Research Article

Measuring educational quality in the classroom: Validation of the Effective Teaching in Secondary Education Questionnaire

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This article presents the validation of the Effective Teaching in Secondary Education Questionnaire (ETSEQ). Schools require reliable and practical tools to understand the internal workings of their institution. The purpose of the questionnaire is to evaluate teaching practices based on the theoretical framework of teaching quality. The survey is based on the Productive Pedagogies framework. The final questionnaire includes six categories: Instructional Core, Relationship Teacher Student, Cooperative Methodology, Resources to Motivate Learning, In-depth Knowledge, and Acceptance of Diversity. The questionnaire demonstrates acceptable psychometric data in reliability and factor correlation, making it a suitable tool for use in secondary schools.

Keywords: Effective teaching, Educational quality, Secondary education, Teachers' perception, Questionnaire validation

1. Introduction

Educational quality is the main objective of educational systems around the world. The quality of school systems depends on different factors ranging from curriculum design to classroom planning (Scheerens, 2016). Effective teaching is an important factor and one of most difficult to measure for the implications in the judgement of teacher performance (Chapman et al., 2016). The field of study has undergone significant changes since Edmonds introduced the first indicators 50 years ago, components of the theoretical models that remain unchanged to this day: instructional leadership, clear and focused mission and values, safe and orderly environment, high expectations towards students, continuous assessment of students, time spent on homework at school, positive relations between school and families, and opportunity to learn and problem-solving and higher-order thinking skills (Johnson et al., 2018). Nowadays, the search for quality or effectiveness in teaching is a field of study that focuses on different aspects of teaching and learning processes, such as online teaching processes (Masry-Herzallah, 2022), teachers' communication and relationships within the educational and professional environment (Brinia et al., 2022; Gouëdard et al., 2023), the suitability of instruments for measuring effectiveness criteria (Grützmacher et al., 2021), the use of digital technology in the classroom (Falloon, 2024), collective teacher effectiveness (Yada & Savolainen, 2023), socio-economic, cultural and contextual factors that may affect academic performance (Eugene, 2020), the characteristics of effective schools (Ergin et al., 2021), among other fields of study. This study examines teachers' perceptions can indicate teaching quality factors in the classroom (Fernández-García et al., 2022; Hunkins et al., 2022; Inda-Caro, et al., 2019; Kokkinou & Kyriakides, 2022; Marzano & Calvani, 2020; Uslu & Çelik, 2021).

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Indicators of teacher performance may be understood as a kind of technology of control and surveillance (Elliot, 2012) especially from the perspective of new public management or new accountability, the dominant neoliberal paradigm (Gördel & Huber, 2023; Hall, 2023; Hall et al.,2015) that has led to educational reforms with the enactment of the Organic Law for the Improvement of Education Quality and the Organic Law modifying the Organic Law on Education in Spain (Parcerisa, 2016), Europe (Atanasoska, 2023; Krejsler & Moos, 2023), United States (Frank & Meredith, 2019), Latin America (Leiva & Pasqual, 2023), South and Sub-Saharan Africa (Mpungose & Ngwenya, 2018; Verger et al., 2018), or Asia (Gupta, 2018). According to new public management, Preston et al. (2016) identify systematic performance accountability as an essential component of effective High Schools understood as constant feedback to teachers for improvement in the performance of their duties and responsibilities. Implementing an accountability model can lead to long-term improvements in academic results (Hanushek & Raymond, 2005) in low and middle socioeconomic contexts (Anand et al., 2023). Neo-liberal discourse in school centers results in the development of practices in line with market values (Castillo, 2020) which generate inequalities that negatively affect students from lower socio-economic and cultural backgrounds (Rodríguez-Martínez et al., 2022). However, various interpretations of the application of mercantilist principles may be perceived by school staff (Yang et al., 2022), including a form of teaching professionalism that can be used to create a counter-discourse that utilizes neoliberal technology to shape equitable, supportive, compensatory, and social justice-based school experiences (Wilkins et al., 2020).

