

<http://revped.ise.ro>

Print ISSN 0034-8678; Online ISSN: 2559 - 639X

PATTERNS IN THE USE OF DIGITAL TECHNOLOGY AMONG SCHOOL COUNSELLORS IN ROMANIA

Modele în utilizarea tehnologiei digitale în rândul consilierilor școlari din România

Mihai IACOB, Octavia BORȘ

Journal of Pedagogy, 2022 (2), 9 - 27

<https://doi.org/10.26755/RevPed/2022.2/9>

The online version of this article can be found at: <https://revped.ise.ro/en/category/2022/>



This work is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.
To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-sa/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.

Published by:

**CENTRUL NAȚIONAL DE POLITICI ȘI EVALUARE ÎN EDUCAȚIE
UNITATEA DE CERCETARE ÎN EDUCAȚIE**

<http://www.ise.ro/>

<https://rocnee.eu/>

Further information about *Revista de Pedagogie* – *Journal of Pedagogy* can be found at:

Editorial Policy: <http://revped.ise.ro/editorial-policy/>

Author Guidelines: <http://revped.ise.ro/en/author-guidelines/>

PATTERNS IN THE USE OF DIGITAL TECHNOLOGY AMONG SCHOOL COUNSELLORS IN ROMANIA

Mihai Iacob*
Octavia Bors**

University of Bucharest,
Faculty of Psychology and Educational Sciences,
Bucharest, Romania

mihai.iacob@drd.unibuc.ro, octavia-mihaela.bors@fpse.unibuc.ro

Abstract

Digital technology has become ubiquitous in the practice of school counselling in Romania, but currently there is little evidence and critical reflection on how it is employed in daily activities. The aim of the study was to gather information regarding the practices and resources associated with school counselling, especially regarding the use of digital technology. A total of 528 valid answers were collected from school counsellors across Romania's 42 administrative divisions, using an online questionnaire. A cluster analysis was used to identify patterns of use of digital technology in professional practices, with three groups emerging: a) all-around use of digital technology, b) less frequent use of digital technology and c) regular use for specific professional tasks. Several socio-demographic factors were used to attempt to predict cluster membership. We discuss the implications of this exploratory study and chart potential avenues of action and research.

Keywords: career counselling and guidance, digital technology, school counselling.

Rezumat

Tehnologia digitală este prezentă în toate aspectele practicilor de consiliere școlară din România, dar, în prezent, dispunem de puține dovezi și exerciții de

* PhD Candidate, Faculty of Psychology and Educational Sciences, University of Bucharest, Bucharest, Romania.

** PhD, Faculty of Psychology and Educational Sciences, University of Bucharest, Bucharest, Romania.

reflecție critică privind modul în care ea este utilizată în activitățile de zi cu zi. Scopul studiului a fost să strângă informații privind practicile și resursele asociate cu consilierea școlară, cu accent pe utilizarea tehnologiei digitale. Prin intermediul unui chestionar online, au fost colectate 528 de răspunsuri valide de la consilieri din cele 42 de unități administrative ale României. Am folosit analiza de cluster pentru a identifica patternuri de utilizare a tehnologiei digitale, din care au rezultat trei grupuri: a) utilizare comprehensivă a tehnologiei digitale; b) utilizare mai puțin frecventă a tehnologiei digitale și c) utilizare regulată pentru anumite sarcini profesionale. O serie de caracteristici socio-demografice au fost folosite pentru a prezice apartenența la grupuri. Articolul discută implicațiile acestui studiu explorativ și identifică potențiale acțiuni și direcții de cercetare.

Cuvinte-cheie: *consiliere școlară, consiliere și orientare în carieră, tehnologie digitală.*

Introduction

The integration of digital technology within lifelong guidance has seen a growing trend in recent years (Kettunen, Vuorinen & Ruusuvirta, 2016) as a reaction to the technological changes affecting society. Digital technology has had a profound impact on how careers services are designed and delivered (Iacob, 2020), both because of the expectation of clients (Watts, 1996), as well as the pressure from management authorities to decrease costs and increase access to services. Charting the practical (Kettunen & Sampson, 2019) and ethical implications (Kettunen & Makela, 2019) of the use of digital technology in career counselling services requires sustained efforts, in the wake of the global pandemic (Drosos et al., 2021) and constant shifts in patterns of use. This need is even more acutely felt in Romania, as historical data and critical reflection on these issues have been limited.

1. The use of digital technology in the Romanian school counselling system

The school counselling system in Romania, in its current iteration, started in the late '90s, with a handful of counsellors. The expansion of the system has picked up steam in 2005 with the creation of dedicated county level structures, called Centers for Educational Resources and Support (Romanian: Centre

Județene de Resurse și Asistență Educațională, CJRAE). Counsellors are the direct employees of these Centers, but, for the most part, their activities are performed in schools and kindergartens. As of the 2019-2020 school year, there were over 2500 school counsellors. While there are differences among the 42 Centers in terms of how they are organized internally, they function according to the same legislation (Ministry of Education, 2011) and have the same attributions and goals.

