

## *Attitude to Authority and Digital Competences of Bulgarian Primary Teachers*

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### **Abstract**

The thesis of this study is based on the assumption that the authority of the teacher manifests as a specific status or professional role and should be internalized in his overall professional profile. The teacher's role-playing authority is defined “a formal authority” and is strongly influenced by the requirements of the educational environment and the specific professional competences of the teacher. The attitude of the teachers towards their own authority, which implements the set of professional roles and competences, is a prerequisite for the formation and manifestation of an adequate professional model, which directly influences the quality and culture of the educational environment. To explain the nature of the social manifestation and experience of the teacher's own authority in terms of his status-role model, the concept of liberalism - conservatism is used. The research is performed with two scales, which are separately developed sets of statements. The first scale – „Attitude to Authority” – is an adapted and integrative version of the established standardized „Attitude to Authority Scale“ (Ray, 1971) and GAIAS (Rigby, 1982). The second scale, “Digital Competence”, was developed as an integrative scale to explore teachers' attitudes towards digitalization of education and to study specific skills involved in digital competence. Research involves 202 Bulgarian Primary teachers. The results are analysed in three stages: Evaluation of the Scales internal consistency; Factor Analysis and Correlation Analyses. The general conclusion of the study calls into question the effective internalization of this key competence in the professional model of respondents.

Keywords: attitude to authority, digital competences, primary teachers, professional roles

## Introduction

According to social psychology, attitude is "an organized predisposition to respond in a favorable or unfavorable direction to a specific class of social objects" (Dzhonev, 1996; p. 213). It is "an unconscious form of stimulation of the psycho-behavioral activity of an individual, acquired in individual experience and is provoked by a certain type of situations" (Minchev, 2006; p. 101).

Attitudes combined the social and the psychological in the person and therefore they directly influence behavior as a functional component of the Self and an integral part of the individual's value system (Dzhonev, 1996; Minchev, 2006; Andreeva, 1983).

The importance of the study of attitudes is considered by a number of authors in the following main aspects:

- to be determining the specific feelings, appraisals and tendencies to approach / avoid of the person to focal objects (Scott, 1954).
- to understand and predict trends in the development of significant social trends such as prejudice, environmental protection, educational attainment, and public understanding of science (Allport, 1954; H Tajfel, 1981; Dunlap & Jones, 2002; Pampaka and all, 2012; Sturgis and all, 2010).
- to understand the mechanisms of formation and changing public opinion, and more generally their impact on important social problems, such as civic participation and participation in the cultural sphere of society as a whole (M. Elliott, Voas, & Park, 2014; Dinas, 2013; Zaller, 1987, 1992; Green, Preston, & Janmaat, 2006; Paterson, 2008).

Authority is also a complex concept studied both as a group (social) and personal (individual) phenomenon, strongly dependent on social relations and the situation in which it exists.

On personal level authority refers to the position of the person in a social system. It is a special type of social attitude that is based on a particular position (Piryov, 1975). This kind of authority is defined as „individual authority“ (Ivanov, 1995; Piryov, 1975; Ivanov, 1985; Shibusany, 1969, Reber, 1985, Fotev, 1987).

In a social system the authority legitimizes the right to power but does not identify with it. It is not a form of control but its basis, which is expressed as a right to exercise power (Ivanov, 1995). The authority is also named „social prestige and is the criterion for leadership effectiveness.

Authorities are individuals of high social prestige who are important to other people. Such personalities are attributed to qualities - knowledge, skills, abilities that are valuable to others. They have high expectations and are valued, respected, respected and recognized in smaller, larger communities or in society. (Ivanov, 1995).

The individual authority manifests in two basic forms: formal and psychological authority.

Some authors (J. Adams, A. Romney, G. Homans) consider informal authority is primary, able to explain the formal authority. Other are of the opinion that these are two independently existing constructs related to different social roles that integrate into the individual, forming its whole authority (Ivanov, 1995).

There is a thesis according to which formal authority is provided by the authority of the professional position. It forms around 65% impact on subordinates. Moral authority depends mainly on the moral qualities of the leader, and functional is determined by the professional competence business qualities and attitude to work of the leader, Moral and functional authority account for 45% of total authority of the person (Kriviradeva, 2018).