Kim (2018) critiques this paradigm from the perspective of scientific management and social efficiency. She points out the dehumanisation of education by reducing the relationship between students and teachers to what can be observed and evaluated. Additionally, she highlights the lack of autonomy of teachers and schools due to the standardisation imposed from above and discusses the models used to evaluate standards and highlights because of the lack of attention given to democratic values (Luengo & Saura, 2013). Accountability paradigm focuses solely on achieving results that maintain and reproduce the system, rather than on the complex, plural and contingent teaching-learning process influenced by various factors that cannot be controlled by teachers or the management team (Okitsu & Edwards, 2017).

Productive Pedagogies framework provides a comprehensive range of categories to achieve high-quality classroom education processes by focusing on instructional core, the relationship between the teacher, student, and learning content (City et al., 2009; Elmore, 2010). The framework concentrates on developing high-level intellectual content, links school processes to everyday life, ensures participatory and inclusive processes in a supportive classroom climate, and celebrates diversity and the importance of emotions in the classroom (Allan, 2004), categories that are essential in addressing inequalities in deprived socioeconomic and cultural contexts. Productive pedagogies aim to improve educational practice as a means of promoting social justice. Schools and teachers have the potential to reduce disparities in their specific contexts through their work and collaboration with the wider educational community (Mills & Keddie, 2013). It is essential for the school community, including the whole school centre, teachers, students, and families, to have access to tools that enable them to stay informed about the activities taking place in the centres and to develop proposals for collective improvement.

The cited framework has been utilised in various research studies (Bature & Atweh, 2020, 2016; Espinosa et al., 2018; Forbes et al., 2019; González-Berruga, 2021; Mills & Goos, 2011). The validation of questionnaires for use in schools to improve the quality of education is a well-established field of study across various educational levels that has been developed in depth in recent years (Álvarez-Álvarez et al., 2022; Capinding, 2023; Cortes et al., 2021; Martínez-Gregorio & Oliver, 2022; Nayernia et al., 2022; Nwadinigwe et al., 2020; Sánchez-Tarazaga & Ferrández-Berrueco, 2022; Tuamsuk et al., 2023). This approach is important for creating tools that schools can use to generate valuable knowledge based on their specific needs and which enables the creation of horizontal education networks based on collaborative reflection and critique among teachers, students, and families to enhance the quality of educational processes, projects, practices, values, and school culture (Gatz & Akiva, 2024; Neeraja, 2024).

This article presents an initial stage of a study that aims to validate an accessible and useful survey entitled Effective Teaching in Secondary Education Questionnaire [ETSEQ] for secondary schools to measure the level of intention and achievement of the teaching practice in the classroom.

2. Methodology

2.1. Sample and Procedure

The sample consisted of 158 secondary teachers from 11 public High Schools in the region of Albacete in Castilla La Mancha, Spain. In the school year 2017/2018, the region has a total of 5460 teachers in public

schools. The sample is representative with a 90% confidence level and a margin of error of 7%. The age of experience ranged among 0 and 36. In terms of the socio-economic status of the neighbourhood where the school is located, 24.1% (n=38) of teachers worked in high-status schools, 22.8% (n=36) in medium-status schools, and 53.2% (n=84) in low-status schools. Considering the type of students they teach, 78.5% (n=124) were in regular groups, 19% (n=30) were in groups with children with disabilities, and 2.5% (n=4) were in mixed groups. Data were collected in person with the approval of the educational inspection of Albacete and the school board of each High School. The participation was anonymous, voluntary, and not rewarded.

2.2. Instrument

The ETSEQ is adapted from Productive Pedagogies framework (Hayes et al., 2006; Lingard et al., 2003; Mills et al., 2009). Initially, 51 items were developed by the principal researcher and author of the paper. Following López-de-Arana et al. (2020) and Aithal and Aithal (2020), the content underwent validation by a group of experts consisting of two PhD in Education and two secondary school teachers. The group of experts was related to the social, cultural, and educational specificities of the region. Secondary school teachers were working in public schools of the region. The relevance, clarity, and pertinence of the items were analysed by the two PhDs. Later, the clarity, relevance, and accuracy of the items were validated by secondary school teachers considering the context in which it is applied. Finally, the survey (see Table 1) includes four categories with 26 items measured through a Likert scale ranging between 1 and 5 in two dimensions: teacher Intention and Achievement. The final version was presented to a group of teachers from the management team of four schools to validate the content's relevance to the context. Adapting the questionnaire to the context and using a Likert scale without 'no opinion' options are important elements to achieve a quality questionnaire (Matas, 2018). Furthermore, the questionnaire has been tailored to meet the requirement of creating a reliable tool that can be utilised by educators at the centre to assess the standards of instruction and learning processes.

