Experimental Research on Schools as Learning Organisations: The Case of Romania

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The 'learning organization' is one of the organizational models developed by the academic and business environment to provide solutions to the need for companies to adapt and survive, which knew over time numerous extensions, from being defined in relation to business organizations, to be linked to non-profit organizations – hospitals, public administration and even schools and universities. Following the 'school as leaning organization' (SLO) concept and model proposed by Kools and Stoll (2017), the present paper explores the question of to what extent the key-characteristics of learning organizations already exist in schools in Romania. It is based on previous results of a theoretical approach which showed that a slight starting baseline could be given by the performance indicators and descriptors identified as being correlated with dimensions and key-characteristics of the OECD-UNICEF's SLO model. The present approach in an experimental one, at a sample of 238 urban and rural schools externally evaluated in the first semester of the school year 2018–2019 and the results highlight that the minimum levels of incidence of several key-characteristics of SLO's varying between 30.67% and 73.10%. The limitation of this paper is given by the fact that the data were collected from the external and internal evaluation of schools, in order to determine the level of educational services offered, means not specifically devoted to identifying SLO characteristics.

Key words: school as learning organization, levels of incidence of key-characteristics, external-internal evaluation
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Introduction

In attempting to provide solutions to the need for companies to adapt and survive, in the early 90's the academic and business environment developed several theoretical new organizational models,

among which the 'learning organization.' This concept and model gained wide recognition when Peter M. Senge published in 1990 the work *The Fifth Discipline: The Art and Practice of the Learning Organization,* with five core 'learning disciplines' – personal mastery, mental models, creation of a common vision and team learning, systemic thinking.

The learning organization concept and model knew over time numerous extensions, from being defined in relation to business organizations, to be linked to non-profit organizations – hospitals, public administration and even schools and universities. The last approach on schools direction was made by Kools and Stoll (2017), which proposed a model for re-conceptualizing them as a learning organization focusing on seven action-oriented 'dimensions' (based on the model promoted by Watkins and Marsick): (1) developing and sharing a vision centered on the learning of all students; (2) creating and supporting continuous learning opportunities for all staff; (3) promoting team learning and collaboration among all staff; (4) establishing a culture of inquiry, innovation and exploration; (5) embedding systems for collecting and exchanging knowledge and learning; (6) learning with and from the external environment and larger learning system; (7) modelling and growing learning leadership. This last approach was complemented with key – characteristics (key features) for each of the seven directions of action through the guide 'What Makes a School a Learning Organisation? A Guide for Policy Makers, School Leaders and Teachers' (OECD 2016), therefore offers the possibility to be measured and established both the starting level and the degree of transformation after a certain period and a series of taken steps.

Considering that between 2009 and 2018, the following phenomena occurred at national educational level: (1) a general decrease in the school population (by 17% till 2016, compared to 2006), (2) the transfer of the last year of kindergarten to primary education (along with reshaping both their curriculum), (3) the gradual transformation of arts and crafts schools into technological high schools, followed, from 2014, by a strong return to professional schools, (4) a massive reorganization of the school network (many public schools losing their decisional and administrative independence, being transformed into structures of other schools and destroying organizational culture of both, the receiving and the received school) and (5) the constant decrease of public expenditure in education (from 5.76% of total expenditures in 2009, to 3.76% of total expenditures in 2017), a considerable pressure was felt at the Romanian educational

system, with repercussions on the efficiency of the school organizations – a research entitled 'A Study of the Evolution of Educational Efficiency: Romanian case' carried out in 2017 on a representative sample of 2956 schools, highlighted, among other things, that for the 2014–2017 period, 64.7% of them registered negative evolutions of the efficiency index, 15.6% had a steady evolution and only 19.7% had positive evolutions of the efficiency index (Paraschiva et al. 2017, 6–7).