To qualify for the position of school counsellor, one needs a diploma in one of the following fields: pedagogy, psycho-pedagogy, psychology, sociology, social pedagogy, psycho-sociology, or philosophy-history (the latter applies for the graduates from the classes of 1978 through 1989) (Botnariuc & Făt, 2011). The professional standard of school counsellors is built in such a way that it makes room for all these types of graduates to use their specific skills, rather than build a unique identity for this profession. What brings these professionals together are the locally developed managerial practices (e.g., training programs, acquisitions of software and hardware, reporting and monitoring tools), rather than national professional standards. One of the particularities of the position of school counsellors in Romania is that they are assimilated to teaching staff, with all the rights and obligations entailed by this status, including a limited, but compulsory, number of teaching hours every week.

The job description of the school counsellors makes no specific reference to digital skills. Neither does the report which counsellors need to fill in twice a year regarding their activities. This does not mean that they are not expected to have digital skills or to carry out activities that address issues pertaining to digital technology. This is evident, for example, in the consolidated report published by the Centre for Educational Resources and Support of the Municipality of Bucharest for the 2018-2019 school year (CMBRAE, 2019), which mentions activities to tackle cyberbullying and cyberviolence. Documents developed by the Centers, such as the Institutional Development Plan or the Management Plan, make some references to the use of digital technology, but they are not in any way systematic.

Up until 2008, when a school counsellor was assigned to a school that did not previously have an office, they were awarded a grant equivalent to 5000\$ to equip it. This came with a list of minimal standards, which included

a desktop computer. In the intervening decade, no other systemic measures have been put in place by the Centers managing the activity of school counsellors that would have replaced the existing digital technology. Most counsellors need to rely either on computers made available by the Centers, by the schools in which they work or they have to bring their own devices. Critical reflections on the use of digital technology in school counselling in Romania are scarce. An early comprehensive presentation of the use of digital technology by school counsellors was made by Jigău (2003). Most of the available literature is concerned with the theoretical aspects of how school counsellors could employ digital tools in their work (Botnariuc, 2005) and some practical training experiences (Botnariuc et al., 2011). Some information on the historical use of digital technology can be found in previous doctoral research, which does not deal with this subject specifically, but does mention in passing some aspects, such as the use of websites by the Centers (Călineci, 2012).

Empirical evidence has been gathered in the context of projects developed within EU's Lifelong Learning and Erasmus+ Programs (Iacob, 2012). They showed that access to hardware and Internet connection was far from universal, with a particularly difficult situation in rural settings (Țibu, 2014). The accessibility of devices, software and connectivity seems to be uneven across the country, with most Centers reporting inadequate resources (Andrei & Scoda, 2017; Țibu, 2014). This has led to practices of informal adoption of digital technology.

With the notable exception of psychological and vocational tests, very few of the digital tools used in school counselling have been developed specifically for this purpose. Most frequently used tools were Google Docs and social media (Botnariuc, 2014), but with relatively low percentages – 41.5% for the former and 33.6% for the latter. A survey of how the managers of school and university counselling centers perceive the use of digital technology (Andrei & Scoda, 2017) suggests a low level of usage in K-12 education, with over a fifth of respondents saying that they don't use either telephone, email, Skype or WhatsApp in communicating with students and/or parents. The lack of professional bodies which would support the acquisition of digital competences, has been mentioned in earlier literature (Botnariuc & Făt, 2011) and continues to be a negative factor. More recently, Cedefop (2020) has carried out a survey of policies in the field of counselling and guidance in Romania, with some references to the use of digital technology.

2. Methodology

2.1. Data collection

The data has been collected as part of the “CoolJobs – Propunere alternativă de politici publice pentru prevenirea șomajului în rândul tinerilor” Project (2018-2019), an initiative funded under the European Social Fund, that aimed to develop a policy proposal to support the development of the school guidance system. A brief presentation, using descriptive statistics, was made during the lifetime of the project (Borș, 2019). The aim of the study was to gather information regarding the practices and resources associated with school counselling, especially regarding the use of digital technology. A questionnaire was devised, comprising four sections: 1) demographic data, 2) services provided, 3) availability of resources, and 4) the use of digital technology.

Based on the total number of school counsellors and their distribution across Romania’s 42 administrative units, a sampling methodology was devised to make the results reflective of the national context. The questionnaire was distributed online, with the support of the Centers, which were contacted individually by phone. The data was collected between December 2018 and January 2019. We have received a total of 550 filled in questionnaires, of which 528 were considered valid, which constitutes 72% of the target number of answers, with 30 counties being under-represented and 4 counties over-represented. These data reflect the pre-pandemic uses of digital technology in school counselling and, while they don’t depict the current situation, they can enable future comparisons and benchmarking.