2.3. Statistical Analysis

The Kolmogorov-Smirnov test, with Lilliefors correction, indicates that the data for the intention and achievement scale is non-normal. Kendall's Tau-b (τ) is used with non-normal data to determine the correlation between items and categories within each dimension. A strong correlation, close to a value of 1, indicates integration between items and categories. It is important to note that correlation does not imply causation. Therefore, caution must be exercised when interpreting these results. Nonetheless, this data provides valuable insight into the integrity of the questionnaire.

Following the recommendations of Agbo (2014) and Hayes and Coutts (2020), reliability is measured using both Cronbach's alpha and McDonald's omega, both considered adequate when $\alpha \geq .70$ and $\omega \geq .70$ (Aithal & Aithal, 2020; Hayes & Coutts, 2020).

Confirmatory factor analysis [CFA] determines if the questionnaire measures what it is intended to measure by assessing if the items fit the theoretical categories. The CFA with the factorial index χ^2 is used due to its robustness to violations of normality when there are more than 100 observations (Rojas-Torres, 2020). Furthermore, the maximum likelihood component is utilised as it has been proven to be a reliable measure even when the data has a non-normal distribution (Li, 2016). The recommended fit criteria for assessing model fit are CFI (Comparative fit index), TLI (Tucker-Lewis's index), RMSEA (Root mean squared error of approximation), SRMR (Standardised root mean square residual) and chi-square (χ^2), considering the appropriate values are CFI $\geq .95$, TLI $\geq .90$, RMSEA $\leq .05$, SRMR $\geq .08$, $\chi^2 = p \geq .05$ (Jordan, 2021). ACI (Akaike information criterion) and BIC (Bayesian information criterion) was used to compare the models. Appropriate values indicate a variance between 0 and 2 for AIC and 0 and 6 for BIC (Cavanaugh & Neath, 2019; Neath & Cavanaugh, 2012). KMO (Kaiser-Mayer-Olikin) test for each item and Bartlett sphericity test indicate (χ^2=1615, gl=351, $p < .001$) that the variables are significantly correlated to perform the confirmatory analysis. To attain a model with an acceptable level of fit, we utilised exploratory factor analysis with the robust maximum likelihood procedure and promax rotation (Ledesma et al., 2019).

To perform the analysis, we used Jamovi 2.3.28.0 and IBM SPSS 25 Statistics for Mac.

Table 1
Effective Teaching in Secondary Education Questionnaire: Preliminary version

Intellectual Quality of the content [IQC]

    1. Interesting and motivating content
    2. Content outside the book is worked on
    3. In-depth understanding of content
    4. Group work improves collaboration
    5. Quality over quantity of content
    6. Project-based work
    7. Use of reasoning and reflection
    8. Linking content across subjects
    9. Relationship between subjects
    10. Prior learning is known
    11. Use of different resources
    12. Explanation of contents and student participation
    13. Use of ICTS to develop complex skills
    14. Dialogue and discussion is encouraged

Classroom Climate [CC]

    15. Good student-teacher relationship
    16. Respect for personal differences
    17. Behavioural norms accepted by all
    18. Attention to cognitive and emotional aspects

Recognition of and Response to Diversity [RRD]

    19. Different abilities and interests are considered
    20. Resources adapted to the pace of the students
    21. Teaching staff helps those who need it
    22. Attention to all students
    23. Paying attention to those who lag behind
    24. Recognise differences and assume rights

Contextualisation of learning

    25. Relating content to the lives of students
    26. Cooperative work for a sense of citizenship

Note. The items' content summarises the original.

3. Results

First, it is presented the descriptive statistics for the factors and dimensions (see Table 2). The mean of the intention dimension is higher than that of the achievement dimension.