According to Max Weber, the social expression of authority is highly dependent on the current social paradigm. In defining the types of authority, Weber attributes the rational-legal

authority to increasingly bureaucratic and rationalized societies. This thesis, which is still valid today, constitutes formal authority as a meaningful individual construct, manifested at three levels: the social, the community and the intra-group. (Georgiev, 91, p. 102-103).

The attitude towards authority is defined as “support or opposition for the subordination of individual freedom and autonomy to the collective and its authority” (Duckitt & Bizumic, 2013, p. 843)

In this study, the term Authority is used in the context of education as a social system. This concept explains the social influence of educational institutions and teachers as their representatives, as well as the corresponding power, which legitimizes this influence. In the same context, attitudes toward authority represent attitudes toward power as positive or negative evaluations of control and sanctions applied by the education system and its institutions to its members.

The need to study attitudes to authority in education, and in particular to teachers, is emphasized by authors who traditionally explore attitudes toward authority, because recognizing the authority of educational institutions would greatly support the understanding of attitudes toward institutional authority in general. Rigby et al (1984, 1987), Dornbusch & Scott (1975), Dunbar & Taylor (1982), Gumbert et al (1981).

Competence is defined as a proven ability to use knowledge, skills and personalities / social skills in work or study situations, in professional and personal development (www. Eur-lex.europa.eu). Lifelong learning itself is understood as a continuous process of mastering competencies, which are conditionally divided into two groups: professional and key. Professional competence is a set of knowledge, skills and abilities that workers and scientists / researchers in a given field must possess (www.eur-lex.europa.eu).

With the Recommendation of the Council of the European Union of 22 May 2018, these key competencies have been updated, but without changing their number and understanding of them. There is a stronger emphasis on basic skills such as literacy in reading, foreign languages and basic digital skills and on transferable skills, with a special focus on entrepreneurship education, focusing on improving mathematics skills, natural sciences, technology and engineering (STEM), emphasizes the importance of education for democratic citizenship and values and expands the scope of digital competencies, including programming and cybersecurity (<https://www.mon.bg/bg/100770>).

## **Theoretical background of the study**

The main thesis of this study is that the authority of the teacher manifests as a specific status or professional role and should be internalized in his overall professional profile (Kaloyanova and Ivanova, 2010). The teacher's role-playing authority is viewed as “... the inherent essence of his legitimate authority, recognition of his right to make responsible decisions in situations of co-activity that are meaningful to the student” (Ivanov, 1995, p. 99). This type of authority is inherent “a formal authority” and is strongly influenced by the requirements of the educational environment (social aspect) and the specific professional competences of the teacher (individual aspect). The attitude of the teachers towards their own authority, which implements the set of professional roles and competences, is a prerequisite for the formation and manifestation of an adequate professional model, which directly influences the quality and culture of the educational environment.

The present study uses the concept of liberalism - conservatism, which is one of the leading modern approaches to classifying people's social beliefs (Jost, Federico, & Napier, 2009). This concept explains the nature of the social manifestation and experience of the teacher's own authority from the point of view of his status-role model, namely - as aimed at freedom,

shortening the distance and flexibility (liberal authority) or as centered in tradition, power and directive interactions (conservative authority).

In this study attitudes towards teachers own authority are examined in relation to one of the teacher's current professional competencies - the digital competence. The digital competence of the teacher is being considered as "... the ability to use ICT with a good pedagogical-didactic ICT understanding and to be aware of how this might impact the learning strategies and educational formation of pupils" (Krumsvik, 2007, p. 68).

The digital competence of teachers also includes knowledge and attitudes to using ICT, various softwares and on-line based information, with a critical attitude towards the quality of resources and information, as well as the activation of problem-solving skills ( Ilomäki et al., 2011; Krumsvik, 2011, 2012; Käck & Männikkö Barbutiu, 2012).

There are five basic skills considered as the basic structural components of digital competence: Information and data literacy, Communication and collaboration, Digital content creation, Safety and Problem Solving (Carretero, St. et al., p.11).