2.2. Statistical processing

2.2.1. *Summary of analysis*

First, missing data were analyzed and addressed using the multiple imputation procedure. Next, a Principal Component Analysis was employed to determine the main factors from the questionnaire assessing counsellors’ frequency of using ICT tools in professional settings. Based on these factors, a normality test was employed to determine if data are normally distributed. A cluster

analysis using the K Means procedure was computed, resulting in three main clusters based on counsellors' levels of ICT usage. Finally, the cluster membership was used as dependent variable to depict which socio-demographic factors could predict it best using a multinomial logistic regression. Certain differences between the three clusters were also investigated through the Kruskal Wallis test.

2.2.2. Missing data analysis

The percentage of missing values ranged from 0.9% for some of the items' questionnaire to as high as 13% for others. As a result, only approximately 53% of the 528 participants in the sample would have been available for analysis if the traditional listwise deletion would have been used. Data were primarily missing due to item nonresponse. We addressed this issue using the multiple imputation technique including the variables at interest under the assumption that missing values are missing at random (Schafer & Graham, 2002). Imputed values were reasonably comparable to the observed ones. Moreover, the results using listwise deletion were like the ones obtained after replacing the missing data, so imputed results were presented.

2.2.3. Principal Component factor Analysis (rotation choice)

For the Principal Component Analysis, we used the direct oblimin rotation. This represents an oblique rotation method that assumes that the factors can be correlated (Gorsuch, 1983). Besides the factors' pattern matrix, this rotation also provides a correlation matrix between the factors. In the presents study, the correlations range between .14 and .33, acceding to the threshold established by Tabachnick, Fidell and Ullman (2007) of .32 for an oblique rotation.

2.2.4. Normality test

The distribution of the variables at interest was investigated using the Kolmogorov-Smirnov normality test. The results showed that all the variables were not following a normal distribution ($p < 0.05$ in all cases). As such, non-parametric tests were employed in order to test the differences between participants.

3. Results

3.1. Target group demographic

The ratio between male and female counsellors was 10.5% to 89.5%, which is lower than the ratio of male to female teachers for the entire K-12 system which is 19% to 81% (Ministry of Education, 2019, p. 33). The median age of the respondents was 43, with the average age at 43.5 and a standard deviation of 9.06. A large majority of respondents had Master's Degree qualifications (76.5%), with a small number having doctoral or post-doctoral qualifications (less than 2%) and the rest with a Bachelor's Diploma.

The education system in Romania has a promotion system for teachers who, after a number of years, can take exams to promote to a more senior level, which comes with financial and professional incentives. More than half of the respondents had already been promoted to the highest level ("Gradul I"), with 8.9% at the beginning of their career ("Debutant") and 37.9% in the middle stages ("Definitivat" and "Gradul II").

Even if the counselling system, in its current form, began expanding massively in the mid-00s, the average number of years of experience in the educational system was 17.39, with 18.2% having more than 25. This is because the counselling system didn't attract only fresh graduates, but also teachers of all levels, who had acquired the necessary qualifications.

84.2% of responding counsellors live in an urban area, which is very different from the pattern of distribution of the population. For reference, at the 2011 census 46.07% of the population lived in rural areas. For the counsellors living in a rural area there is the added burden of commuting to school, with almost 90% percent of them saying that they had to do it in order to reach their school(s), compared with around 30% of those living in an urban area. Only 20.2% percent of respondents said that their work is focused in rural areas.

According to professional standards, a counsellor needs to cover at least 800 primary and secondary cycle pupils or 400 kindergarten pupils. When the number in one school or kindergarten is lower, other schools and/or

kindergartens are assigned until the minimum number is reached. 28% of participants work in one school, with an almost equal number serving three or more schools and the remainder distributing their time between two schools. Of the 528 respondents 34.8% work with kindergarten pupils, 92.2% with primary and lower secondary pupils and 60.6% have duties that involve upper secondary students.

3.2. Factor analysis

A factor analysis was performed on a series of 17 variables that describe the use of digital technology in school counselling (see Table no. 5 for complete results). The Kaiser-Meyer-Olkin measure of sampling adequacy was .807 and Bartlett's test of sphericity was significant ($\chi^2 (136) = 3196.58, p < .000$). Principal components analysis was used to identify the underlying factors. We have used a direct oblimin rotation. Eigen values indicated that the first four factors explained 30.7%, 10.5%, 8.5% and 6.7% of the variance, respectively.

- Counselling activities and professional development (Factor 1): frequency of administering vocational tests, frequency of administering psychological tests, frequency of accessing online courses, frequency of distributing online materials, frequency of ICT supported counselling, frequency of managing a professional webpage.
- Use of hardware (Factor 2): frequency of using a copy machine, frequency of using a scanner, frequency of using a computer, frequency of using a mobile phone.
- Communication (Factor 3): frequency of using messaging apps, frequency of using social media, frequency of using a browser.
- Information management (Factor 4): frequency of using digital technology to maintain and update an archive, frequency of using text processing software, frequency of using image processing software, frequency of using digital technology to schedule appointments.

