

Article

Analysis of Psychometric Properties and Validation of the Personal Learning Environments Questionnaire (PLE) and Social Integration of Unaccompanied Foreign Minors (MENA)

Asunción Martínez-Martínez * , María del Carmen Olmos-Gómez , María Tomé-Fernández 
and Eva María Olmedo-Moreno 

Department of Research Methods and Diagnosis in Education, University of Granada, 18071 Granada, Spain; mcolmos@ugr.es (M.d.C.O.-G.); mariatf@ugr.es (M.T.-F.); emolmedo@ugr.es (E.M.O.-M.)

* Correspondence: asuncionmm@ugr.es; Tel.: +34-675-339-607

Received: 28 April 2019; Accepted: 20 May 2019; Published: 22 May 2019



Abstract: Background: The aim of the present study was to validate and develop the dimensions of the Personal Learning Environments (PLE) questionnaire with regards to the social integration of unaccompanied foreign minors (MENA), in addition to analyzing its psychometric properties. Methods: This study was conducted using an expert panel and exploratory techniques in a population of unaccompanied foreign minors (referred to hereon as MENA). The sample used for the validation was formed of 250 MENA aged between 13 and 17 years, with 206 (83.6%) being male and 41 (16.4%) being female. An expert panel was formed including 10 scholars of Education Sciences. The panel identified four dimensions, which were confirmed through exploratory factorial analysis conducted using the program called FACTOR Analysis (Lorenzo-Seva and Ferrando, 2006). Results: The results indicate that the PLE questionnaire provides reliable dimensions at the level $\alpha = 0.902$. Examination of Pearson correlations identified significant values ($p < 0.01$) for almost all dimensions, with the highest value being produced for the association between the dimensions of communication and social interaction (CIS) and planning and management of learning ($r = 0.641$). Conclusions: From this study, it is concluded that the results of the study and the validation of the PLE in MENA populations through the four identified dimensions are valid and reliable for enabling multi-dimensional analyses to be carried out.

Keywords: learning environments; PLE; MENA; foreign minors; education

1. Introduction

Unaccompanied foreign minors, collectively known as MENA, describe a group of individuals who emerged over the last three decades. Members who are classed as being minor in age (aged under 18 years old) decide to immigrate and embark on a trip without the support of an adult relative. Other authors suggested that these individuals often begin their journey in parallel to journeys undertaken by adult countrymen, with the main common objective of “seeking a better future” [1].

This aforementioned phenomenon led Spanish cross-border cities such as Ceuta and Melilla, which border Morocco, to mobilize specific reception centers to deal with this type of migratory change. The majority of users who receive the status of MENA, MINA (unaccompanied immigrant minors), and MMNA (unaccompanied migrant minors) hail from Morocco due to its proximity to the European continent. Other main places of origin include parts of sub-Saharan Africa, and countries of northern Africa in general.

This group of minors enter Spain with the status of irregular immigrant and are of school age. This generates debate about whether the individual's immigration status, or status as a minor should be prioritized [2,3].

A further consideration is that of the numerous characteristics presented by these individuals which tend to define their profile. These include language difficulties, low educational status, and scant resources to communicate with others. In this line of research [4], other authors also noted difficulties of socialization with the peer group, behavioral problems, failure to adapt to school, and acculturation.

A literature review was carried out considering research of MENA and their profile, noting that studies were conducted on legislation, migratory projects, social vulnerability, acculturation processes, socialization, psychosocial wellbeing, and preparation for active life [5–12]. However, the review also indicated a scarcity of interventions investigating training, education, and autonomy of learning environments [13,14].

With respect to the PLE, the studies conducted almost always used university populations [15,16]. Cháves [17] and Chávez, Trujillo, and López [18] focused on students of Education Sciences in their analysis of the way in which digital tools influenced personal learning environments (PLE) in the process of self-regulation of the student's learning. Other authors extended the field to also consider the group of teachers through the framework, while working with students of Media Education, with whom they developed digital texts with the support of the resources offered in their PLE [19,20].

At the time of writing, both the studies and the questionnaires used by them are directed exclusively toward university populations and, in some cases, to the teaching methods used. Studies using the PLE for unaccompanied foreign minors are not currently found in the literature.

A synergy should exist between both elements for the educational improvement of the minor, considering the PLE as a tool that potentiates inclusion of the non-native in the educational system. Previous studies reflected that personal learning environments are crucial at the time of developing student autonomy and improving their academic performance [16,18]. They also signaled the importance of including virtual media in order to improve the search for training information through good use of TICs (Information Communication Technologies) and social networks.

From the findings discussed, a need emerges to produce a tool capable of measuring the personal environments of the MENA. Cabero and Llorentes [21] validated a PLE instrument for use in formal training contexts. This was used to evaluate technical aspects, environmental displacements, and ease of navigation. Other studies designed an instrument allowing inquiry into the tool used by students to manage their online teaching processes, both inside and outside of the classroom [17,22]. When validating the questionnaire titled CPLE, characteristics reported by students to promote learning were established and technological tools were found to be important.