In this research, digital competence is studied not only in aspect of the five including basic skills, but also with regard to teachers' attitudes towards digitalization of education, since competence itself requires as a prerequisite the existence of such an attitude, on the one hand, and - attitudes toward professional role-playing authority are influenced precisely by specific attitudes toward particular competencies.

The theoretical model of the study is shown on Figure 1.

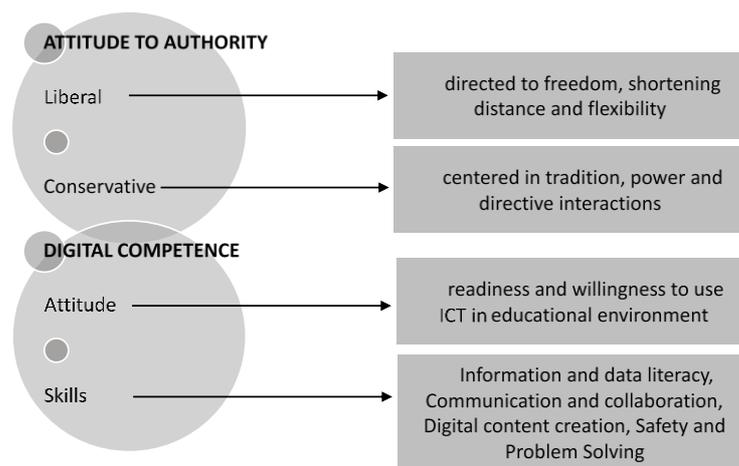


Figure 1: The theoretical model of the study

## Methods

The study is performed with two scales, which are separately developed sets of statements. The first scale – „Attitude to Authority“ is an adapted and integrative version of the established standardized „Attitude to Authority Scale“ (Ray, 1971) and GAIAS (Rigby, 1982).

The scale contains three sub scales. The sum of all items in the scale totals 24.

- Sub-Scale 1: “Leadership: executive vs. decision maker” includes items 1 to 8
- Sub-Scale 2: “Institutional Authority: delegation vs. force” includes items 9 to 16
- Sub-Scale 3: “Pedagogical Interaction: Freedom vs. Regulation” includes items 17 to 24

Each one Sub-Scale contains 8 items.

All items are scored from 4 to 1, as 4 (Strongly agree), 3 (Agree), 4 (Disagree), 1 (Strongly disagree). The sum of the scores is interpreted by 3 scales of referent values according to 3 different type of Authority – Liberal, Medium and Conservative (Tabl.1).

*Table 1: Referent Values of Authority Type*

Type of Authority	Leadership	Institutional Authority	Pedagogical Interaction	Total
Liberal	32 – 24	32 – 24	32 – 24	96 – 72
Medium	23 – 15	23 – 15	23 – 15	71 – 49
Conservative	14 – 8 and up	14 – 8 and up	14 – 8 and up	48 – 24 and up

The second scale, “Digital Competence”, is developed as a integrative scale to explore teachers' attitudes towards digitalization of education and to study specific skills involved in digital competence, combined into three criteria: Information and data literacy and Digital content creation; Communication and collaboration; Safety and Problem Solving.

The scale contains 4 subscales:

- Sub-scale 1: Attitudes towards digitalization of education - includes items 1 to 10
- Sub-Scale 2: Collecting and Arranging Information and Creating Educational Content (Information and Content) - includes items 11 to 20
- Sub-Scale 3: Communicating with Students, Colleagues and Parents (Communication) - includes items 21 to 25
- Sub-Scale 4: Safety and Problem Solving in an Educational Context (Safety and Problem Solving) - includes items 26 to 30

Analogically, the items are scored from 4 to 1, as 4 (Strongly agree), 3 (Agree), 4 (Disagree), 1 (Strongly disagree). The sum of the scores is interpreted by 4 scales of referent values according to 3 different levels– High, Average and Low (Tabl.2).