3.3. Cluster analysis

We have used a K-means cluster analysis in order to determine the position of counsellors relative to these latent factors, grouping them in three clusters.

A total of 528 participants were included. The following clusters have resulted from the analysis (see Table no. 1):

- Cluster 1: all-around use of digital technology for professional purposes. Number of members: 109.
- Cluster 2: less frequent use of digital technology. Number of members: 255.
- Cluster 3: regular use of digital technology, for a) counselling and professional development, as well as b) information management. Number of members: 164.

Table no. 1. Final Cluster Centers

	Cluster		
	1	2	3
Counselling and professional development (Factor 1)	.86002	-.70583	.52589
Use of hardware (Factor 2)	1.03418	-.47653	.05359
Communication (Factor 3)	1.52694	-.41955	-.36252
Information management (Factor 4)	.67721	-.76609	.74109

The ANOVA test shows that the variation of the variables along the three clusters is significant (see Table no. 2).

Table no. 2. ANOVA test

Measure	Cluster		Error		<i>F</i>	Sig.
	<i>Mean Square</i>	<i>df</i>	<i>Mean Square</i>	<i>df</i>		
Counselling and professional development (Factor 1)	126.508	2	.522	525	242.409	.000
Use of hardware (Factor 2)	87.477	2	.671	525	130.453	.000
Communication (Factor 3)	160.288	2	.393	525	407.665	.000
Information management (Factor 4)	144.860	2	.452	525	320.512	.000

We have used a series of descriptors (see Table no. 3) in order to explore the characteristics of these three clusters. It is noteworthy that, on average, members of Cluster 1 (most frequent users of digital technology for

professional purposes) report having a less adequate physical environment and worse access to ICT tools and internet connection. They are also more likely to reside in a rural community, to commute to work and have a lower qualification level.

Table no. 3. *Description of clusters*

Item	Range		Cluster 1 (N=109)		Cluster 2 (N=255)		Cluster 3 (N=164)	
	Min	Max	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Years of experience in the educational system	1	45	18.71	10.42	18.02	9.69	15.52	9.62
Level of studies	1.00	4.00	1.63	.53	1.90	.45	1.79	.43
Gender	1.00	2.00	1.22	.42	1.07	.26	1.06	.24
Commuting to work	0	1.00	.45	.50	.40	.49	.36	.48
Urban residence	0	1.00	.76	.42	.86	.33	.85	.35
Sum of frequency of service requests	4.00	24.00	14.14	4.75	10.99	4.1	13.27	5.1
Sum of level of perceived interest for counselling activities	5.80	32.00	18.23	5.63	21.93	5.70	19.48	5.38
Sum of frequency of use of hardware	1.44	8.00	2.46	.95	2.22	.78	2.32	.81
Adequate space for 1-to-1 activities	1.00	4.00	3.15	1.16	3.42	.94	3.35	.93
Availability of tests for counselling	1.00	4.26	2.18	1.01	2.81	1.08	2.54	1.09
Availability of ICT tools	1.00	4.00	2.60	1.05	2.91	1.12	2.62	1.17
Adequacy of Internet connection	1.00	4.00	3.05	1.13	3.19	1.01	3.21	.99
Hours/week of professional use of ICT	0	60	9.31	6.5	13.34	8.34	10.78	8.98

In order to determine the significance of the differences between the clusters, we have performed a non-parametric one-way ANOVA test between the three clusters (see Table no. 4).

