

THE CONCEPT OF LEARNING-BY-DOING IN THE CONTEXT OF MEDIA EDUCATION AND SCHOOL QUALITY ASSESSMENT

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ABSTRACT:

The study deals with an investigation of the results of the evaluation of the quality of Slovak secondary schools, with a specific focus on identifying differences between schools that publish a school magazine and schools that do not publish a school magazine. The research sample consisted of a total of 519 secondary schools from all parts of Slovakia, which were evaluated on the basis of 45 indicators based on data from various data sources. As a part of our research study, we worked exclusively with the most up-to-date data relating to secondary schools, obtained from the school year 2018/2019. Our study focuses on a research issue that is whether the existence of a school magazine in any way affects the results of an overall school quality assessment or not. The final data set that we subjected to statistical testing (N = 160) consisted of 80 schools that have a magazine and 80 schools that do not have a magazine. The research hypothesis was statistically evaluated using the Pair test. We accepted the alternative hypothesis, according to which the evaluation results of schools that publish a school magazine are statistically significantly different from schools that do not publish a school magazine. The findings of the research study point to the significant benefit of the existence of the learning-by-doing concept in school practice and point out that the experiential form of learning is effective.

KEY WORDS:

LEARNING-BY-DOING, media education, media literacy, school assessment, school magazines, school media

Introduction

Media education seeks to increase social awareness of the issues of media, media content and the media world. One of the basic goals is to learn to critically evaluate the media, to correctly interpret media content and to help the percipient better orientate in the complex structured world of the media.¹ It is a systematic and

¹ BRESTOVANSKÝ, M.: *Úvod do mediálnej výchovy*. Trnava: Trnava University, 2010, p. 16.

complex process that aims to develop an individual qualitative change known as media literacy.² Under the conditions of the Slovak Republic, media education in the school environment is realised in three basic forms. First, it may be a separate subject that is integrated into the curriculum and plans of the school concerned. In this form, it works primarily on a critical-reflective basis, with the main target being to provide a theoretical background from media studies, sociology and media psychology, as well as other scientific disciplines. Based on the acquired knowledge, students realise a critical reflection of different media content, using various activating methods of learning, including discussions, brainstorming, role-playing and the like. The second form of media education integration into teaching is cross-curricular approach. Within this approach, various topics, elements and activities in the field of media and working with information are included in the curriculum of individual subjects. This can be illustrated by the example of the subject of Informatics, where students can get acquainted with issues of Internet security, spams, hoaxes, etc. Within subjects dealing with social and political topics, media education can focus on disinformation, hybrid threats, the impact of the media on parliamentary elections and democratic processes in society. The third way in which media education elements can be included in the curriculum is project-based learning. It is implemented in the school environment through the integration of students into the creation and management of media content – mostly school magazines, in some cases it is a school radio, blog, school *YouTube* channel or publishing media content via social media (*Facebook*, *Instagram*, etc.). This kind of integration of media education into the educational process is based on the concept of learning-by-doing and is applied through the personal experience or experience of the learner of specific work with media content and media technologies.

Learning-by-doing offers opportunities for learning how to manage the full complexity of a real domain, at least when the learning tasks are of the same difficulty and complexity as the harder tasks posed in real life.³ *Under the influence of digitalisation and convergence, the nature of media, the ways of accessing and handling the communicated information content, the quality of user interactions in the media (or digital space) have changed, inspiring a revision in the approaches to contemporary media education.*⁴ The concept of “learning-by-doing” is applied to the teaching of media education through the personal experience or experience of the pupil of particular work in the media. This educational model, when properly implemented, can contribute to the development of competence and soft skills that students acquire and consequently can use not only in the production of media content but also in their study lives and career plans. This concept is based on the assumption that students are best acquainted with the media if they are directly involved in their creation. In preparation and participation in practically based teaching, students must react creatively, individually and quickly to situations, learn to cooperate, plan, manage different processes, develop critical thinking and creativity. The processing of individual media content develops the ability to search, select and analyse information sources, to argue, verify facts, but also to manage work under time pressure and share the responsibility with others for achieving the planned goal.