*Table 2: Referent Values of Digital Competence*

Level	Attitude to Digitalization	Information and Content	Communication	Security and Problem Solving	Total
High	40 – 30	40 – 30	20 – 15	20 – 15	120 – 90
Average	29 – 19	29 – 19	14 – 11	14 – 11	89 – 59
Low	20 – 10 and up	20 – 10 and up	10 – 5 and up	10 – 5 and up	60 – 50 and up

Research involve 202 primary teachers from Bulgarian educational system. 193 teachers are female, and 9 – mail. 1,5% are under 25 age; 7,9% - between 26-30 age; 36,6% - between 31-45 age; 30,7% - between 46-55 age and 23,3% - over 55 age. 68,8% work in schools in big towns, 24,3% - in small towns and 6,9% - in villages. Most of the respondents (51,5%) works in primary schools. 40,6% works in secondary schools and 7,9% of respondets works in elementary schools.

The results are analysed in three stages:

- Evaluation of the Scales internal consistency by the Cronbach Alpha Consistency Assessment procedure (Cronbach, 1988);
- Factor Analyse – KMO and Bartlett's Test and extraction of the main Factors;
- Correlation Analyses with Pearson linear correlation coefficient (r).

## Results and Discussion

### 1.1. Evaluation of the Scales internal consistency

Internal consistency of items is evaluated by the Cronbach Alpha Consistency Assessment procedure. Alpha Cronbach’s Values are shown below (Cronbach, 1988):

0,9 – 1,0	Excellent
0,8 – 0,9	Very good
0,7 – 0,8	Good for practical purposes
0,6 – 0,7	Modest
0,6 and down	Miserable

The results for both scales and their subscales are shown in a Table 3.

Table 3: Cronbach's Alpha of Scales and their Sub-scales

Scales	Sub Scales	K	$\alpha$	corr	$\alpha$
Attitude to Authority	Leadership	8	,114	,016	,555
	Institutional Authority	8	,264	,043	
	Pedagogical Interaction	8	,499	,111	
Digital Competence	Attitude to Digitalization	10	,847	,357	,824
	Information and Content	10	,677	,174	
	Communication	5	,625	,250	
	Security and Problem Solving	5	,427	,130	

In the Digital Competence scale the Cronbach's coefficient is very good - 0.824. It ranges from unacceptable to high values, with the lowest for the Security and Problem Solving subscale - 0.427 and the highest for the Digitalization Attitudes subscale - 0.847. It can be concluded that the surveyed teachers have a high degree of coherence of their opinions, especially regarding attitudes towards digitalization. In this subscale the most heavily embedded item is *I feel completely confident and trained to integrate information and communication technologies into the educational environment* – 0,565, and the least implied is *I have developed and maintain my own teaching blog / site* – 0,323. The average score is 86,65, which value falls within the average levels according to Table 1.

All items in the Communicaton subscale are low implied. In this scale, in fact, the most heavily embedded item *I participate in experience sharing groups with colleagues who use digital technology in their daily work* has a coefficient of only 0,500, and the least implied - *The digital students register is a convenient and integral part of my work and greatly facilitates parental feedback* – 0,236.

The average score on individual scales is respectively:

- Attitude to Digitalization – 30,84 (High);
- Information and Content – 26,72 (Average);
- Communication – 13,33 (Average);
- Security and Problem Solving – 15,76 (High).

It can be seen that the respondents demonstrate relatively moderate to high attitudes towards the digitalization of education. Although the Security and Problem Solving scale has high average levels, it is the scale with the lowest Cronbach's coefficient, and the least implied item belongs to this scale. This is the item *In the internet communication I demand the established "netiquette" should be observed* – 0,386

The Attitudes to Authority scale has a low consistency, which is on the border of the acceptable values of Cronbach's alpha – 0,555 (Table 3). The internal coherence of the individual subscales is unacceptable. The lowest levels of consistency are on the Leadership scale, although the least implied item *The teacher should not obey an order if it is obviously morally wrong* has a coefficient 0,360, and all 8 items show moderate adequacy on the scale - in the range from 0,528 for the item *A Teacher should always change his actions to ensure agreement and harmony in the educational environment* to 0,627 for the item *The teacher*

*should not demand silence and obedience in the classroom.* The average score of the respondents on the scale Attitudes towards authority is 64.22, which shows moderate attitudes.

The average score on individual scales is respectively:

- Leadership – 22,71 (Medium);
- Institutional Authority – 20,59 (Medium);
- Pedagogical Interaction – 20,92 (Medium).