The improvement of learning quality requires urgent attention to specific elements presented in collected data. The intention dimension suggests that teachers should incorporate group and project work into their lesson planning, foster a sense of citizenship in their students, and be mindful of the varying abilities and interests of their students. The achievement dimension shows that teachers. The achievement dimension indicates that teachers do not implement project-based work, neglect students who are falling behind, fail to attend to the needs of all students, and do not foster a sense of citizenship. Similarly, non-urgent intentions were observed, such as balanced planning between the quality and quantity of content, providing support for students in need, and fostering a classroom climate that respects differences, adheres to class rules, and maintains positive teacher-student relationships. And teachers' achievements related to intentions were observed, such as items related to maintaining a good classroom climate and supporting students in need, and those not related to teaching intentions such as using different resources and maintaining explanation as well as student participation in the classroom. Teachers' classroom achievements are sometimes unrelated to their planning, and occasionally they accomplish things that were not a focus of their planning.

The reliability and validity of the proposed theoretical model were analysed first. Cronbach alpha report good levels of reliability for Intention dimension items with α=.895 and factors IQC=.827 and RRD=.736, but not in CL=.449 and CC=.669. In Achievement dimension, we found good levels in all items, α = .904 and in IQC=.834, but not in CC=.692, RRD=.679, CL=.407. Similar good levels report McDonald's omega in

Table 2
Means [M], Standard Deviations [SD], Skewness (g1), Kurtosis (g2)

		Intention				Achievement			
		M	SD	g1	g2	M	SD	g1	g2
IQC	1	4.40	0.741	−1.85	7.15	3.51	0.843	−0.408	1.02
	2	4.35	0.697	−1.06	1.53	3.70	0.780	−0.144	−0.354
	3	4.50	0.616	−0.986	0.791	3.81	0.758	−0.111	0.496
	4	3.94	0.872	−0.519	−0.0859	3.35	0.846	−0.420	0.594
	5	4.55	0.593	−1.12	1.24	3.92	0.731	−0.267	−0.181
	6	3.30	1.14	−0.165	−0.736	2.77	1.04	0.194	−0.517
	7	4.31	0.659	−0.572	−0.039	3.49	0.780	0.021	−0.377
	8	4.11	0.877	−0.804	0.264	3.51	0.943	−0.222	−0.264
	9	4.50	0.637	−1.04	0.722	3.68	0.751	−0.029	−0.365
	10	4.38	0.665	−1.28	3.76	3.80	0.788	−0.651	1.12
	11	4.29	0.885	−1.27	1.52	3.84	0.888	−0.721	0.739
	12	4.42	0.621	−0.586	−0.575	3.82	0.747	0.243	−0.182
	13	4.25	0.867	−1.22	1.62	3.69	0.977	−0.754	0.881
	14	4.42	0.661	−0.712	−0.550	3.75	0.842	−0.282	−0.456
CC	15	4.59	0.566	−1.02	0.0464	4.06	0.660	−0.464	0.711
	16	4.77	0.479	−1.98	3.23	4.20	0.780	−0.535	−0.661
	17	4.56	0.624	−1-12	0.181	3.76	0.0840	−0.172	−0.592
	18	4.07	0.752	−0.482	−0.0752	3.53	0.819	−0.328	0.250
RRD	19	3.75	1.03	−0.842	0.339	3.34	0.936	−0.474	0.125
	20	4.22	0.754	−0.843	0.628	3.68	0.793	−0.146	−0.389
	21	4.55	0.645	−1.27	1.10	3.86	0.778	−0.246	−0.363
	22	4.04	0.713	−0.376	−0.0204	3.25	0.831	−0.170	0.382
	23	4.16	0.703	−0.457	−0.0868	3.27	0.827	−0.066	−0.101
	24	4.40	0.706	−0.973	0.496	3.54	0.803	−0.087	−0.051
CL	25	4.20	0.845	−1.50	4.14	3.44	0.878	−0.842	1.05
	26	3.81	0.994	−0.677	0.127	3.25	0.929	−0.077	−0.099

Note. IQC= Intellectual Quality of the Content; CC= Classroom Climate; RRD= Recognition and Response to Diversity; CL= Contextualisation of Learning.