“School media” can be characterised as different types of platforms that are used by people from the school environment and are intended primarily for the internal audience. From this, we conclude that the school media designate a complex of activities, means and possibilities to improve teaching in all subjects, but it is also a form of innovation of the educational process initiated by the educator. Goldfarb suggests that the potential strength of such a form of teaching media competence empowers students and increases their level of interactivity and critical thinking. These types of media can work alongside schools, boarding schools, student organisations or groups of students with similar interests. These media are primarily created and operated by young people who may or may not be guided by a school teacher or person in charge.⁵

Burn and Durran use the term “educational media production” in this context. This is a non-communication platform in print, digital or audio-visual form. Its primary audience consists of the students

and educators of the school, and the secondary, the larger local community. A prerequisite for a true audience is that the participants anticipate the interests, needs and desires of the audience. They should learn to perceive the audiences as social groups that differentiate them from the closest contexts of media consumption, especially the family and peers.⁶

*“The use of media products and works of art involves a lot of closely intertwined aspects.”*⁷ From the historical point of view, the most frequent way of the practical concept of teaching media education in schools is the creation of a school magazine. *“In order to gain a better understanding of the process of the creation of school magazines, it is necessary to realize for whom these periodicals are intended, what are their functions and who creates them, since the specificities and possible deficiencies in the creation of these journalistic units are derived.”*⁸ The advantages are low-tech equipment, the experience of some teachers with written words (especially teachers of mother tongue and foreign languages), experience of students, but also teachers who publish various types of content on social networks. In addition, in this form of learning-by-doing, participants learn to critically access information sources and assess the quality of media content created by their peers. Through the practical preparation of authentic news stories, it is possible to better understand the essence of the journalistic profession and the fact-checking process: *“The growing generation should be prepared to live and survive in the information society; should be aware of their rights and benefits in this society, including potential harms and risks, and ways of safe behaviour and self-defence in the digital world.”*⁹

The concept of “learning-by-doing” has been present in society since the inception of the philosophical direction of pragmatism, in which the American philosopher Dewey proposed the experiential form of learning and acquiring so-called learning experiences. According to Dewey, education should be based on an experiential form, because it is necessary for an individual to have their own life experience.¹⁰ The concept of “learning-by-doing” and the experiential form of education has been known in the educational environment practically since the end of the 19th century, but nowadays it is gaining importance in the field of media education. This type of education is conceived on diverse possibilities of personality development and has various advantages in preparing students to meet the current challenges of late modern society. In this context, it is necessary to emphasise the importance of active interconnection with other objects of life reality, which supports the action-driven character of teaching and active work with the media.¹¹

Media education should not be aimed at finding the right answers, but rather at trying to teach students to formulate the right questions. *“Practice-centred teaching and learning about media is a concept of media education centred on practical or reflexive-practical knowledge and acquirement of media in the reshaping action of the learner. This type of learning involves developing the pupil’s conative potential in interacting with media, which become the object of targeted learning, as well as tools of self-expression of the subject (through creative media creation) in a participatory-communication media process set in a social context.”*¹² The media environment of today is very complexly structured, full of often contradictory and controversial phenomena, which are increasingly difficult to grasp comprehensively and not to succumb to cognitive distortions. This is all the more important for the concept of “learning-by-doing”, whose primary objective is not just to convey factual knowledge, but rather to look at information from different perspectives, analyse it and discuss the role of the media in the life of the individual and society. Students’ work in the school media develops *“knowledge that can be transferred or applied in new situations. This transferable knowledge includes knowledge about*

2 For more information, see: VRABEC, N.: *Stratégie rozvoja mediálnej gramotnosti v európskych krajinách*. Trnava : UCM in Trnava, 2014.

3 LESGOLD, A., NAHEMOW, M.: *Tools to Assist Learning by Doing. Achieving and Assessing Efficient Technology for Learning*. Pittsburgh : Learning Research and Development Center, University of Pittsburgh, 2005, p. 2.

4 KAČINOVÁ, V.: From a Reductionist to a Holistic Model of Digital Competence and Media Education. In *Communication Today*, 2019, Vol. 10, No. 2, p. 19.

5 GOLDFARB, B.: *Visual Pedagogy: Media Cultures in and Beyond the Classroom*. Durham : Duke University Press, 2002, p. 13.

6 BURN, A., DURRAN, J.: *Media Literacy in Schools: Practice, Production and Progression*. London : Paul Chapman, 2007, p. 59.

7 RADOŠINSKÁ, J.: Omnivore vs Univore: A Reflection on the Current Knowledge on Cultural Taste and Cultural Consumption. In *European Journal of Media, Art & Photography*, 2018, Vol. 6, No. 2, p. 98-99.

8 PROSTINÁKOVÁ HOSSOVÁ, M., ŠVECOVÁ, M.: Challenges and Limits of Current Student Magazine Production – Case Study. In *Media Literacy and Academic Research*, 2019, Vol. 2, No. 2, p. 35.

9 MIKHALEVA, G.: Media Culture and Digital Generation. In *International Journal of Media and Information Literacy*, 2016, Vol. 2, No. 1, p. 118.

10 For more information, see: DEWEY, J.: *Democracy and Education*. Philadelphia : Pennsylvania State University, 2001.

11 Compare to: ANFANG, G., UHLENBRUCK, G.: *Medien selber machen bildet – Aktive Medienarbeit. Medien bilden – aber wie? Grundlagen für eine nachhaltige medienpädagogische Praxis*. München : Kopaed, 2009, p. 105-110.