Faced with a lack of scales, questionnaires, or tests adapted to the group of interest, the present work commits to the design and development of an instrument for a population that presents with the aforementioned characteristics. The study seeks to endow higher indices of validity on the instrument, offering data for comparison with previous studies conducted in similar contexts. The objectives that the present study set out to address are as follows: (a) to develop conclusions on content validity through agreement of an expert panel; (b) to determine the level of instrument aggregation in a sample of MENA; (c) to analyze the psychometric properties of the PLE in order to calculate reliability of the instrument, and its application and adaptation to the population of unaccompanied foreign minors, through exploratory factorial analysis (FACTOR).

2. Materials and Methods

2.1. Subjects and Design

In the present study, the sample was composed of 250 MENA aged between 13 and 17 years (mean (M) = 16.05 years; SD = 6.731); 209 (83.6%) participants were male and the remaining 41 (16.4%) were female. The questionnaires were administered to the sample at two reception centers in Ceuta

and Melilla (Centro de la Esperanza (Center of Hope) and Centro la Purísima (the Purest Center)). During administration of the questionnaire, eight questionnaires were excluded from the study for being erroneously completed.

Furthermore, five youngsters did not take part in the study because they did not provide informed consent. Sociodemographic data and the distribution of the sample are presented in Table 1.

Table 1. Sample distribution and demographic data.

			Melilla	Ceuta	Total
		<i>N</i>	200	50	250
		%	(80%)	(20%)	(100.0%)
Sex	Male	<i>N</i>	159	50	209
		%	(63.6%)	(50%)	(83.6%)
	Female	<i>N</i>	41	-	41
		%	(16.4%)	(0%)	(16.4%)

2.2. Measures

The personal learning environments questionnaire (PLE) constituted 40 questions which target the concepts of self-concept, management and planning of PLE, use of communication tools, and social skills. This tool was developed based on literature contributions by Bandura [23], Bryman [24], and Castañeda and Adell [25]; the academic auto-efficiency scale (ACAES) was developed by various authors [15,22,26–32]. These works relate learning processes with student aptitude mainly by using educational models, self-regulation processes, and styles of thought.

Following the consideration and evaluation of experts, the present study proceeded to the validation and conception of dimensions. When evaluating instruments in an educational study, the inclusion of experts is somewhat habitual as an essential and basic aspect of the Delphi method [33], which was widely used in multiple research studies [34,35].

In agreement with that proposed in the work carried out by Pozo, Gutiérrez, and Rodríguez [36], two groups were formed with the purpose of validating the instrument.

To this end, one group was designated as the coordinating group and the other as the expert panel. The first of these was composed of members of the research team who were characterized by a deep knowledge of the technique, who were actively researching the topic (graduates in Primary Education with a mention in Therapeutic Pedagogy, and graduates in Pedagogy), and who showed a great ease of inter-communication [37]. The second group (expert panel) was constructed attending to various criteria [38]. These included the relationship of the expert with the topic of interest and their personal qualities, such as their experience and professional expertise. Based on these criteria, the selected expert group was made up of researchers and university professors of recognized prestige in the field of knowledge of concern in the present study. The adequate number of experts is suggested to range between seven and 30. The present study included 10 expert participants, with all of these being university teachers with the title of Doctor and with a degree in Pedagogy, Psychopedagogy, and Teacher of Primary Education (33.3% being male and 66.7% being female). Experts had a mean experience of 11.44 years teaching in higher education.

Below, we describe the development of the methodological approach which was structured according to three phases: preliminary, exploratory, and final.

In the preliminary phase, the coordinating group set out the research problem, set in motion the process of expert selection (with consent for participation), interpreted preliminary results, and made the adjustments and corrections deemed to be appropriate.

In the exploratory phase, development of the final version of the questionnaire in its experimental adaptation took place. The first version was submitted to a round of analysis and discussion by members of the coordinating group. The group made the necessary adjustments and corrections

according to the recommendations of the majority reached through consensus. In the second phase, we proceeded to the validation of the instrument using qualitative and quantitative criteria determined by the experts. The experts were invited to participate in the questionnaire via email. This email included a redaction of a short introduction on its first page which explained the topic of investigation, together with a registration form which invited experts to provide their personal details. Furthermore, the objectives of the questionnaire were explained alongside how to complete the instrument, and finally the questionnaire was provided for validation. This presented a Likert type scale with three options (high, medium, and low). Experts were requested to respond within 30 days. During this month, a follow-up was conducted, completion of the scales was captured, and the information was analyzed by the group coordinator.

In the final phase, the definitive version of the questionnaire was finalized for its subsequent use with 250 MENA aged between 13 and 17 years, where 206 (83.6%) participants were male and the remaining 41 (16.4%) were female.

2.3. Procedure and Data Analysis

Once the limitations of the questionnaires and instruments found on the PLE were analyzed, it was decided to follow and adapt the PLE questionnaire and social integration of the MENA from the instrument proposed by Olmedo and Expósito [29], which was developed using a university population. Development of the instrument was based on the sections proposed by Ramos, Giménez, Lapaz, and Muñoz [39], amongst which emphasis was placed on brevity (few items), simplicity (with respect to its application), and using an understandable vocabulary adapted to the MENA population and their characteristics.

The questionnaire was constructed and elaborated from the contributions to psychological evaluation proposed by Cronbach [40]. Content was determined using the personal opinions of experts and a literature review [41]. Following the recommendations made, it was decided to use closed questions and provide six response options.