Table no. 4. *One-way ANOVA test between clusters*

<i>Variable</i>	<i>Cluster comparison</i>	<i>F</i>	<i>Adj. Sig.</i>
1. Sum of frequency of use of hardware	Cluster 2 vs. Cluster 3	-19.861	.153
	Cluster 2 vs. Cluster 1	36.728	.005
	Cluster 3 vs. Cluster 1	16.86	.538
2. Use of document editing software	Cluster 2 vs. Cluster 3	-60.277	.000
	Cluster 2 vs. Cluster 1	121.838	.000
	Cluster 3 vs. Cluster 1	61.561	.000
3. Use of photo editing software	Cluster 2 vs. Cluster 3	-165.604	.000
	Cluster 2 vs. Cluster 1	156.850	.000
	Cluster 1 vs. Cluster 3	-8.754	1.000
4. Use of messaging apps	Cluster 2 vs. Cluster 3	-2.813	1.000
	Cluster 2 vs. Cluster 1	207.765	.000
	Cluster 3 vs. Cluster 1	204.951	.000
5. Use of social networks	Cluster 2 vs. Cluster 3	-8.698	1.000
	Cluster 2 vs. Cluster 1	207.288	.000
	Cluster 3 vs. Cluster 1	198.589	.000
6. Administering a professional web page	Cluster 2 vs. Cluster 3	-92.488	.000
	Cluster 2 vs. Cluster 1	145.949	.000
	Cluster 3 vs. Cluster 1	53.461	.011
7. Use of a web-browser	Cluster 2 vs. Cluster 3	-17.224	.390
	Cluster 2 vs. Cluster 1	131.820	.000
	Cluster 3 vs. Cluster 1	114.595	.000
8. Use of computer-based or online psychological tests	Cluster 2 vs. Cluster 3	-141.842	.000
	Cluster 2 vs. Cluster 1	195.879	.000
	Cluster 3 vs. Cluster 1	54.038	.010
9. Use of computer-based or online vocational tests	Cluster 2 vs. Cluster 3	-150.558	.000
	Cluster 2 vs. Cluster 1	191.199	.000
	Cluster 3 vs. Cluster 1	40.640	.082
10. Use of ICT to schedule individual or group appointments	Cluster 2 vs. Cluster 3	-168.229	.000
	Cluster 2 vs. Cluster 1	139.594	.000
	Cluster 1 vs. Cluster 3	-28.636	.281
11. Use of ICT to maintain an archive of professional documents	Cluster 2 vs. Cluster 3	-140.790	.000
	Cluster 2 vs. Cluster 1	138.831	.000
	Cluster 1 vs. Cluster 3	-1.959	1.000

<i>Variable</i>	<i>Cluster comparison</i>	<i>F</i>	<i>Adj. Sig.</i>
12. Delivery of ICT-supported counselling	Cluster 2 vs. Cluster 3	-138.572	.000
	Cluster 2 vs. Cluster 1	190.293	.000
	Cluster 3 vs. Cluster 1	51.721	.013
13. Use of ICT to access training courses	Cluster 2 vs. Cluster 3	-128.820	.000
	Cluster 2 vs. Cluster 1	170.840	.000
	Cluster 3 vs. Cluster 1	42.020	.061
14. Use of ICT to distribute career counselling materials that you developed	Cluster 2 vs. Cluster 3	-161.046	.000
	Cluster 2 vs. Cluster 1	163.205	.000
	Cluster 3 vs. Cluster 1	2.159	1.000
15. Hours/week of professional use of ICT	Cluster 3 vs. Cluster 2	54.982	.001
	Cluster 1 vs. Cluster 2	-81.364	.000
	Cluster 1 vs. Cluster 3	-26.382	.447

Note. Significant results were highlighted in bold.

3.4. Multinomial Logistic Regression

Using a series of 12 variables, we have tried to predict membership in one of the clusters (see Table no. 6 for complete results). They included: number of years of experience in the educational system, level of studies, gender, commuting to work, urban residence, sum of frequency of service requests (the sum of five items measuring perceived frequency of service requests from different types of beneficiaries), sum of level of perceived interest for counselling activities (the sum of eight items measuring the perceived interest of pupils in different types of activities, such as information about the world of work, preparing a CV, worker's rights, etc.), sum of frequency of use of hardware (the sum of six items describing the frequency of use of different hardware), adequacy of environment for 1-to-1 activities, adequacy of counselling tests, hours/week of using ICT in counselling, adequacy of ICT tools. The model was significant: $\chi^2(24) = 141.67$ ($p = 0.000$). The effect size was Nagelkerke $R^2 = 0.31$. We have used Cluster 2 ("less infrequent use of digital technology") as the reference category.

Comparing Cluster 2 with Cluster 1 ("all-around use of digital technology for professional purposes"), we can observe that Cluster 1 membership was positively predicted by: a) sum of frequency of service requests ($b = 0.110$,

Wald $\chi^2 = 10.59$, $p = 0.001$, $OR = 1.116$); b) sum of frequency of use of hardware ($b = 0.56$, Wald $\chi^2 = 8.79$, $p = 0.003$, $OR = 1.767$). Cluster 1 membership was negatively predicted by: a) level of studies ($b = -1.354$, Wald $\chi^2 = 15.64$, $p = 0.000$, $OR = .258$); urban residence ($b = -1.391$, Wald $\chi^2 = 9.93$, $p = 0.002$, $OR = .249$); sum of level of interest for counselling activities ($b = -0.127$, Wald $\chi^2 = 17.26$, $p = 0.000$, $OR = .83$); adequacy of counselling tests ($b = -0.457$, Wald $\chi^2 = 9.42$, $p = 0.002$, $OR = .633$); hours/week of using ICT in counselling ($b = -0.050$, Wald $\chi^2 = 5.08$, $p = 0.024$, $OR = .952$).