Therefore, in the view of primary teachers, authority is legitimized on the border between liberalism and conservatism, but teachers have an unstable and often contradictory opinion about the individual manifestations of authority. They have very high attitudes towards digitalization, but in certain aspects of this competence, their positions are unstable. It should be emphasized that the position of primary teachers on the means and effectiveness of communication in the digital environment, as well as on electronic resources for pedagogical interaction, remains particularly unclear.

## 1.2. Factor Analyses – extraction of the main Factors

The Cronbach's alpha reliability assesment showed instability across the two subscales of the both scales The factor analysis aims to isolate only the main factors and show the subscales belonging to them. The second objective is that the both scales align their indicators to allow correlation analysis.

The latent structure of the Attitude to Authority scale indicates refraction in the second component (Figure 2). This means that it is acceptable to accept a two-component factor matrix. After statistical processing of the scale data by rotation of the component matrix, two main factors were formed (Table 4). The first factor covers the Leadership subscale and the Institutional authority subscale, and the second includes the Pedagogical interaction subscale. The overall reliability of the scale increased – the Kaiser-Mayer-Olkin coefficient was 0.586 (Table 5). His interpretation is similar to Cronbach's alpha. In this case, the authority scale is considered

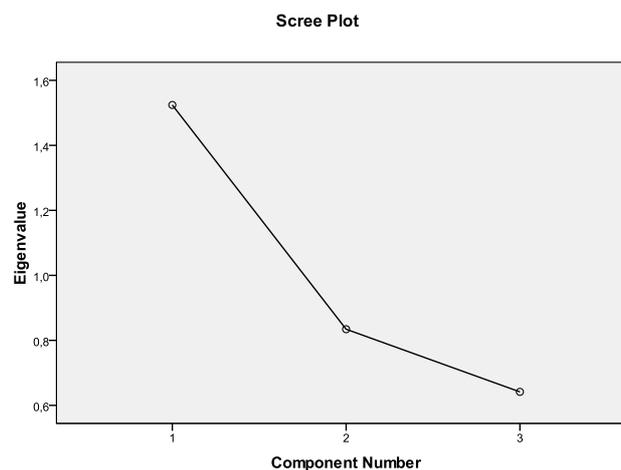


Figure 2: Latent structure of Attitude to Authority Scale

Table 4. Rotated Component Matrix<sup>a</sup> of Attitude to Authority Scale

	Component	
	1	2
scaleleader		,986
scaleinst	,780	
scaled	,848	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table 5: KMO and Bartlett's Test (Attitude to educational Authority Scale)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,586
Bartlett's Test of Sphericity	Approx. Chi-Square	40,563
	df	3
	Sig.	,000

The latent structure of the Digital Competence scale is uniform, without refractions (Figure 2). Two factors were also formed in this scale. In this case, however, one of the scales - Information and Content, can not be categorically related to any of the factors, although it is more heavily embedded in the first factor. It can be assumed that the first factor combines the subscales Attitudes towards digitalization, Information and content and communication, the second includes the subscale Information and content and Security and problem solving (Table 6).

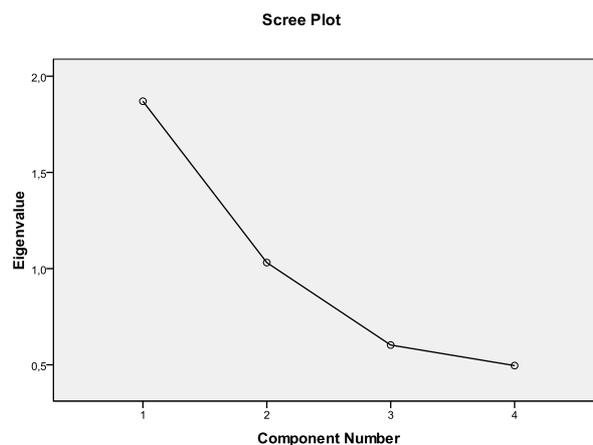


Figure 2: Latent structure of Digital Competence Scale

Table 6. Rotated Component Matrix of Digital Competence Scale

	Rotated Component Matrix <sup>a</sup>	
	Component	
	1	2
scaled1	,854	
scaled2	,634	,511
scaled3	,735	
scaled4		,938

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.  
 a. Rotation converged in 3 iterations.