12 KAČINOVÁ, V., ŠABADA, C.: Analysis of the State of Practice-centred Teaching and Learning about Media at Slovak Schools – Selected Examples of Good Teaching Practice. In *Media Education (Mediaobrazovanie)*, 2019, Vol. 59, No. 4, p. 482.

content in the field, as well as process knowledge on how, why and when to apply this knowledge to answer questions and solve problems.”¹³ This process includes an important creative component – acquiring practical creative skills of working with media materials.¹⁴

Research Methodology

The main method of this research study was the detailed structural analysis of the results of the evaluation of the quality of Slovak secondary schools, with a specific focus on identifying differences between those schools that have a school magazine and those that do not. The research sample consisted of a total of 519 secondary schools from all over Slovakia, which were evaluated on the basis of 45 indicators based on data from various institutions – in particular the National Institute of Certified Measurements of Education, the Ministry of Education, Science, Research and Sport, the Institute of Information and Forecasting of Education, the State School Inspectorate and the Labour Offices. Since 2012, comprehensive data on the results and quality of schools has been regularly collected and evaluated by the Institute for Economic and Social Reforms (INEKO). Data sources concern all Slovak primary and secondary schools. However, as part of our research study, we worked exclusively with the most up-to-date data relating to secondary schools and obtained from the school year 2018/2019. The basic principles of the resulting evaluation of school quality are as follows:

- The assessment of the area will be generated as one-tenth of the weighted average of sub-assessments over the past 4 years.
- The sub-evaluation of each area is given as a weighted average of the evaluation of all indicators in the area.

The rating of the indicator is given as:

Rating = $\min(10, \max(0, 10 * (\text{indicator value} - \text{reference minimum for schools of a given type}) // (\text{reference maximum for schools of a given type} - \text{reference minimum for schools of a given type}))$

This means that if the calculated score is negative, it is adjusted to 0, and vice versa, if the calculated score is greater than 10, it is set to 10. The rating of each indicator is ultimately a number from 0 to 10 and the higher the number achieved, the better the rating. For the purposes of our research study, we have formulated the following hypothesis:

Secondary schools that have a school magazine achieve better quality evaluation results than secondary schools that do not publish a school magazine, and this difference is statistically significant.

Out of a total of 519 evaluated schools, we chose the 80 best-rated schools that publish a school magazine and 80 best-rated schools that do not publish a school magazine for our study. We chose this approach because the existence of the school magazine is not present as a separate indicator in the source research data and does not participate in the overall assessment. For this reason, it was necessary to discover about the research sample we selected (N = 160) whether or not the schools in question were publishing a school magazine. Subsequently, we compared the resulting evaluation coefficients obtained by these schools. Schools from all regions of Slovakia were equally represented in the research sample.

Our study focuses on a research issue that is whether the existence of a school magazine affects in any way the results of an overall school quality assessment. The data set that we subjected to statistical testing (N = 160) consisted of 80 schools that have a magazine and 80 schools that do not have a magazine. The research hypothesis was statistically evaluated by use of a Pair test.

13 PELLEGRINO, J. W., HILTON, M. L.: *Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century*. Washington, DC: The National Academies Press, 2012, p. 23.

14 Compare to: FEDOROV, A., LEVITSKAYA, A.: Comparative Analysis of the Indicators' Levels of Students' Media Competence Development in the Control and Experimental Groups. In *International Journal of Media and Information Literacy*, 2017, Vol. 2, No. 1, p. 16-37; FEDOROV, A.: Schools and Universities in Audio-visual Media: Expert's Opinion. In *Communication Today*, 2019, Vol. 10, No. 1, p. 110-122; HOSSOVÁ, M.: Fake News and Disinformation: Phenomena of Post-Factual Society. In *Media Literacy and Academic Research*, 2018, Vol. 1, No. 2, p. 27-35.

Research Results

Within the chosen methodological procedure of the research study, we formulated statistical hypotheses, which we divided into zero and alternative. This is an argument concerning the probability distribution of the observed trait or its parameters. The null hypothesis states that those variables that are the subject of our testing are independent of each other and that there are no statistically significant differences between the two groups of schools. The alternative hypothesis, on the contrary, assumes the presence of statistically significant differences, i.e. that the investigated variables in the population are related. The choice of an alternative hypothesis depends on the particular situation. To test the null hypothesis against the alternative hypothesis, a suitable test criterion should be used.