Comparing Cluster 2 with Cluster 3 (*“regular use of digital technology, for counselling and professional development, as well as information management”*), we can observe that membership in Cluster 3 was positively predicted by sum of frequency of service requests ($b = 0.082$, Wald $\chi^2 = 8.53$, $p = 0.003$, $OR = 1.086$). Cluster 3 membership was negatively predicted by: a) level of studies ($b = -.915$, Wald $\chi^2 = 8.81$, $p = 0.003$, $OR = .40$); commuting ($b = -0.57$, Wald $\chi^2 = 3.89$, $p = 0.048$, $OR = .564$); sum of level of interest for counselling activities ($b = -0.56$, Wald $\chi^2 = 5.20$, $p = 0.023$, $OR = .946$).

Table no. 5. *Factor Analysis of the use of digital technology in school counselling*

Item	Factor loading			
	1	2	3	4
Factor 1: Counselling and professional development				
1. Frequency of administering vocational tests.	.87	.05	.12	-.10
2. Frequency of administering psychological tests.	.86	.09	.09	-.10
3. Frequency of accessing online courses.	.64	.06	.03	.13
4. Frequency of distributing online materials.	.51	.03	-.10	.42
5. Frequency of providing ICT supported counselling	.46	.03	.08	.42
6. Frequency of managing a professional webpage	.27	.04	.16	.26
Factor 2: Use of hardware				
7. Frequency of using a copy machine.	.02	.85	-.04	-.10
8. Frequency of using a scanner.	.10	.74	-.21	.15
9. Frequency of using a computer.	.03	.74	.08	.00
10. Frequency of using a mobile phone.	-.03	.52	.19	.02
Factor 3: Communication				
11. Frequency of using messaging apps.	.02	.01	.84	.03
12. Frequency of using social media.	.20	-.11	.80	.03
13. Frequency of using a web-browser	-.04	.27	.51	-.04

Item	Factor loading			
	1	2	3	4
Factor 4: Information management				
14. Frequency of using digital technology to maintain and update an archive	.06	.05	-.13	.80
15. Frequency of using text processing software	-.34	.08	.18	.63
16. Frequency of using image processing software.	.21	-.01	.11	.50
17. Frequency of using digital technology to schedule appointments.	.29	.08	-.09	.44

Note. N = 528. The extraction method was principal components analysis with direct oblim rotation with Kaiser Normalization.

Table no. 6. Multinomial regression

Cluster number		B	Std. Error	Wald	df	Sig.	Exp(B) Odds ratio	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1	Intercept	2.809	1.480	3.604	1	.058			
	No. of working years	.016	.016	1.068	1	.301	1.016	.986	1.048
	Level of studies	-1.354	.342	15.646	1	.000	.258	.132	.505
	Gender	.679	.408	2.769	1	.096	1.972	.886	4.386
	Commuting	-.503	.355	2.014	1	.156	.605	.302	1.211
	Urban residence	-1.391	.441	9.933	1	.002	.249	.105	.591
	Sum of frequency of service requests.	.110	.034	10.597	1	.001	1.116	1.045	1.192
	Sum of level of interest for counseling activities	-.127	.031	17.268	1	.000	.881	.830	.935
	Sum of frequency of use of hardware	.569	.192	8.799	1	.003	1.767	1.213	2.573
	Adequacy of environment for 1-to-1 activities	.151	.161	.880	1	.348	1.163	.849	1.593
	Adequacy of counselling tests	-.457	.149	9.421	1	.002	.633	.473	.848
	Hours/week of using ICT in counselling	-.050	.022	5.087	1	.024	.952	.911	.994
	Adequacy of ICT tools	.005	.139	.001	1	.974	1.005	.765	1.319
3	Intercept	2.184	1.339	2.662	1	.103			
	No. of working years	-.012	.013	.961	1	.327	.988	.964	1.012
	Level of studies	-.915	.308	8.810	1	.003	.400	.219	.733
	Gender	-.678	.454	2.226	1	.136	.508	.208	1.237
	Commuting	-.572	.290	3.898	1	.048	.564	.320	.996

Cluster number	B	Std. Error	Wald	df	Sig.	Exp(B) Odds ratio	95% Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
Urban residence	.153	.428	.128	1	.721	1.165	.504	2.694
Sum of frequency of service requests.	.082	.028	8.533	1	.003	1.086	1.027	1.147
Sum of level of interest for counselling activities	-.056	.025	5.203	1	.023	.946	.901	.992
Sum of frequency of use of hardware	.180	.176	1.045	1	.307	1.197	.848	1.691
Adequacy of environment for 1-to-1 activities	.241	.147	2.673	1	.102	1.273	.953	1.699
Adequacy of counselling tests	-.155	.121	1.627	1	.202	.857	.676	1.086
Hours/week of using ICT in counselling	-.028	.015	3.405	1	.065	.972	.943	1.002
Adequacy of ICT tools	-.131	.116	1.262	1	.261	.878	.699	1.102

4. Discussion

The results paint a contrasting picture of three groups of professionals with significantly differing approaches to the use of digital technology – both physical devices, as well as software. When the data was collected, the largest group of school counsellors – 48% of the participants in the study – was making the least use of digital technology for any professional purpose. While this group reports longer hours of use/week of digital technology, compared with the other two groups, it makes less frequent and less diversified use of it. A possible explanation could reside in their digital competences, which could very well be lower than those of the other groups, but this hypothesis needs to be tested in a future study.