The group coordinator produced a first experimental version which eliminated some items and dimensions found to induce mistakes resulting in a degree of complexity with regard to overall comprehension of the questionnaire. Development was based on a set of items that came from different tests and questionnaires related to learning environments, communication skills, and social and digital tools for the learning process.

Each question was developed to be responded to within the following parameters: little, moderately, quite a lot, a lot, do not know/no response. Each item was then read and classified according to the following dimensions: self-concept of the learning process (SLP), planning and management of learning (PML), use of resources and tools (URT), and communication and social interaction (CSI). Decisions were made based on rational criteria and considering suitability of the questionnaire, resulting in a total of 40 items being selected. These questions had different origins, with some being obtained verbatim from the instrument of origin, while others were adapted and reformulated, and others were redacted specifically for this questionnaire. The questions were distributed alternately between the dimensions, and response options were numbered between 1 and 6.

In order to establish validity, it was first required to define content validity [42]. In order to obtain invaluable levels of content validity, an expert panel was employed alongside an initial pilot study in order to understand the comprehension indices. The experts took charge of evaluating the preliminary information and the questions, and they conducted an overall evaluation of each question in relation to the level of comprehension and suitability of the wording.

Descriptive statistics and their discrimination indices were established as indicators of the issues that were expected to arise when determining whether the data were likely to be true. To this end, reliability and validity were checked through the Cronbach coefficient and a semi-confirmatory factorial analysis [40,43]. The statistical programs SPSS 24.0 and FACTOR Analysis 9.3.1 were used to conduct these tests.

A pilot study was conducted to check validity. In this study, the instrument was distributed to 240 unaccompanied foreign minors (duration of 30 to 60 min) in order to establish the level of comprehension from a qualitative perspective, whilst taking note of doubts and suggestions.

In the development of the present study, the questionnaires were administered out of hours to not interfere with the centers' planned timetable. Once agreement was secured from the director of the center and the area of minors, questionnaires were administered in a group setting to very small groups of MENA in order to facilitate better comprehension. Monitors and social educators were present to provide support and facilitate understanding of questions. As participants were minors and receiving a form of foster care, legal permissions were acquired from the administration and the area of minors of the reception centers. It was guaranteed that all information collected would be used only for the purpose of scientific research and that anonymity of participants would be preserved. Participants were not informed of the purpose of the study in order to avoid insincere responses being given and to reduce as much as possible the effects of social desirability.

For the purpose of data analysis, content analysis was employed that analyzed the qualitative questions. On the other hand, quantitative data were analyzed according to descriptive statistics and estimations of internal consistency, produced using SPSS 24.0, as mentioned previously. Semi-confirmatory factorial analysis was conducted using FACTOR Analysis 9.3.1.

3. Results

With regard to the results relating to content validity of the instrument, the data obtained were submitted to content analysis with the aim of obtaining rubrics and evidence relating to concept, cultural, and linguistic validity of the PLE questionnaire and social integration of the MENA. Qualitative contributions were completed with quantitative contributions given by the experts in response to each item. Integration of the contributions made by both groups constituted two independent elements and, in this way, guaranteed adequacy of the instrument.

Of the final 40 items that formed the questionnaire, 30 of them did not require any modifications, as expert ratings were found to be close to a score of 3 and none of the experts proposed an alternative. The remaining 10 which had scores around 2 were modified following contributions and opinions made by the expert group, and the final formulation was agreed upon in consort with the coordinating group.

Firstly, SPSS 24.0 and FACTOR Analysis 9.3.1 were employed for the exploratory factorial structure, according to the guidelines of Schmider, Ziegler, Danay, Beyer, and Bühner [44]. No items were removed as no values higher than 2.0 were produced in the dispersion tests (asymmetry and kurtosis), as can be seen in the estimations of descriptive values presented in Table 2.

Once the program FACTOR Analysis was accessed as proposed by Lorenzo-Seva and Ferrando [45], with the method of extraction of main axes and oblimin rotation, four-factor rotation was conducted, with the following Bartlett statistics being obtained: 4418.7 ($df = 780$; $p = 0.000010$). As for the values obtained in the KMO (Kaiser–Meyer–Olkin) test, the acquired value of 0.814 reflects acceptable adjustment, suggesting that the data can be submitted to factorial analysis. This provides an index that determines sampling adequacy and whether the proportion of variance among variables measured from a population might share a common variance.

Through this, it was found that 44% of total variance can be explained through four factors; the GFI (goodness-of-fit index) was 0.95 and the RMSR (Root Mean Square Residual) was 0.055, with these values indicating good adjustment of the items.

Table 2. Descriptive statistics for items in the Personal Learning Environments (PLE) questionnaire.