Table 7: KMO and Bartlett's Test (Digital Competence Scale)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,605
Bartlett's Test of Sphericity	Approx. Chi-Square	109,562
	df	6
	Sig.	,000

Factor analysis allows to continue with correlation analysis under the following conditions:

- The Attitudes towards authority scale has two clearly identified factors, while the Digital Competence scale has a uniform latent structure;
- The subscales of the both scales refer to two factors, but in the Digital competence scale they are not clearly differentiated;
- The reliability coefficient of the both scales after the factor analysis is relatively equivalent and modest.

### 1.3. Correlation Analyse

Under the above conditions, correlation analysis is only possible if the both scales are characterized by a normal data distribution. The following histograms make it clear that the distribution in the both scales is relatively uniform and allows correlation to be derived using the Pearce coefficient (Figure 3).

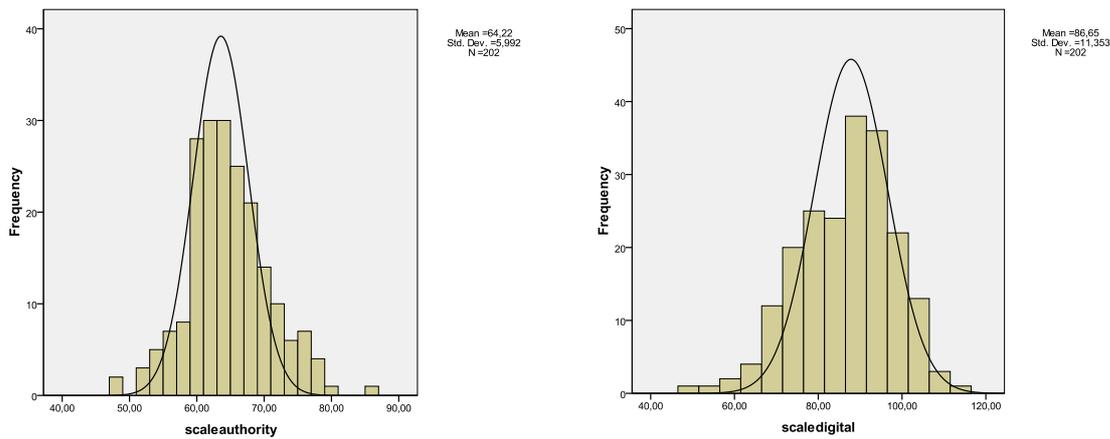


Figure 3: Data distribution in the main Scales

Table 8: Correlations between Attitude to Authority Scale and Digital Competence Scale

		scaleauthority	scaledigital
scaleauthority	Pearson Correlation	1	,255**
	Sig. (2-tailed)		,000
	N	202	202
scaledigital	Pearson Correlation	,255**	1
	Sig. (2-tailed)	,000	
	N	202	202

\*\* . Correlation is significant at the 0.01 level (2-tailed).

In this case, a correlation between the two scales could be clearly identified, ie. to determine the relationship between the attitudes towards authority and the digital competence of the respondents. The table shows that there is a positive correlation, though a weak correlation – 0.255. This suggests that the high values of digital competence will be mainly related to liberal authority.

Where such correlation exists, it should be determined how it is characterized For this purpose, the average values of respondents who showed high digital competence (between 90 and 120) will be compared with the average values of the same respondents on the Attitudes to Authority Scale (Tabl. 1, 2).

The average on the Digital Competence Scale is high with 87 respondents. Their average score is 96,72, ie. just above the lower limits of the high reference values. The average score of the same respondents on the Attitude to Authority Scale is 65,33 - a stable moderate value. The result shows that digital competence is well formed ( $x = 86,65$  при  $n=220$ ;  $x = 96,72$  при  $n=87$ ), while attitudes toward authority are almost relevant to values throughout the research sample ( $x = 64,21$  при  $n=220$ ;  $x = 65,33$  при  $n=87$ ).

After establishing the normality of distribution in the digital competence subscales, a correlation analysis was made between the different subscales in the both major scales.