Intention dimension with ω=.901 and IQC=.832 and RRD=.762, but not in CC=.694, RRD=.685, though is close to 0.7, and CL=.450, and Achievement dimension with ω=.908 and IQC=.841, CC= .721 factors, but not in RRD=.695 and CL=.407. Confirmatory factor analysis reports that the model proposed for Intention does not fit the data satisfactorily according to CFI=.737, TLI=.707, RMSEA=.0843, SRMR=.0785, chi-square: $\chi^2 = 571$, gl=269, $p < .001$; AIC=7871 and BIC=8119 should result in lower values.

   Considering the data obtained, theoretical model restructuring is sought from Intention dimension data. To perform this task, it has been conducted and exploratory factor analysis with the robust maximum likelihood procedure and ortogonal promax rotation. Screening is performed using 3, 4, 5, 6 and 7 factors. Table 3 shows that the model constructed with 7 factors is the best fitting one for the data.

Table 3
Exploratory factor analysis

Factors	RMSEA	TLI	Chi-square	BIC
3	.0633	.822	$\chi^2 = 409$, gl=250, $p<.001$	−855
4	.0545	.867	$\chi^2 = 334$, gl=227, $p<.001$	−813
5	.0453	.907	$\chi^2 = 272$, gl=205, $p=.001$	−764
6	.0353	.943	$\chi^2 = 221$, gl=184, $p=.032$	−709
7	.0278	.963	$\chi^2 = 185$, gl=164, $p=.126$	−644

Note. Extraction method: robust maximum likelihood with promax rotation.

   Table 4 displays the factor loadings and item locations by factor. Considering the new grouping of the items, we can refer to the factors in the next order: Instructional Core [IC], Relationship Teacher Student [RTS], Cooperative Methodology [CM], Resources to Motivate Learning [RML], In-depth Knowledge [IK], Acceptance of Diversity [AD] and Respect for Personal Differences [RPD].

Table 4
Factor loadings with 7 factors

	1	2	3	4	5	6	7
9	0.712						
7	0.602						
2	0.558						
8	0.474						
12	0.331						
5	0.323						
21		0.753					
15		0.682					
23		0.584					
14		0.444					
18		0.373					
26			0.941				
4			0.663				
6			0.438				
19			0.222				
13				1.047			
11				0.635			
1				0.257			
10					0.824		
3					0.519		
20					0.383		
22					0.276		
24						0.965	
17						0.438	
25						0.351	
16							0.956

Note. Extraction method: robust maximum likelihood with promax rotation.

Confirmatory factor analysis of 7 factors reports CFI=.837, TLI=.810, SRMR=.0749, RMSEA=.0691, chi-square: χ^2 = 489, gl=279, p < .001, AIC=8066 and BIC=8366. Considering the presented model and the fact that factor 7 consists of only one item, we have removed factor 7. Item 16 is now represented by item 24. Erasing the 7th factor, data reports better values with 6 factors in CFI=.851, TLI=.829, SRMR=.0744, RMSEA=.0664; chi-square with χ^2 = 441, gl=260, p < .001, AIC=7883 and BIC=8159 show similar data. In Table 5 displays the item and factor estimates for each factor.

Table 5
Factor and items estimation

Factor	Factors	Estimate	Item	Estimate
Factor 1	Factor 1	1.000[a]	2	0.336*
	Factor 2	0.694	9	0.409*
	Factor 3	0.619	7	0.358*
	Factor 4	0.566	8	0.475*
	Factor 5	0.790	12	0.345*
	Factor 6	0.609	5	0.267*
Factor 2	Factor 2	1.000[a]	21	0.432*
	Factor 3	0.608	15	0.391*
	Factor 4	0.398	23	0.451*
	Factor 5	0.742	14	0.390*
	Factor 6	0.669	18	0.461*
Factor 3	Factor 3	1.000[a]	6	0.647*
	Factor 4	0.599	26	0.806*
	Factor 5	0.660	4	0.677*
	Factor 6	0.395	19	0.221

Table 5 continued

Factor	Factors	Estimate	Item	Estimate
Factor 4	Factor 4	1.000[a]	1	0.349*
	Factor 5	0.565	11	0.755*
	Factor 6	0.380	13	0.713*
Factor 5	Factor 5	1.000[a]	20	0.482*
	Factor 6	0.688	10	0.384*
			3	0.268*
			22	0.351*
Factor 6	Factor 6	1.000[a]	24	0.574*
			17	0.429*
			25	0.514*

Note. *<.001, [a] fixed parameter.