	Media	DS	Variance	Asymmetry	kurtosis	Range
V01	2.89	1.603	2.571	0.148	−1.510	4
V02	3.16	1.221	1.492	0.077	−0.955	4
V03	3.11	1.215	1.476	−0.089	−0.727	4
V04	3.45	1.464	2.144	−0.454	−1.067	5
V05	3.26	1.527	2.334	−0.133	−1.247	5
V06	2.76	1.379	1.902	0.087	−1.188	5
V07	3.41	1.446	2.091	−0.201	−1.241	5
V08	2.64	1.485	2.206	0.451	−1.022	5
V09	4.09	1.313	1.726	−1.079	−.030	5
V10	3.03	1.444	2.087	0.137	−1.178	5
V11	2.60	1.433	2.056	0.374	−1.124	5
V12	3.26	1.467	2.153	−0.143	−1.220	5
V13	2.50	1.271	1.616	0.284	−0.956	4
V14	2.93	1.539	2.369	0.235	−1.218	5
V15	3.35	1.551	2.407	−0.252	−1.291	5
V16	2.73	1.327	1.761	0.277	−1.005	4
V17	3.02	1.454	2.116	−0.019	−1.318	4
V18	3.40	1.513	2.289	−0.428	−1.261	5
V19	3.76	1.342	1.801	−0.735	−0.717	4
V20	3.67	1.410	1.988	−0.407	−0.941	5
V21	2.83	1.519	2.309	0.218	−1.287	5
V22	3.28	1.353	1.833	−0.099	−1.121	5
V23	3.74	1.347	1.816	−0.589	−0.957	5
V24	4.08	1.269	1.611	−1.133	0.313	5
V25	3.94	1.278	1.634	−0.844	−0.285	5
V26	3.39	1.276	1.629	−0.008	−1.011	5
V27	3.87	1.112	1.237	−0.416	−0.536	5
V28	3.53	1.439	2.074	−0.288	−1.111	5
V29	3.80	1.250	1.564	−0.568	−0.537	5
V30	3.04	1.549	2.400	0.005	−1.337	5
V31	3.79	1.276	1.630	−0.624	−0.639	5
V32	3.46	1.335	1.784	−0.274	−1.071	5
V33	3.85	1.212	1.471	−0.604	−0.862	4
V34	4.07	1.198	1.437	−1.091	0.301	5
V35	3.57	1.381	1.909	−0.479	−0.984	5
V36	3.75	1.366	1.866	−0.716	−0.748	5
V37	3.38	1.321	1.746	0.081	−1.186	5
V38	3.26	1.562	2.440	−0.286	−1.379	5
V39	3.36	1.564	2.448	−0.264	−1.334	5
V40	3.85	1.276	1.629	−0.666	−0.656	5

As shown in Table 3, the indicator V26 was suppressed, as loading on two factors was shown to differ by less than 0.100, which is an indication of a potential lack of understanding of the item and, thus, the need for its reformulation. The final scale was found to be composed of four factors. The first of these was formed by 15 variables that corresponded to the first dimension; 10 variables were related to the second dimension; the third factor combined eight variables that corresponded to the third dimension; finally, the fourth factor, which constituted six variables, corresponded to the fourth dimension.

Table 3. Rotated factor matrix.

Variables	Rotated Factorial Matrix				Rotated Factorial Matrix (Omitted Charges Lower than 0.300)			
	F1	F2	F3	F4	F1	F2	F3	F4
V01	0.068	−0.041	0.603	0.073			0.603	
V02	−0.077	0.522	0.252	−0.127		0.522		
V03	−0.136	0.605	0.374	−0.057		0.605		
V04	0.025	0.508	−0.081	0.148		0.508		
V05	0.061	0.743	0.016	−0.056		0.743		
V06	−0.264	0.232	0.541	−0.242			0.541	
V07	−0.104	0.552	0.152	0.131		0.552		
V08	−0.044	0.254	0.312	0.284			0.312	
V09	0.414	−0.085	0.078	0.051	00.414.414			
V10	−0.120	0.018	0.590	0.132			0.590	
V11	−0.070	0.089	0.596	−0.027			0.596	
V12	−0.044	0.112	0.117	0.512				0.512
V13	−0.107	0.377	0.261	0.069		0.377		
V14	−0.012	0.302	0.148	0.288		0.302		
V15	0.410	−0.220	0.212	0.006	0.410			
V16	0.117	−0.013	0.393	0.182			0.393	
V17	0.371	0.354	0.591	−0.231			−0.591	
V18	0.507	−0.193	0.2110	−0.349	0.507			
V19	0.658	0.027	−0.144	−0.043	0.658			
V20	0.707	0.184	−0.228	−0.296	0.707			
V21	−0.012	−0.121	0.317	0.475				0.475
V22	0.377	0.049	0.145	0.194	0.377			
V23	0.497	0.069	−0.085	0.215	0.497			
V24	0.588	−0.096	0.031	0.081	0.588			
V25	0.099	−0.012	−0.016	0.486				0.486
V26	0.013	0.283	0.190	−0.033				
V27	0.417	0.200	0.255	0.286	0.417			
V28	0.065	0.045	−0.082	0.643				0.643
V29	0.513	−0.187	−0.087	0.356	0.513			
V30	0.165	0.093	0.112	0.478				0.478
V31	−0.027	0.072	0.312	0.470				0.470
V32	0.580	−0.064	0.067	−0.251	0.580			
V33	0.633	−0.212	−0.094	0.160	0.633			
V34	0.656	0.017	−0.106	−0.155	0.656			
V35	0.129	0.689	0.025	−0.041		0.689		
V36	0.514	0.372	0.082	−0.325	0.514			
V37	0.353	0.475	−0.002	−0.040		0.475		
V38	0.300	0.084	0.604	−0.076			0.604	
V39	0.140	0.641	0.137	−0.026		0.641		
V40	0.476	0.174	−0.041	0.266	0.476			

Next, the reliability coefficient of the questionnaire was found to be 0.897, reflecting good fit of the observations to the empirical data. Following suppression of variable 26, values of 0.826 for factor 1, 0.854 for factor 2, 0.701 for factor 3, and 0.793 for factor 4 were obtained. The first factor is formed from the variables 09, 15, 18, 19, 20, 22, 23, 24, 27, 29, 32, 33, 34, 36, and 40, factor 2 is formed from the variables 02, 03, 04, 05, 07, 13, 14, 35, 37, and 39, factor 3 is formed from the variables 01, 06, 08, 10, 11, 16, 17, and 38, and factor 4 is formed from the variables 12, 21, 25, 28, 30, and 31. Cronbach's alpha surpassed 0.700 in all cases, denoting suitability (Table 4).