In this context, an approach on schools al learning organizations (SLO) at the Romanian educational system level has been developed, both theoretical and experimental, aiming to provide a starting point on the necessity and opportunity of implementing it. The present paper presents the final part of the general approach on SLO model proposed by OECD (2016) and Kools and Stoll (2017), Romanian case – an experimental research developed on a sample of 238 rural and urban schools externally evaluated in the first semester of the school year 2018–2019.

Literature Review

The advantages for the implementation of the 'learning organizations' concept and model, according to Sarder (2016, 10), derive from the following:

1. The organization gets always to be supplied with new ideas and information (coming from science and technology, the environment, human resources development etc.);
2. Learning as a process of the whole organization makes new ideas and information spread and transferred to all (organizational) levels from the lowest to the top (top management) and transposes them into action;
3. Learning not only leads to the improvement of the product and/or services offered, but also to a growth/development of the working environment that adapts more easily to the challenges, responds more quickly to different situations/problems and becomes more efficient;
4. Organizational behaviour changes as a result of the development of an environment based on openness and trust, changes are perceived as part of the process of improvement and development, and organizational culture becomes one of continuous improvement;
5. The organization is more likely to attract, retain and motivate the best employees.

However, almost three decades after initiation, a modest progress has been made in the implementation of the 'learning organization' model: (1) either due to the multitude of approaches (there is not only one standard model, no single conversion path), (2) or due to the lack of measurement and assessment tools that accompanies proposed models (tools capable of diagnosing the current organizational state of art and of guiding change in his core dimensions/elements), (3) or because the proposed models addressed exclusively top management (leaving the middle management, where concrete activities are carried out, discovered), (4) or because transformation and results are not immediate (requiring time and effort at all levels, mentality changes and management commitment).

Regarding Romania, the general concept and model of learning organization have very few approaches that exceed the theoretical level, using a specific assessment methodology and measurement tools in order to determine incidence of certain key-characteristics, but none of them directed towards schools in pre-university level. Among them are:

1. One who was directed towards the public administration – an exploratory study on 26 County Councils (out of 41) for diagnosing the current state of art in relation to a learning organization, using the model and instrument proposed by Garvin, Edmondson and Gino (Giura 2012); according to the results, the 26 Romanian County Councils are learning organizations only in terms of leadership that encourages learning (for 'learning environment' and 'learning processes,' the findings revealed that the County Councils act like learning organizations in a very small degree).
2. One who was directed towards business – a survey on 20 large pharmaceutical companies controlling about 80% of the Romanian sales market and 6 SMEs pharmaceutical companies, over the elements (dimensions) that define a learning organization, using the models originally developed by Senge (1990) and later improved by Watkins and Marsick (1993) (Bordeianu et al. 2014); according to the results, large companies obtained higher scores on most dimensions ('systems thinking,' 'shared vision,' 'organizational culture and learning environment' and 'knowledge transfer') while some dimensions (such as 'teamwork and collaboration' and 'leadership and employee empowerment') have slightly higher scores in case of SMEs.

First part of the general approach on SLO model proposed by OECD (2016) and Kools and Stoll (2017), Romanian case (the theoretical

approach and its results) showed that the implementation of this model:

1. Could be on opportunity to embrace focus on students from organizational side, complementing the national project CRED ('Relevant curriculum, open education for all' – 'Curriculum relevant, educatie deschisa pentru toti,' funded by the ESF with 42 million euro, to support the reform of the current school curricula) which embrace focus on students from teachers side; these two demarches can be developed in synergy to enhance student-focus.
2. Could rely on a slight starting baseline given by the performance indicators and descriptors which were identified as being correlated with dimensions and key-characteristics of the OECD's (2016) and Kools and Stoll's (2017) SLO model (table 1 presents this correlation).

