- They are not used for intercultural education. Lastly, some teachers are of the opinion that there is no use of PLE to educate students in intercultural competences. Most of these opinions agree that the main cause is a lack of devotion from teaching staff which could allow for PLE in favor of cultural integration.  
*“No, because more attention is usually paid to our culture in most cases. We work with our content and leave the others out”* (Biology and Geology teacher with 19 years of experience).  
*“No. These are generally carried out in the different subjects of different transversal curricula, and from the Guidance Department. Among them are education in values, exchanges, charity campaigns”* etc. (Spanish Language and Literature teacher with 15 years of experience).

## 4. Discussion

The objective of this study was to evaluate teachers’ opinions on the use of PLE in the development of students’ intercultural competences. Subsequent to the analysis carried out, the results generally show that the teaching staff consider the benefits of using these tools and strategies for students’ intercultural development, this being in line with the opinions of teachers collected in previous studies [51–53]. More specifically, they highlight the ability of the PLE to generate intercultural learning communities in which the students interact by exchanging lessons and experiences. This situation favors the students’ intercultural competences, as they acquire important intercultural knowledge [54,55]. In this direction, and just as Hue and Kennedy [56] affirmed, teachers must connect the minority to the majority, in order to tackle cultural diversity in a positive way in the classroom. In addition, the teachers believe these communities improve their students’ intercultural education through active construction of learning [57], and this allows the creation of different work groups, which is a relevant fact for encouraging students to learn in groups or individually [58–60].

The teachers also believe that another important benefit from the use of these environments is the acquisition of values such as respect, tolerance, empathy, and integration, which are fundamental in the intercultural education of the students [61–64]. To put the underlying attitudes into practice for these values is also a necessary situation for the individuals to be culturally competent in intercultural meetings [65], since as stated by Sreekumar and Varman [66], the education in values, focused in

intercultural situations where two or more diverse groups and their individual members have contact, will lead to changes in their values and in the behaviors related to these values, through the phenomenon of acculturation.

Nevertheless, some of these teachers admit they do not use PLE, or do so inappropriately in their classrooms, and, in accordance with previous studies [37,38,67,68], without sufficient training to use them. In this situation, it is necessary to train the teaching staff for them to integrate the PLE into the everyday dynamic of their classroom, preparing them for the appropriate use of strategies and techniques [69,70]. With regard to this, He, Lundgren, and Pynes [36] consider that a good way to train teaching staff is through intercultural immersion programs. Presently, this is not carried out in the schools that were assessed, and this is mainly because the current education laws [26] do not reflect intercultural education in the curriculum, as it is not considered to be a priority for the teachers to be trained for this in these schools [71].

In addition, it is important to take into account that knowing is not the same as doing [70] in the application of PLE. This aspect, which also reflects on some of the teachers' opinions and coincides with the results of other investigations [68,70], affirms that the theoretical aspects of the PLE are known, but they do not feel motivated or prepared to apply them in their classrooms, and even less so to use them in the education of the students' intercultural competences. Taking into account what was mentioned earlier, Spanish legislation leaves it up to the interest of the teacher to apply intercultural education in the everyday dynamic of their classrooms [27]. This fact, plus the lack of time, resources, or suitable contexts for the use of certain PLE stand out as the main causes for the lack of interest of teachers' who thought they were demotivated and incapacitated. For these teachers, sociocultural diversity is accepted as a positive phenomenon that can contribute to the learning process in a constructive way. However, these ideological principles are far from being applied consistently, both in theory and in educational practice [72]. If in educational institutions, teachers are not able to consider, in a pedagogical and sociological sense, their intercultural practice and build a critical view of themselves, students in classrooms with cultural, ethnic, and religious diversity can see their intercultural competence affected [73].

In short, a need is identified in the results obtained for carrying out further investigations along lines that allow the training, preparation and motivation of teachers through educational interventions as they claimed to feel uninformed or demotivated for the phase of Compulsory Secondary Education. These investigations/actions must show the teaching staff the need to significantly integrate cultural experiences into their classrooms with activities on reflection, analysis, and collaboration, as well as to promote curricular innovation in a way that the cultural diversity of the enrolled students is taken into account [74]. In order to do this, suitable PLE have to be used that encourage experiences, feelings, or values related to the diversity of their students [75,76].

## 5. Conclusions

After completing the analysis of the teachers' opinions on the use of PLE for students' intercultural competences, the conclusions focus on two important aspects: the teachers' answers, and what the researchers discovered.