Table 6 shows the final version of the Effective Teaching in Secondary Education Questionnaire. The categories have been renamed.

Table 6
Effective Teaching in Secondary Education Questionnaire: Final version

Factor 1: Instructional Core [IC]
2. Content outside the book is worked on
7. Use of reasoning and reflection
8. Linking content across subjects
9. Relationship between subjects
12. Explanation of contents and student participation
5. Quality over quantity of content

Factor 2: Relationship Teacher Student [RTS]
21. Teaching staff helps those who need it
15. Good student-teacher relationship
23. Paying attention to those who lag behind
14. Dialogue and discussion is encouraged
18. Attention to cognitive and emotional aspects

Factor 3: Cooperative Methodology [CM]
6. Project-based work
4. Group work improves collaboration
26. Cooperative work for a sense of citizenship
19. Different abilities and interests are considered

Factor 4: Resources to Motivate Learning [RML]
11. Use of different resources
13. Use of ICTs to develop complex skills
1. Interesting and motivating content

Factor 5: In-depth Knowledge [IK]
20. Resources adapted to the pace of the students
10. Prior learning is known
3. In-depth understanding of content
22. Attention to all students

Factor 6: Acceptance of Diversity [AD]
17. Behavioural norms accepted by all
24. Recognise differences and assume rights
25. Relating content to the lives of students

Cronbach's alpha results improved for Intention dimension with α=.893 and factors IC=.700, RTS=.772, CM=.655, RML=.749, IK=.624, AD=.722. Just as with McDonald's omega with ω=.899 and factors IC=.710, RTS=.779, CM=.708, RML=.774, IK=.646, AD=.755. In Achievement dimension, Cronbach's alpha indicates a low score for CM=.592, but not for the entire dimension with α=.902 and IC=.747, RTS=.799, RML=.647, IK=.618, AD=707; and McDonald's omega with ω=.906 and IC=.762, RTS=.801, CM=.624, RML=.698, IK=.632 AD=.727.

Table 7 and 8 shows a positive and significant correlation among the factors of the Intention and Achievement dimension.

Table 7
Correlation among Intention factors

		IC	RTS	CM	RML	IK	AD
IC	Kendall's Tau B	—					
	p-value	—					
RTS	Kendall's Tau B	0.412 ***	—				
	p-value	< .001	—				
CM	Kendall's Tau B	0.387 ***	0.378 ***	—			
	p-value	< .001	< .001	—			
RML	Kendall's Tau B	0.409 ***	0.331 ***	0.389 ***	—		
	p-value	< .001	< .001	< .001	—		
IK	Kendall's Tau B	0.448 ***	0.451 ***	0.398 ***	0.372 ***	—	
	p-value	< .001	< .001	< .001	< .001	—	
AD	Kendall's Tau B	0.417 ***	0.430 ***	0.339 ***	0.283 ***	0.416 ***	—
	p-value	< .001	< .001	< .001	< .001	< .001	—

*Note. * p < .05, ** p < .01, *** p < .001*

The factors of both dimensions are interrelated. This means that the presence of one factor of classroom teaching quality may lead to the appearance of another factor.

Table 8
Correlation among Achievement factors

		IC	RTS	CM	RML	IK	AD
IC	Kendall's Tau B	—					
	p-value	—					
RTS	Kendall's Tau B	0.453 ***	—				
	p-value	< .001	—				
CM	Kendall's Tau B	0.385 ***	0.395 ***	—			
	p-value	< .001	< .001	—			
RML	Kendall's Tau B	0.307 ***	0.282 ***	0.355 ***	—		
	p-value	< .001	< .001	< .001	—		
IK	Kendall's Tau B	0.416 ***	0.389 ***	0.384 ***	0.259 ***	—	
	p-value	< .001	< .001	< .001	< .001	—	
AD	Kendall's Tau B	0.442 ***	0.408 ***	0.283 ***	0.263 ***	0.374 ***	—
	p-value	< .001	< .001	< .001	< .001	< .001	—

*Note. * p < .05, ** p < .01, *** p < .001*

Table 9 shows the correlation between the Intention and Achievement dimensions is significant, except for the pairs RML1-IC2, RML1-RTS2, RML1-AD2, RML1-IK2 and IC1-AD2.