The final part of the general approach on SLO model proposed by OECD (2016) and Kools and Stoll (2017), Romanian case – the experimental research – is based on the results of the external and internal evaluation (self-evaluation) on a sample of 238 rural and urban schools in relation to 43 performance indicators (including descriptors) for quality assessment and quality assurance in pre-university education provided in the Romanian Government Decision no. 1534 (Guvernul României 2008). Both types of assessments (external and internal) are carried out on the same descriptors and indicators and on the same five-steps orderly quality scale, in order to process the data being realized their equivalence on a quantitative scale, with points: 0 – unsatisfactory (means that the minimum/basic requirements are not met), 1 – satisfactory (means that the minimum/basic requirements are met), 2 – good (means that at least one performance descriptor is reached), 3 – very good (means that all performance descriptors are reached), 4 – excellent (means that the organization has proven to achieve all performance descriptors and in addition has developed its own descriptors, in line with the context in which it operates and the specificity of its educational services, own descriptors which are shown to have been achieved).

Research Methodology

DATA COLLECTION AND SAMPLE

The data collection process for this research relies in 238 public reports from the first semester of the 2018–2019 school year (post-secondary schools – 1, colleges and high schools – 54, gymnasium

TABLE 1 Correlations between Underlying Characteristics of the OECD's (2016) and Kools and Stoll's (2017) SLO Model and Performance Indicators That Are Used at Romanian National Level in Order to Establish the Quality of the Educational Services

Dimension/characteristics		Performance indicators (and descriptors)
2nd	Professional learning connects work-based learning and external expertise	*Indicator 30: Scientific activity of teachers.* Teachers participation in the scientific research activity carried out by the school or at local, regional, national or international level it has grown in number and percentage *Indicator 31: Methodological activities of teachers.* Teachers participation in the methodological activities carried out at territorial level – with demonstration activities, presentations etc. – it has grown in number and percentage. *Indicator 36: Professional development of staff.* The application in teaching activities of the participation's results in continuous training and professional development programs is systematically monitored. The application in teaching activities of the participation's results in methodological and scientific activities is systematically monitored.
	Professional learning is based on assessment and feedback	*Indicator: 36 Professional development of staff.* Observing the current activity and the feedback received from the relevant beneficiaries are used for the review of the professional development plans. *Indicator 39: Teaching staff evaluation.* The assessment of the teaching staff is based on feedback from relevant stakeholders. The assessment of the teaching staff includes recommendations for further development.

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schools – 139, primary schools – 2, kindergartens – 30, school sports clubs – 3, clubs for children – 5, inclusive education centres – 4) regarding the level of educational services provided, 124 organizations being from the urban area and 114 organizations being from rural area. The distribution of these 238 schools by type of services provided and by residence area do not reflect the situation at national level, their list being generated by the County Schools Inspectorates (due to the fact that they never went through a regular external evaluation process).

MEASUREMENTS

For the first level of the analysis, they were determined for ten performance indicators developed at national level (presented in table

TABLE 1 *Continued from the previous page*

Dimension/characteristics		Performance indicators (and descriptors)
5th	Systems are in place to examine progress and gaps between current and expected impact	*Indicator 28: Evaluation of pupils' school results.* Each teacher can describe for each group and student the strengths and weaknesses regarding the achievement of the curricular objectives.
	The school development plan is evidence-informed, based on learning from self-assessment, and updated regularly	*Indicator 37: Revision of the educational offer and of the development plan.* The benchmarking is used to optimize the educational offer and the development plan. The staff and relevant stakeholders are involved in reviewing the educational offer and the development plan.
	The school regularly evaluates its theories of action, amending and updating them as necessary	*Indicator 34: Existence and implementation of institutional self-evaluation procedures.* The results of self-evaluation and external evaluation are used to plan, carry out and review the quality assurance and improvement activities and procedures.

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1) the following: (1) the average external assessment scores (as a simple arithmetic mean of the results obtained by the 238 schools in the external evaluation), (2) the average internal assessment scores (as a simple arithmetic mean of the results provided by the 238 schools in the external evaluation) and (3) the average score's differences between internal and external prospects, to see to what extent these two are close for the ten targeted performance indicators; positive values mean that the result of self-evaluation is higher than the external evaluation (so school organizations have been overrated) and negative values mean that the result of self-evaluation is lower than that of external evaluation (so school organizations have been underestimated).