Table 4. Factor loading of AF4 dimensions.

Variables	F1	F2	F3	F4
V09	0.414			
V15	0.410			
V18	0.507			
V19	0.658			
V20	0.707			
V22	0.377			
V23	0.497			
V24	0.588			
V27	0.417			
V29	0.513			
V32	0.580			
V33	0.633			
V34	0.656			
V36	0.514			
V40	0.476			
<hr/>				
V02		0.522		
V03		0.605		
V04		0.508		
V05		0.743		
V07		0.552		
V13		0.377		
V14		0.302		
V35		0.689		
V37		0.475		
V39		0.641		
<hr/>				
V01			0.603	
V06			0.541	
V08			0.312	
V10			0.590	
V11			0.596	
V16			0.393	
V17			0.591	
V38			0.604	
<hr/>				
V12				0.512
V21				0.475
V25				0.486
V28				0.643
V30				0.478
V31				0.470
<hr/>				
Alpha (0.897)	0.826	0.854	0.701	0.793

The reliability indices presented in Table 5 were all analyzed using Cronbach's alpha, obtaining adequate and satisfactory overall outcomes with values of $p > 0.700$. Following the application of the Pearson correlation coefficient, it can be seen that the majority of factors (80%) demonstrated a significant correlation ($p < 0.01$), with the highest value being that obtained for the association between the communication and social interaction dimension (CSI) and the planning and management of learning dimension (PML) (0.641), while lower correlation was also obtained for SLP (0.504 **) and URT (0.440 **).

Table 5. Correlation of factors.

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1. Self-concept of the learning process (SLP)	1			
Factor 2. Planning and management of learning (PML)	0.358 **	1		
Factor 3. Use of resources and tools (URT)	0.396 **	0.452 **	1	
Factor 4. Communication and social interaction (CSI)	0.504 **	0.641 **	0.440 **	1
Cronbach's alpha (questionnaire overall = 0.897)	0.826	0.854	0.701	0.793

** Correlation significant at the level of 0.01 (bilateral).

4. Discussion

The objective of the present study was to analyze and validate the content of the PLE instrument and social integration of MENA. To this end, adequate psychometric properties were found showing satisfactory fit, as well as valid reliability indices, as indicated by George and Mallery [46]. In summary, it can be noted that the results indicate the existence of four factors which form the instrument: self-concept, planning and management, use of resources and tools, and communication and social interaction. The ten experts who participated in the validation of the instrument fulfilled specific quality criteria and were highly experienced in the field of social pedagogy.

As previously indicated, the instrument showed adequate internal consistency at both a general level and with regard to each of its individual dimensions. This supports its application within any context involving MENA. In this way, the identified dimensions guide us toward a deeper knowledge of diverse aspects of the social integration of MENA groups and their personal learning environments as being crucial for inclusion of this population group. In this way, Pasquale [47] added that, throughout the educational process, the legal role of the tutor and that as an educator plays a crucial role in guarantying wellbeing and security of the young person in the community.

The framework developed through the present work shows resources and social skills to be greatly impaired within this group. At the same time, other studies demonstrated the importance of these dimensions, above all in university populations [22,48]. This is attributed to the greater requirements of MENA groups with regard to training and at a linguistic level [7], which can slow learning and enlightenment processes when using digital tools. In this way, the need to work for betterment of the training environment is highlighted, in order to improve communication processes, academic integration, and positive use of instruments for academics means within MENA. Furthermore, digital means such as methodological tools must be considered when studying the daily life of migrant young people, their social and emotional needs, and even concerns regarding their identity [49].

Although this questionnaire was analyzed by an expert panel, who grounded their considerations in scientific literature in order to deepen knowledge and analyze the denomination of dimensions based on previous studies [15,22,24,25,29,31], other studies, such as that carried out by Zurita-Ortega et al. [50], reported the need to base the dimensions and items of a questionnaire on information garnered from the existing literature in order to carry out their validation.

On the other hand, a high correlation was found between the communication and social interaction dimension and the planning and management of learning dimension. This relationship may be explained by the need of children to be listened to and understood by the community in which they interact, in order for them to achieve total self-regulation of learning. Similar studies, such as that of Del Sol-Flórez [51], indicated that, although transmigrant minors enjoy a set of skills, abilities, and capacities, these are often undervalued by other social actors, complicating the task of educational inclusion. Although of a lower strength, a correlation was also found between the dimension describing self-concept of the learning process and the dimension of communication and social interaction. From this, it can be inferred that the individual modality of being “unaccompanied” results in an under-developed social competence of the individual, for which the relational aspects of self-knowledge are found wanting when the individual is called upon to communicate. However, studies such as those of Jiménez [52] argued that we cannot understand individuals from such groups

without stopping to comprehend their inner self. Other authors added to this the importance of an inter-cultural education for the full socio-cultural integration and mental health of this population [53].