Table 9: Correlations between Subscales in both Scales

		Correlations						
		scaleleader	scaleinst	scaledped	scaled1	scaled2	scaled3	scaled4
scaleleader	Pearson Correlation	1	,233**	,189**	,158*	-,026	,132	-,052
	Sig. (2-tailed)		,001	,007	,025	,714	,062	,462
	N	202	202	202	202	202	202	202
scaleinst	Pearson Correlation	,233**	1	,354**	,287**	,182**	,167*	,146*
	Sig. (2-tailed)	,001		,000	,000	,010	,017	,038
	N	202	202	202	202	202	202	202
scaledped	Pearson Correlation	,189**	,354**	1	,113	,155*	,010	,143*
	Sig. (2-tailed)	,007	,000		,108	,028	,887	,042
	N	202	202	202	202	202	202	202

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Correlation analysis shows the following correlations between the subscales in the both scales:

- Sub-scale Leadership correlates weakly with a sub-scale 1: attitudes towards digitalisation in education
  - The average value of the result in the sub-scale leadership is 22.71, ie. in moderate values of the authority type.
  - The average value of the result in the sub-scale attitudes towards digitalization is 30.84, ie. in the lower limit of the high reference values.

Given the established ratios, the conclusion can be that the attitudes towards digitalization are combined with a moderate manifestation of authoritative leadership.

- Sub-scale Institutional authority correlates with all subscales of the Digital Competence scale, the most pronounced being the correlation with Sub-scale 1: Attitudes towards digitalization in education
  - The average value of the result in the sub-scale Institutional authority is 20.59, ie. in moderate values of the authority type.
  - The average value of the result in the sub-scale Attitudes towards digitalization is 30.84, ie. in the lower limit of the high reference values.
  - The average value of the result in the sub-scale Information and Content is 26.72, ie. in with an average reference value.
  - The average value of the result in the sub-scale Communication is 13.33, ie. in with an average reference value.
  - The average value of the result in the sub scale Safety and Problem Solving is 15.75, ie. in the lower limit of the high reference values.

It can be generalized that maintaining a moderate institutional authority among teachers is significantly related to all aspects of their digital competence.

- Sub-scale Pedagogical interaction correlates weakly with two subscales: Subscale 2: Information and Content and Sub-scale 4: Safety and Problem Solving
  - The average value of the result in the sub-scale Pedagogical interaction is 20.92, ie. in moderate values of the authority type.

- The average value of the result in the sub-scale Information and Content is 26.72, ie. in with an average reference value.
- The average value of the result in the sub-scale Safety and Problem Solving is 15.75, ie. in the lower limit of the high reference values.

The characteristics of the highlighted ratio show that the manifestations of moderate authority in the pedagogical interaction of primary teachers are mainly related to moderate competencies for working with electronic information sources and development of electronic educational resources, as well as a high degree of security and problem solving skills.

## **Conclusion**

Authority for primary teachers is legitimized on the border between liberalism and conservatism. The individual manifestations of the authority of teachers are unstable and often contradictory. They are combined with high attitudes towards digitalization, but with an unclear position on the means and effectiveness of communication in a digital environment, as well as on electronic resources for pedagogical interaction.

For this reason, the manifestations of moderate authority in the pedagogical interaction of primary teachers are mainly related to moderate competencies for working with electronic information sources and development of electronic educational resources, as well as with a high degree of security and problem-solving skills.

As expected, the uniform latent structure of the Digital Competence scale determined the large number of correlations with one of the subscales of the Attitudes to Authority scale. In this case, they refer to the Institutional Authority subscale. Therefore, the nature of institutional authority as moderate between the liberalism and conservatism, are highly dependent on the digital competence of the teacher and especially on the attitudes towards digitalization and problem-solving skills.

Once again the tendency is ascertained that the teachers demonstrate a high degree of digital competence, which is combined with moderate, still tending (in some essential aspects) to conservative authority, calls into question the effective internalization of this key competence in the professional model of respondents.

The findings from previous studies confirm that teachers understand and are motivated to expand their competencies, but still experience a lack of personal resources to delegate rights to other educational subjects and to abandon traditional instructional-directive approaches to interacting in the educational environment.

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