The non-parametric one-way ANOVA test points towards significant differences between the two most diverging groups (Cluster 1 vs. Cluster 2) on all variables related to the use of digital technology. All are in favor of the group we have designated as *all-around use of digital technology for professional purposes* (Cluster 1), except for the number of hours of use/week (see Table no. 4).

The multinomial regression shows that the group making the most frequent use of digital technology (Cluster 1) has a lower qualification level, worse

access to digital tools and is more likely to reside in a rural area. This suggests that digital tools are used to mitigate some of the inequalities embedded in the educational system. Membership to both Cluster 1 and Cluster 3, the ones most engaged with digital technology, was positively predicted by the perceived frequency of receiving requests of services from beneficiaries, but negatively predicted by the perceived interest in the services offered. The differences appear to be between concrete request of support and a more general attitude towards school counselling services. The groups of counsellors most engaged with digital technology seem to have a more direct approach in engaging with their beneficiaries, even if they perceive a lower level of interest on their part.

While the intended number of answers was not reached and the results can't be considered representative at national level, they are still indicative of the trends in accessing resources and using digital technology in counselling activities.

We did not find any reliable data regarding systematic changes during the pandemic – either the training of counsellors or the increased availability of digital means – that could have purposefully affected the use patterns of digital tools. The increase in their use was driven by the decision to shift all educational activities online, but without the proper support for counsellors.

5. Conclusions

The study was conducted on the eve of the outbreak Covid-19 pandemic, which suggests that the sudden and complete switch to a digital environment for the delivery of school counselling services must not have been an easy task for many counsellors. A new study would be needed to assess the impact of how digital skills have been affected by this involuntary change. The fact that the group of counsellors working in more adverse conditions make more frequent and complex use of digital technology, suggests that digital technology could be conducive to overcoming the divisions that characterize the Romanian educational system. This should be further investigated and supported through local and national policies.

We think that there is a stringent need to close the gap in terms of practice among school counsellors, in the sense of upskilling and establishing reference

frameworks that would enable practitioners to make more effective use of digital technology. We know from previous studies that the training offer in the use of digital tools for school counsellors has been erratic, coupled with a lack of systematic approach to the use of digital technology within these services.

The only systematic use of digital technology has been in management – counsellors fill in reports which they submit to the county level centers – and information provision to students, regarding educational and training offers. This reflects a significant underutilization of the capacities that digital technologies offer, as means to deliver services, but also to support career building activities. More complex endeavors, such as developing opportunities for co-careering (Bakke, Haug & Hooley, 2018; Kettunen, Sampson & Vuorinen, 2015) or discussing work in a digital environment (Fuchs & Sandoval, 2014), are not yet on the agenda of the centers who manage the counsellors' activity.

References

- Andrei, A., & Scoda, A. (2017). *How the potential of ICT is integrated in counselling and guidance throughout Romania*. Proceedings of the 14th International Scientific Conference eLearning and Software for Education. Editura Universitară.
- Bakke, I., Haug, E., & Hooley, T. (2018). Moving from information provision to co-careering: Integrated guidance as a new approach to e-guidance in Norway. *Journal of the National Institute for Career Education and Counselling*, 41(1), 48-55. <https://doi.org/10.20856/jnicec.4108>
- Borș, O. (2019). *Consilierea și orientarea profesională a elevilor din învățământul preuniversitar* [Counselling and guidance for students in K-12 education]. <https://doi.org/10.13140/RG.2.2.32851.94248>
- Botnariuc, P. (2005). *Instrumente informatizate de consilierea carierei în România - dezvoltare versus utilizare* [ICT tools for career counselling in Romania - development versus use]. *Psihologie socială*.
- Botnariuc, P. (2014). *How do Guidance Counsellors Use the Web 2.0 Technologies in Their Activity – a National Study*. Proceedings of the 10th International Scientific Conference eLearning and Software for Education. Editura Universitară.
- Botnariuc, P., & Făt, S. (2011). *Developing the ICT skills of guidance and counselling practitioners in Romania. Analysis of the national context*. Proceedings of the 7th International Scientific Conference eLearning and Software for Education. Editura Universitară.