By analyzing the teachers' opinions, it is clear that they are generally aware of the benefits that the use of PLE can provide towards their students' intercultural education. For example, most of the interviewees believe that the use of learning tools and strategies improve their students' education, the intercultural development of their education, and the establishment of intercultural communities in their classroom. In this way, the use of PLE for interaction and reflection involves communal areas, websites, videos, educational platforms, apps, or traditional games which are considered as mediums by teachers to encourage intercultural social interactions in their classrooms, the exchange of information in various contexts, and the creation of new cultural experiences for their students.

Furthermore, teachers also believe the tools and strategies used to access information and for reflection, such as documentaries, social networks, school planners, blogs, series, articles for reflection

and debates, improve reciprocal learning between different students and student learning itself regarding intercultural aspects and the training. Consequently, teachers consider that these tools allow access to information in a quicker way, and in real-time.

The benefits for the students are increased by the teachers' opinions linking the use of the aforementioned tools and strategies with the improvement of the intercultural development of the students, acquiring values such as integration, respect, tolerance, and empathy towards people from different cultures and developing a critical attitude which, according to the teachers, often transforms into a positive one after an intercultural connection is established.

On the other hand, even taking into account the positive influence that PLE have on their students' education regarding intercultural competences, some teachers' opinions show a lack of their ability when it comes to applying them in their classrooms, which is most of all due to a lack of appropriate training on the subject. In relation to this, the teachers' opinions reflect that they either do not define the concept of PLE well, or they have no knowledge of them. Furthermore, they attribute a lack of time for training and the use of a curriculum that does not take intercultural competences into account, nor the use of the PLE, as the main reasons for their disinformation. On some occasions, this disinformation results in an inappropriate use of PLE in the classroom, or their use is delegated to other areas of the educational institution, such as the school's Psychopedagogical Guidance Department.

The inapplicability of PLE is also reflected in the opinions of some teachers who complain about the lack of personal resources and materials available, the bad spatial and temporal organization of their classrooms and the lack of support from the institutions and the education law that makes the education of intercultural competences difficult for students through the use of specific tools and strategies.

Lastly, with regard to the teachers' opinions, it is worth highlighting those that reflect the attitudes of a certain sector of the teaching staff who, even though they may have sufficient information on the subject, feel a lack of interest to work with intercultural content in their classroom and do not link it to the content of the ordinary curriculum.

With regard to what the researchers discovered after carrying out the study, the main conclusion is that the semi-structured interview used in the study is valid for measuring the teachers' opinions on the use of PLE for the development of students' intercultural competences. The qualitative results obtained demonstrate the effectiveness of the use of this interview according to the combination of pre-established questions, and other questions brought up during the conversation with the teachers that allowed meaningful information to be obtained. In addition, the selection criteria of the system of categories used for analyzing the teachers' answers may be considered as valuable and productive, as the system allowed the diversity of the opinions given to be ordered and grouped easily. As a consequence, it may be considered that the choice and contrast of the codes generated by the researchers and the external expert, as well as the modification process of those which turned out to be different, were carried out in an appropriate way.

Finally, it is worth highlighting that the results of the study must be cautiously considered because although they were obtained from a representative sample, the generalization of the findings is limited because they were only gathered in Andalusia. Therefore, the opinions given by teachers should be understood with caution and cannot be extrapolated to teachers from other contexts. Despite this limitation, the study has expanded previous investigations regarding the teachers' opinions on using PLE for the development of students' intercultural competences.

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## Appendix A

Representative index of the questions asked in the semi-structured interview.

1. What do you understand by intercultural competence training?
2. Do you know what personal learning environments are?
3. What is your opinion on the link between the personal learning environments that you use and the intercultural education of your students?
4. Do you think that the use of personal learning environments improves the student body's acquisition of intercultural attitudes and competence?
5. Do you think that the learning environments related to reading tools and strategies (newsletters, blogs, video channels, textbook revision, etc.) can favor the intercultural competence of the students?
6. Why do you think these reading tools and strategies favor the intercultural competences of your students?
7. Do you think that the use of tools and strategies of reflection (blogs, publications, social networking walls, notebooks, class diaries, etc.) improves the intercultural competences of students?
8. Why do you think these tools and reflection strategies favor the intercultural competences of your students?
9. What is your opinion on the use of information and communication technologies for the acquisition of intercultural competences?
10. Do you think that the tools and relationship strategies (social networks, applications, the classroom, etc.) improve the students' intercultural competences?
11. Why do you think the tools and strategies related favor the intercultural competences of your students?
12. Do you feel qualified to use personal learning environments in training for the intercultural competences of your students?
13. Do you use personal learning environments in your classroom to develop intercultural competences?

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