Table 9
Correlations among dimensions

		IC2	RTS2	CM2	RML2	IK2	AD2
AD1	Kendall's Tau B	0.194**	0.160**	0.237***	0.148*	0.181**	0.306***
	p-value	.001	.009	< .001	.017	.004	< .001
IK1	Kendall's Tau B	0.187**	0.212***	0.257***	0.245***	0.338***	0.154*
	p-value	.002	< .001	< .001	< .001	< .001	.012
RML1	Kendall's Tau B	0.106	0.06	0.239***	0.504***	0.09	0.093
	p-value	.081	.326	< .001	< .001	.146	.135
CM1	Kendall's Tau B	0.182**	0.201***	0.589***	0.273***	0.244***	0.119*
	p-value	.002	< .001	< .001	< .001	< .001	.047
RTS1	Kendall's Tau B	0.178**	0.400***	0.257***	0.174**	0.217***	0.162**
	p-value	.003	< .001	< .001	.004	< .001	.008
IC1	Kendall's Tau B	0.357***	0.144*	0.223***	0.220***	0.150*	0,106
	p-value	< .001	.015	< .001	< .001	.013	.078

*Note. * p < .05, ** p < .01, *** p < .001. 1=Intention, 2=Achievement.*

4. Discussion and Conclusions

The initial version of ETSEQ demonstrated sufficient correlation data among categories and items, but it was not aligned with the reliability data and the confirmatory factor analysis results that are considered acceptable in a preliminary study. Reliability values were very low in the factor about the contextualisation of teaching in Intention (α=.449, ω=.450) and Achievement (α=.407, ω=.450). A new questionnaire with different categories was necessary to be generated. The exploratory factor analysis with the robust maximum likelihood procedure and with promax rotation has generated a dependable questionnaire with interconnected categories. The obtained data are similar to those of Martínez-Gregorio and Oliver (2022) or Sánchez-Tarazaga and Ferrández-Berrueco (2022). Following Cortes et al. (2021), it was decided to exclude the item 16 based on the questionnaire's construction and the underlying theoretical model. The final questionnaire is supported by confirmatory factor analysis with 6 items. Reliability demonstrates acceptable data for all dimensions. The correlation indicates a relationship among the components of the theoretical model, but not among certain factors considering the Intention and Achievement dimension. Statistics should be used in conjunction with the theoretical model to create a questionnaire that is tailored to the context's requirements. The research suggests that exploratory factor analysis with the robust maximum likelihood procedure and with promax rotation was an adequate process for obtaining interrelated dimensions in questionnaires and a reliable data collection instrument.

The descriptive analysis on Intention and Achievement dimensions that teachers perceive their achievements as below their intentions in curriculum planning and sometimes unplanned achievements are reached while planned achievements may not be reached as clear as others. The questionnaire can identify areas that require urgent attention to improve teaching quality.

The research objective has been achieved as an accessible questionnaire has been generated for use by secondary school centres. The questionnaire presents acceptable psychometric data at an early stage of the development of the questionnaire and can be considered as an effective tool to measure teachers' level of intention and achievement.

One limitation of this study is the small sample size of teachers obtained. Considering the ETSEQ questionnaire is primarily intended for schools to self-evaluate and improve the quality of education, future research could be directed towards using ETSEQ with a larger population and generate possible modifications to the questionnaire taking into consideration the specificities of each context. To obtain richer and more in-depth data, it is recommended to use the questionnaire alongside other validated questionnaires or quantitative instruments in integrated action research projects.

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Ethical declaration: The submission does not require Ethics Committee approval, as the research project involved adult teachers. The questionnaire included a statement informing participants that their involvement in the research was entirely voluntary and that their responses would be kept anonymous. It was made clear that the data would only be used for academic purposes.

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