- Botnariuc, P., Țibu, S., Iacob, M., Gavriliță, A., & Tăsica, L. (2011). *Utilizarea tehnologiei informației și comunicării în activitatea de consiliere* [The use of ICT in counselling activities]. Institutul de Științe ale Educației.
- Călineci, M.C. (2012). *Managementul calității în orientarea școlară* [Quality management in school guidance] [Unpublished doctoral dissertation]. University of Bucharest.
- Cedefop. (2020). *Inventory of lifelong guidance systems and practices - Romania*. CareersNet national records.
<https://www.cedefop.europa.eu/en/publications-and-resources/country-reports/inventory-lifelong-guidance-systems-and-practices-romania>
- CMBRAE. (2019). *Raport de activitate al Centrul Municipiului București de Resurse și Asistență Educațională. An școlar 2018-2019* [Activity report of the Centre for Educational Resources and Support of the Municipality of Bucharest. 2018-2019 school year].
https://www.cmbrae.ro/2017/wp-content/uploads/2020/09/Raport_activitate_2018_2019_CMBRAE_inreg_ISMB.pdf
- Drosos, N., Theodoroulakis, M., Antoniou, A., & Rajter, I.C. (2021). Career Services in the Post COVID 19 Era: A Paradigm for Career Counseling Unemployed Individuals. *Journal of Employment Counseling*, 58(1), 36-48.
<https://doi.org/10.1002/joec.12156>
- Fuchs, C., & Sandoval, M. (2014). Digital Workers of the World Unite! A Framework for Critically Theorising and Analysing Digital Labour. *TripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society*, 12(2), 486-563.
<https://doi.org/10.31269/triplec.v12i2.549>
- Gorsuch, R. (1983). *Factor analysis*. Erlbaum Associates.
- Iacob, M. (Ed.). (2012). *Good practices in the use of ICT in providing guidance and counselling*. Institutul de Științe ale Educației.
- Iacob, M. (2020). Tehnologia digitală în consilierea carierei. In C. Ceobanu, C. Cucoș, O. Istrate & I.-O. Pânișoară (Eds.), *Educația digitală*. Editura Polirom.
- Jigău, M. (Ed.). (2003). *Tehnologiile informatice și de comunicare în consilierea carierei* [Communication and information technologies in career counselling]. Editura AFIR.
- Kettunen, J., & Makela, J.P. (2019). Practitioners' conceptions of ethical practice in social networking in career services. *International Journal for Educational and Vocational Guidance*, 19(3), 345-362.
<https://doi.org/10.1007/s10775-018-9383-4>
- Kettunen, J., & Sampson, J.P. (2019). Challenges in implementing ICT in career services: Perspectives from career development experts. *International Journal for Educational and Vocational Guidance*, 19(1), 1-18.
<https://doi.org/10.1007/s10775-018-9365-6>

- Kettunen, J., Sampson, J.P., & Vuorinen, R. (2015). Career practitioners' conceptions of competency for social media in career services. *British Journal of Guidance & Counselling*, 43(1), 43-56.
<https://doi.org/10.1080/03069885.2014.939945>
- Kettunen, J., Vuorinen, R., & Ruusuvirta, O. (2016). European Lifelong Guidance Policy Network representatives' conceptions of the role of information and communication technologies related to national guidance policies. *International Journal for Educational and Vocational Guidance*, 16, 327-342.
<https://doi.org/10.1007/s10775-015-9313-7>
- Ministry of Education. (2011). *ORDIN Nr.5555 pentru aprobarea Regulamentului privind organizarea si funcționarea centrelor județene/al municipiului București de resurse și asistență educațională* [Order 5555 regarding the approval of the Rules for how county centers/the center of the Municipality of Bucharest for educational resources and support should be organized and function].
- Ministry of Education. (2019). *Raport privind starea învățământului preuniversitar din România* [Report on the status of K-12 education in Romania].
- Schafer, J.L., & Graham, J.W. (2002). Missing data: our view of the state of the art. *Psychological Methods*, 7(2), 147-177.
- Tabachnick, B.G., Fidell, L.S., & Ullman, J.B. (2007). *Using multivariate statistics*. Pearson.
- Țibu, S. (2014). *The use of ICT within the Romanian School Guidance Community*. Proceedings of the 10th International Scientific Conference eLearning and Software for Education. Editura Universitară.
- Watts, A.G. (1996). Computers in guidance. In *Rethinking careers education and guidance: Theory, policy and practice*. Routledge.

The online version of this article can be found at:
<http://revped.ise.ro/category/2022-en/>



This work is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

*To view a copy of this license, visit
<http://creativecommons.org/licenses/by-nc-sa/4.0/>
or send a letter to Creative Commons,
PO Box 1866, Mountain View, CA 94042, USA.*

Versiunea online a acestui articol poate fi găsită la:
<http://revped.ise.ro/category/2022-ro/>



Această lucrare este licențiată sub Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

*Pentru a vedea o copie a acestei licențe, vizitați
<http://creativecommons.org/licenses/by-nc-sa/4.0/>
sau trimiteți o scrisoare către Creative Commons,
PO Box 1866, Mountain View, CA 94042, SUA.*