For the second level of the analysis, were introduced: (1) the dispersion for each set of values (self-evaluation and external evaluation) and for each of performance indicators (as a synthetic indicator of variance, which provides information on the degree of scattering of the elements relative's to the average, considered as a central trend) and (2) the z parameter test (two-tail) for comparing the averages of sample values (self-evaluation and external evaluation) per indicator. Therefore, parametric bilateral tests were performed to compare the means of the sample values (238 sample values for self-evaluation and 238 sample values for external evaluation), having as background: the hypothesis H0 (or the null hypothesis) – the values compared do not differ between them (in other words, the

TABLE 1 *Continued from the previous page*

Dimension/characteristics		Performance indicators (and descriptors)
6th	The school is an open system, welcoming approaches from potential external collaborators	*Indicator 3: The existence and functioning of the internal and external communication system.* The school systematically communicates with parents and other stakeholders.
	The school collaborates with parents/guardians and the community as partners in the education process and the organization of the school	*Indicator 1: The existence, structure and content of the projective documents (development plan and implementation plan).* Aims, objectives and programs established at the request of relevant stakeholders are included in the development plan and in the implementation plan. *Indicator 32: Setting up the school budget.* The school ensures the involvement of community partners and relevant stakeholders in budget planning. *Indicator 34: Existence and implementation of institutional self-evaluation procedures.* The self-evaluation procedures are carried out with the participation of relevant stakeholders.
	Staff collaborate, learn and exchange knowledge with peers in other schools through networks and/or school to-school collaborations	*Indicator 30: Scientific activity of teachers.* Teachers capitalize on teaching the results of the scientific research activity carried out at local, regional, national or international level. *Indicator 31: Methodological activity of teachers.* Teachers capitalize on teaching the results of the methodological activities carried out at local level.

NOTES Authors own development, based on the theoretical approach results on correlating the dimensions provided in the OECD's (2016) and Kools and Stoll's (2017) SLO model and the performance indicators (including descriptors) for quality assessment and quality assurance in pre-university education provided in the Romanian Government Decision no. 1534 (Guvernul României 2008).

difference in the mean of the two sample values, internal and external evaluation, is not significantly different from zero); the H1 hypothesis (or the alternative hypothesis) – the values compared differ between them (in other words, the difference in the mean of the two sample values, internal and external evaluation, is significantly different from zero). In this way the reconciliation between the two evaluation processes (internal and external) can be considered and the results of the previous level of analysis can be validated.

RESEARCH RESULTS

Considering the previous quantitative scale (with points), were obtained average scores per indicator with values between 2 and 3 (table 2 presents the results of the first level of the analysis) and a gen-

TABLE 2 The Results of the First Level of the Analysis

Performance indicators	(1)	(2)	(3)
101 The existence, the structure and the content of the projective documents (development plan and implementation plan)	2.550420	2.689076	+0.138655
103 The existence and functioning of the internal and external communication system	2.705882	2.705882	0.000000
128 Evaluation of pupils' school results	2.516807	2.676471	+0.159664
130 Scientific activity of teachers	2.340336	2.361345	+0.021008
131 Methodological activity of teachers	2.752101	2.726891	–0.025210
132 Setting up the school budget	2.676471	2.726891	+0.050420
134 Existence and implementation of institutional self–evaluation procedures	2.474790	2.500000	+0.025210
136 Professional development of staff	2.630252	2.655462	+0.025210
137 Revision of the educational offer and of the development plan	2.525210	2.630252	+0.105042
139 Teaching staff evaluation	2.689076	2.710084	+0.021008

NOTES Column headings are as follows: (1) average external assessment score, (2) average internal assessment score, (3) average score's differences (internal – external).

eral over-valuation tendency on the part of school organizations (for a single descriptor the two perspectives – external and internal – are identical). The average scores show that the performance is situated between 'good' and 'very good.'