In the example of resources and tools, a correlation exists between communication and social interaction. This is to say, in relation to the three first factors (SLP, PGA, and URT), when communication and social interaction increase, self-concept also increases alongside the management and use of resources in learning processes. This indicates that the factor of social interaction is fundamental for the learning processes of MENA. Similarly, Wade, Sirriyeh, Kohli, and Simmonds [54] proposed the power of children to coexist with peers who come from the same culture and origin as a further factor which contributes to the improvement of levels of social wellbeing. Another factor that favorably impacts integration processes is the support that can be obtained from the rest of the immigrant community [55].

Regarding the existing correlation between planning and management of the PLE with the use of tools obtained in the present study, similar studies suggested that the manner in which resources are managed significantly influences the planning and enactment of the task [20]. Furthermore, Cabero-Almenora and Vazquez-Mártínez [56] added that good time management is necessary for the use of available academic tools to be cost-effective. From this, it can be interpreted that the good use of tools in the PLE requires good management, and, in the same way, planning of what we learn may be conditioned by the way in which the support tools found within the environment are used.

On the other hand, for the majority of MENA, one of the main difficulties is communication. Del Sol-Flórez [51] indicated that the commitment MENA put into learning Spanish is an important factor in inclusion. It should be understood that, if this factor is not well developed, then the other three factors will also be impaired. This can be seen in the findings connecting the questionnaire and its dimensions. The need, therefore, emerges to work toward the PLE factors (self-concept, management, and use of resources) through the improvement of the levels of communication and social interaction, keeping in mind that the social actors should learn to see this population within their social network whilst recognizing the double belonging of being both “from here” and from their country of origin [57]. This will provide the foundation of an inter-cultural education capable of achieving satisfactory levels of communication and integration.

5. Conclusions

Amongst the limitations identified in the present study was the difficulty of accessing the sample, although the time required to collect data was found to be reliable. From this, it is concluded that the results of the study and the validation of the PLE in MENA populations through the four identified dimensions is valid and reliable for enabling multi-dimensional analyses to be carried out. The aforementioned instrument can be used as a tool to assist professionals in the field to improve the personal learning environments of migrant minors and their subsequent social interaction.

Author Contributions: A.M.-M. and E.M.O.-M. conceived the hypothesis of this study. A.M.-M., E.M.O.-M., and M.d.C.O.-G. participated in data collection. E.M.O.-M. and M.T.-F. analyzed the data. All authors contributed to data interpretation of the statistical analysis. A.M.-M., M.d.C.O.-G., and M.T.-F. wrote the paper with significant input from A.M.-M. All authors read and approved the final manuscript.

Funding: This research was funded by I + D + I Project “Hybrid learning models for educational intervention with Unaccompanied Foreign Minors (MENAs)”. Effective tools for school and social integration “(EDU2017-88641-R)”.

Acknowledgments: This research was carried out within the project Hybrid learning models for educational intervention with unaccompanied foreign minors (MENA). Effective tools for school and social integration were subsidized by projects excellence and projects challenges state research agency, Call 2017.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. López, D.; García, E. Sistemas de protección emergentes: El caso de Tánger, ciudad fronteriza. *Pedagogía Social Revista Interuniversitaria* **2010**, *17*, 5770.