Therefore, a second level of analysis is mandatory and the results of the bilateral parametric tests outlined in table 3 led to the identification of two indicators for which the values of the parameters belong to the critical region (therefore, in their case, the null hypothesis is rejected), there being a significant difference between the average of the evaluation internal results and the average of the external evaluation results. These differences were expected, reflecting a national reality:

1. For the indicator 101, the differences are determined by different perspectives regarding the projective documents: (a) the external assessment (objective) analyses the degree to which a school organization's plan is original (non-duplicated), adapted to the context in which it operates, responding to real community needs and realistic (having associated measurable indicators); (b) the internal assessment (subjective) is particularly concerned by the existence of the document itself (respecting a certain format), although the content (targets, indicators etc.) are

TABLE 3 The Results of the Second Level of the Analysis

Performance indicators	(1)	(2)	(3)
101 The existence, the structure and the content of the projective documents (development plan and implementation plan)	0.390315	0.281477	−2.60
128 Evaluation of pupils' school results	0.308541	0.294488	−3.16
130 Scientific activity of teachers	0.577449	0.449262	−0.32
131 Methodological activity of teachers	0.270479	0.257344	0.53
132 Setting up the school budget	0.311295	0.307764	−0.99
134 Existence and implementation of institutional self-evaluation procedures	0.375415	0.350840	−0.45
136 Professional development of staff	0.300261	0.276252	−0.51
137 Revision of the educational offer and of the development plan	0.392222	0.308665	−1.93
139 Teaching staff evaluation	0.306687	0.247882	−0.43

NOTES Column headings are as follows: (1) dispersion value in external evaluation, (2) dispersion value in internal evaluation, (3) test z value. Authors own development using the significance threshold $\alpha = 0.05$ and the critical region for the test $(-\infty; -1.96) \cup [1.96; \infty)$.

not always realistic and/or adapted to the context in which the organization operates or the community it serves.

2. For the indicator 128, the differences are determined by different perspectives regarding focus of the teaching path (design, realization, evaluation) on the development of the practical – applicative side of the competences, on the students (as subject of the educational approach) and on the learning outcomes: (a) the external assessment (objective) analyses insurance/failure to develop the practical-applicative side of the competences (starting from the design of the curriculum, continuing with its realization – the development of the didactic activities – and ending with the assessment of the learning outcomes) and the systematic application/non-application of student-centered didactic methodologies; (b) the internal assessment (subjective) is particularly concerned by the designing of the new curriculum without taking into account that the overpopulation of certain student groups (as a result of the constant decrease of public expenditure in education) and the absence of new teaching practices (correlated with the new curricula) has led to an insufficient development of the practical – applicative side of competences, with effects on the participation rate and on the national exam results.

TABLE 4 Number of Issues Tracked (Out of the Total Number of Issues Tracked by the National Standards) and Number of Schools That Have Fulfilled All of the Descriptors in National Standards

Performance indicators	(1)	(2)
103 The existence and functioning of the internal and external communication system	1, out of 2	171 (71.84%)
130 Scientific activity of teachers	2, out of 2	110 (46.21%)
131 Methodological activity of teachers	2, out of 2	174 (73.10%)
132 Setting up the school budget	1, out of 2	171 (71.84%)
134 Existence and implementation of institutional self-evaluation procedures	2, out of 8	123 (51.68%)
136 Professional development of staff	3, out of 4	158 (66.38%)
137 Revision of the educational offer and of the development plan	2, out of 2	73 (30.67%)
139 Teaching staff evaluation	2, out of 4	171 (71.84%)

NOTES Column headings are as follows: (1) number of tracked issues out of the total number of descriptors in national standards, (2) number of schools that have fulfilled all of the descriptors in national standards (percentage).

Consequently, due to the significant differences identified, these two performance indicators and their tracked descriptors were further excluded from the analysis.

However, it must be taken into account that in national standards each performance indicator has several subsequent descriptors and only some of them were find (at a theoretical level) as being correlated with key-characteristics of SLO's organizations. Therefore, at this time, with this kind of data and this type of analysis only the minimum level of incidence of the tracked issues can be determined, by calculating the percentage of schools that have met all the requirements (all descriptors), including those that are correlated with key-characteristics of SLO's organizations. Table 4 presents for each performance indicator, the number of issues tracked by this research (out of the total number of issues tracked by the national standards) and the number of schools that have fulfilled all of the descriptors in national standards.

In this way, at sample level, the minimum levels of incidence of several key-characteristics of SLO's were determined, these varying between 30.67% and 73.10% as can be seen in table 5.

Conclusion

The experimental research is providing a preliminary overview on the state of affairs at the Romanian educational system level in relation to the model of SLO developed by Kools and Stoll (2017) and

TABLE 5 The Minimum Levels of Incidence of Several Key-Characteristics of SLO's at Sample Level

Dimension/characteristics		Tracked issues (descriptors) in national standards and the minimum level of incidence
2nd	Professional learning connects work-based learning and external expertise	Teachers participation in the scientific research activity carried out by the school or at local, regional, national or international level it has grown in number and percentage – 46.21%.
		Teachers participation in the methodological activities carried out at territorial level – with demonstration activities, presentations etc. – it has grown in number and percentage – 73.10%.
		The application in teaching activities of the participation's results in continuous training and professional development programs is systematically monitored – 66.38%.
		The application in teaching activities of the participation's results in methodological and scientific activities is systematically monitored – 66.38%.
	Professional learning is based on assessment and feedback	Observing the current activity and the feedback received from the relevant beneficiaries are used for the review of the professional development plans –66.38%.
		The assessment of the teaching staff is based on feedback from relevant stakeholders and –71.84%.
		The assessment of the teaching staff includes recommendations for further development –71.84%.
5th	The school development plan is evidence-informed, based on learning from self-assessment, and updated regularly	The benchmarking is used to optimize the educational offer and the development plan –30.67%.
		The staff and relevant stakeholders are involved in reviewing the educational offer and the development plan –30.67%.
	The school regularly evaluates its theories of action, amending and updating them as necessary	The results of self-evaluation and external evaluation are used to plan, carry out and review the quality assurance and improvement activities and procedures –51.68%.

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with the key-characteristics (key features) provided by 'What Makes a School a Learning Organisation? A Guide for Policy Makers, School Leaders and Teachers' document (OECD 2016).

From an experimental point of view, resulted that the minimum levels of incidence of several key-characteristics of SLO's could be identified, these varying between 30.67% and 73.10%, but only for three action-oriented dimensions – 'creating and supporting contin-

TABLE 5 *Continued from the previous page*

Dimension/characteristics		Tracked issues (descriptors) in national standards and the minimum level of incidence
6th	The school is an open system, welcoming approaches from potential external collaborators	The school systematically communicates with parents and other stakeholders –71.84%.
	The school collaborates with parents/guardians and the community as partners in the education process and the organization of the school	The school ensures the involvement of community partners and relevant stakeholders in budget planning –71.84%. The self-evaluation procedures are carried out with the participation of relevant stakeholders – 51.68%.
	Staff collaborate, learn and exchange knowledge with peers in other schools through networks and/or school to-school collaborations	Teachers capitalize on teaching the results of the scientific research activity carried out at local, regional, national or international level –46.21%. Teachers capitalize on teaching the results of the methodological activities carried out at local level –73.10%

uous learning opportunities for all staff,' 'embedding systems for collecting and exchanging knowledge and learning' and 'learning with and from the external environment and larger learning system.' At this point, it cannot be determined whether these schools act fully or not as learning organizations, but the results demonstrate that in some respects they develop key features of SLO; and this may be the foundation for a smooth implementation of the model at national level.

The limitation of this paper is given by the fact that the data were collected from the external and internal evaluation of 238 schools (in order to determine the level of educational services offered), means not specifically devoted to identifying SLO characteristics. However, another in-depth analysis, staff dedicated and focused on all action-oriented 'dimensions' is scheduled and will be provided in the next period.

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