2. López-Ulla, J.M. Detención de menores extranjeros no acompañados en Europa: La necesidad de garantizar efectivamente los derechos ya reconocidos. *REMHU-Revista Interdisciplinar da Mobilidade Humana* **2014**, *42*, 63–80. [[CrossRef](#)]
3. Torrado, E. The necessity of reconceptualizing the migration of unaccompanied minors to the Canary Islands of Spain. *Estud. Transfront.* **2015**, *16*, 11–39.
4. Bueno, J.R.; Mestre, F.J. La protección de menores migrantes no acompañados. Un modelo de intervención social. *Revista Alternativas. Cuad. Trab. Soc.* **2006**, 155–170. [[CrossRef](#)]
5. Aparicio, L. Avances y desafíos en la regulación de los menores extranjeros no acompañados en España. *Revista Boliviana de Derecho* **2015**, *20*, 120–141.
6. Arnau-Sabatés, L.; Gilligan, R. What helps young care leavers to enter the world of work? Possible lessons learned from an exploratory study in Ireland and Catalonia. *Child Youth Serv. Rev.* **2015**, *53*, 185–191. [[CrossRef](#)]
7. Bravo, A.; Santos-González, I. Menores Extranjeros no Acompañados en España: Necesidades y modelos de intervención. *Psychosoc. Interv.* **2017**, *26*, 55–62. [[CrossRef](#)]
8. Chavez, L.; Menjivar, C. Children without Borders: A Mapping of the literature on Unaccompanied Migrant Children to the United States. *Migr. Int.* **2010**, *5*, 71–111.
9. Fekete, L. Detained: Foreign children in Europe. *Race Class* **2007**, *49*, 93–104. [[CrossRef](#)]
10. Giordano, C. Il Riconoscimento del Progetto Migratorio del minore e la valorizzazione della rete parentale nell'accoglienza dei minori stranieri non accompagnati. L'evoluzione della presa in carico nel comune di cremosa (2005–2011). *REMHU-Rev. Interdiscip. Mobilidade Hum.* **2014**, *42*, 97–112. [[CrossRef](#)]
11. Quiroga, V.; Alonso, A.; Soria, M. *Sueños de Bolsillo Los y Las Menores Migrantes no Acompañados/as en España*; Unicef: Madrid, Spain, 2010.
12. Baez, F.; Zagalaz, M.L.; Martínez, A.; Zurita, F. Aportaciones didácticas desde los temas transversales para la resolución de conflictos en el aula "Proyecto borramos las barreras". *Educ. Sport Health Phys. Act. ESHPA* **2018**, *2*, 162–176.
13. Bravo, A.; Del Valle, J.F. Crisis y revisión del acogimiento residencial: Su papel en la protección infantil. *Papeles del Psicólogo* **2009**, *30*, 42–52.
14. Del Valle, J.F.; Bravo, A. Current trends, figures and challenges in out of home child care: An international comparative analysis. *Psychosoc. Interv.* **1990**, *22*, 251–257. [[CrossRef](#)]
15. Marín, V.; Negre, F.; Pérez, A. Entornos y redes personales de aprendizaje (PLE-PLN) para el aprendizaje colaborativo. *Comunicar* **2014**, *21*, 35–43. [[CrossRef](#)]
16. Coll, C.; Engel, A. Introducción: Los Entornos de Aprendizaje en contextos de educación formal. *Cultura y Educación* **2014**, *26*, 617–630. [[CrossRef](#)]
17. Chaves, E. El entorno personal de aprendizaje (PLE) en la formación inicial de profesionales de la educación: Autorregulación del aprendizaje. Ph.D. Thesis, Universidad de Granada, Granada, Spain, 2015.
18. Chaves, E.; Trujillo, J.M.; López, J.A. Autorregulación del Aprendizaje en Entornos Personales de Aprendizaje en el Grado de Educación Primaria de la Universidad de Granada, España. *Formación Universitaria* **2015**, *8*, 63–76. [[CrossRef](#)]
19. Conde, M.A.; García, F.J. *Entornos Personales de Aprendizaje móviles y su Aplicación en la enseñanza de Ingeniería del Software Mobile Personal Learning Environments and How They are Applied in a Software Engineering Subject*; CINAIC: Madrid, Spain, 2013.
20. Calle-Alvarez, G.Y.; Sánchez-Castro, J.A. Influencia de los entornos personales de aprendizaje en las habilidades metacognitivas asociadas a la escritura digital. *Entramado* **2017**, *13*, 128–146. [[CrossRef](#)]
21. Cabero, J.; Llorentes, M.C. Entornos Personales de Aprendizaje (PLE): Valoración Educativa a través de Expertos. *Areté* **2015**, *1*, 7–19.
22. Prendes, M.P.; Castañeda, L.; Ovelar, R.; Carrera, X. Aprendizaje autorregulado. *Revista Electrónica de Tecnología Educativa* **2014**, *47*, 1–12.
23. Bandura, A. Perceived self-efficacy in the exercise of control over AIDS infection. *Eval. Progr. Plan.* **1990**, *13*, 9–17. [[CrossRef](#)]
24. Bryman, A. Integrating quantitative and qualitative research: How is it done? *Qual. Res.* **2006**, *6*, 97–113. [[CrossRef](#)]
25. Castañeda, L.; Adell, J. *Entornos Personales de Aprendizaje: Claves Para el Ecosistema Educativo en Red*; Marfil: Alcoy, Spain, 2013.

26. Galeguillos, P.; Olmedo, E. Autoeficacia académica y rendimiento escolar: Un estudio metodológico y correlacional en escolares. *ReiDoCrea* **2017**, *6*, 156–169.
27. Jonassen, D.H.; Land, S.M. *Theoretical Foundations of Learning Environments*; LEA: New Jersey, NJ, USA, 2000.
28. Olmedo-Moreno, E.; García, G. Designing an instrument to enrich the university students' PLEs. In Proceedings of the EDULEARN16 Proceedings, Barcelona, Spain, 4–6 July 2016.
29. Olmedo, E.; Expósito, J. Entornos personales de aprendizaje en los jóvenes de los smarthcities actuales y futuras. *Rev. Iberoamer-Icana Sist Cibern. Inform.* **2017**, *14*, 1–5.
30. Rosario, P.; Núñez, J.C.; González-Pienda, J.A.; Almeida, L.; Soares, S.; Rubio, M. El aprendizaje escolar examinado desde la perspectiva del "Modelo 3P" de Biggs. *Psicothema* **2005**, *17*, 20–30.
31. Santamaría, F. Evolución y desarrollo de un entorno personal de aprendizaje en la Universidad de León. *Digit. Educ. Rev.* **2010**, *18*, 48–60.
32. Siemens, G. Connectivism: A learning theory for the digital age. *Int. J. Instr. Technol. Distance Learn.* **2005**, *2*, 3–10.
33. Cabero, J.; Barroso, J. La utilización del juicio de experto para la evaluación de TIC: El coeficiente de competencias experta. *Bordón* **2013**, *65*, 25–38. [[CrossRef](#)]
34. Boza, A.; Méndez, J.M. Aprendizaje motivado en alumnos universitarios: Validación y resultados generales de una escala. *RIE* **2013**, *31*, 331–347. [[CrossRef](#)]
35. Mérida, R.; Serrano, A.; Tabernero, C. Diseño y validación de un cuestionario para la evaluación de la autoestima en la infancia. *RIE* **2015**, *33*, 149–162. [[CrossRef](#)]
36. Pozo, M.T.; Gutiérrez, J.; Rodríguez, C. El uso del método Delphi en la definición de los criterios para una formación de calidad en animación sociocultural y tiempo libre. *RIE* **2007**, *25*, 351–366.
37. Mira, J.E.; Padrón, A.L.; Andrés, S.M. Validación mediante el método Delphi de un cuestionario para conocer las experiencias e interés hacia las actividades acuáticas con especial atención al Windsurf. *Ágora Para la Educación Física y el Deporte* **2010**, *12*, 75–94.
38. Brill, J.M.; Bishop, M.J.; Walker, A.E. The competencies and characteristics required of an effective project manager: A web-based Delphi study. *Educ. Technol. Res. Dev.* **2006**, *54*, 115–140. [[CrossRef](#)]
39. Ramos, R.; Giménez, A.I.; Lapaz, E.; Muñoz, M.A. *Cuestionario de Evaluación de la Autoestima Para Educación Primaria (A-EP)*; TEA Ediciones: Madrid, Spain, 2006. [[CrossRef](#)]
40. Cronbach, L.J. *Essentials of Psychological Testing*; Harper and Row: New York, NY, USA, 1990.
41. Crocker, L.; Algina, J. *Introduction to Classical and Modern Theory*; Holt, Rinehart and Winston: New York, NY, USA, 1986.
42. Thomas, J.R.; Nelsson, J.K. *Métodos de Investigación en Actividad Física*; Paidotribo: Barcelona, Spain, 2007.
43. Muñoz, J. *Teoría Clásica de Los Tests*; Pirámide: Madrid, Spain, 1998.
44. Schmider, E.; Ziegler, M.; Danay, E.; Beyer, L.; Bühner, M. Is it really robust? Reinvestigating the robustness of ANOVA against violations of the normal distribution assumption. *Meythodology* **2010**, *6*, 147–151.
45. Lorenzo-Seva, U.; Ferrando, P.J. FACTOR: A computer program to fit the exploratory factor analysis model. *Behav. Res. Methods Instrum. Comput.* **2006**, *38*, 88–91. [[CrossRef](#)]
46. George, D.; Mallery, P. *Spss for Windows Step by Step: A Simple Guide and Reference*; Allyn&Bacon: Boston, MA, USA, 2003.
47. Pasquale, G. Unaccompanied foreign minors in Italy between normative and educational needs. *New Trends Issues Proc. Humanit. Soc. Sci.* **2018**, *5*, 90–106. [[CrossRef](#)]
48. Chaves, E. Investigación educativa sobre autogestión en los entornos personales de aprendizaje (PLE): Una revisión de la literatura. *EDMETIC* **2014**, *3*, 114–134. [[CrossRef](#)]
49. Mendoza, K.; Morgade, M. Unaccompanied Minors? Accompanied Foreign Minors, Families and New Technologies. *Int. Migr. Integr.* **2019**, *20*, 121–136. [[CrossRef](#)]
50. Zurita, F.; Castro, M.; Chacón, R.; Chacón, J.; Cofre, C.; Knox, E.; Muros, J. Analysis of the Psychometric Properties os Perceived Motivational Climate in Sport Questionnaire and its Relationship to Physical Activity and Gender Using Structural Equation Modelling. *Sustainability* **2018**, *10*, 632. [[CrossRef](#)]
51. Del Sol-Flórez, H. Una aproximación a la intervención educativa con menores migrantes no acompañados en España: Paradojas de la inclusión social. *Avaliacao Campinas Sorocaba* **2012**, *17*, 137–153. [[CrossRef](#)]
52. Jiménez, A. *Menores Migrantes Sin Referentes Familiares. Un Perspectiva Integral del Fenómeno*; Grupo Editorial Universitario: Granada, Spain, 2009.

53. Oppedal, B.; Idsoel, T. Conduct Problems and Depression among Unaccompanied Refugees: The Association with Pre-Migration Trauma and Acculturation. *Anales de Psicología* **2012**, *28*, 683–694. [[CrossRef](#)]
54. Wade, J.; Sirriyeh, A.; Kohli, R.; Simmonds, J. *Fostering Unaccompanied Asylum-Seeking Young People: Creating a Family Life across a World of Difference*; BAAF: London, UK, 2012.
55. Epelde, M. Nuevas estrategias para la integración social de los jóvenes migrantes no acompañados. *REINAD* **2017**, *13*, 57–85. [[CrossRef](#)]
56. Cabero-Almenara, J.; Vázquez-Martínez, A.I. Producción y evaluación de un Entorno Personal de Aprendizaje para la formación Universitaria: Análisis de una experiencia. *Cultura y Educación* **2014**, *26*, 631–659. [[CrossRef](#)]
57. Barranza, A. Validación del inventario de expectativas de autoeficacia académica en tres muestras secuenciales e independientes. *RIE* **2010**, *10*, 1–30.



© 2019 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).