The degree of dependence between variables is characterised by the tightness rates of statistical dependence. These are within a fixed interval and within this interval they increase with the degree of dependence. They are independent of the magnitude of the characters to be examined and the units used. This makes it possible, by their size, to directly judge the degree of dependence and to compare the tightness rates of statistical dependence for different statistical sets. In hypothesis testing, we wondered whether there was a statistical link between the observed traits and, if so, what its degree is. If the two types of traits examined are of the same nature, their statistical relationship can be expressed using a paired test.

The null and alternative hypotheses were as follows:

H0: The evaluation results of schools that publish a school magazine are not statistically significantly different from schools that do not publish a school magazine.

H1: The evaluation results of schools that publish a school magazine are statistically significantly different from schools that do not publish a school magazine.

The test compares the averages of the same items under two different conditions or in any other connection between two samples if there is a connection between the samples. The test uses the t-distribution.

Table 1: Description of the paired T-Test values

Description	Values
One-tailed or two-tailed hypothesis?	Two-tailed hypothesis
Significant level (0 – 1), maximum chance allowed rejecting H0 while H0 is correct (Type I Error)	0.05
Standardised Effect Size (The test is expected to identify this effect. If one exists, H0 will be rejected. Standardised effects examples (0.1 – small effect, 0.3 – medium effect, 0.5 – large effect)	0.15
Group1 contains:	80 values
Group2 contains:	80 values
Hypotheses	H0: $\mu_d = \mu_0$ H1: $\mu_d \neq \mu_0$

Source: Own processing

Result of Test: The difference between the averages of the groups is big enough to be statistically significant (at 0.05 significance level). Since p-value < α (0.05), then H0 is rejected. We accept the alternative hypothesis H1, according to which the evaluation results of schools that publish a school magazine are statistically significantly different from schools that do not publish a school magazine.

Table 2: Description of the paired T-Test results

Difference Scores Calculations:	Mean (μ):	-0.7
	μ	0
	$S^2 = SS/df = 24.25/(80-1)$	0.31
	$S^2_M = S^2/N = 0.31/80 = 0$	0
	$S_M = \sqrt{S^2_M} = \sqrt{0} = 0.06$	0.06
T-value Calculation	$t = (M - \mu)/S_M = (-0.7 - 0)/0.06$	-11.280429
The Two Tails p-value	$p(x < -16.114898571428572)$ $+ p(x > 16.114898571428572) = 0.00000$	0.00000
Standard Deviation (SD)		0.8453198
Degrees of Freedom (DF)		159

Source: Own processing

Table 3: Description of the average rating of schools

REGION	Average rating of schools that publish the magazine	Average rating of schools not publishing a magazine
Bratislava	8.13	6.52
Košice	7.38	6.27
Nitra	7.31	6.74
Prešov	7.23	6.51
Trenčín	6.87	6.16
Trnava	6.85	6.57
Žilina	6.88	6.85
Total average value:	7.1	6.4

Source: Own processing

Discussion and Conclusion

The principle of an objective, universally valid world is a fundamental part of the educational model on which the school curriculum is based.¹⁵ The practice-oriented learning process supports the development of life skills that are essential to promote the well-being and ability of young people to face the reality of life in society. A practical approach adds to the quality of the school and allows students to meet the challenges of society.¹⁶ The aim of our research study was to find out how the concept of “learning-by-doing” is applied in the context of media education in selected schools in Slovakia and whether the existence of a school magazine has a link with qualitative parameters of educational institutions. One of the reasons for this research concept is that the proposed approach is “widely applicable in socio-cultural reality”.¹⁷ The brief theoretical and empirical

15 BACHMAIR, B.: Exploring Writing in a Digitally-Dominated Culture – Options for Formal Learning in Schools. In *Media Education (Mediaobrazovanie)*, 2019, Vol. 59, No 3, p. 339.

16 SOMASUNDARAM, T.: Effectiveness of Life Skill Training (Education) Program: A Study with Reference to Management Students at Bangalore. In *Research Guru – Online Journal of Multidisciplinary Subjects*, 2018, Vol. 12, No. 1, p. 937.

17 BUČKOVÁ, Z.: Typology of Game Principles in Digital Games: A Case Study of Mafia III. In *Acta Ludologica*, 2019, Vol. 2, No. 1, p. 52.

reflection on the effectiveness of the concept of “learning-by-doing” in the context of media education can contribute to a better understanding of the role of school magazines in the curriculum, school management and quality policy. In this context, learning-by-doing is an appropriate part of both formal and non-formal learning that takes place in “school settings, through students learning important cultural norms and social skills”.¹⁸

Based on the results of statistical testing of the obtained data, which takes into account various indicators of school quality, it can be concluded that the analysed measures have a significant impact on the quality of the educational process. The findings of the research study point to the significant benefit of the existence of the “learning-by-doing” concept in school practice and prove that the experiential form of learning is effective. Practice-based learning has both motivational and cognitive benefits. Practitioners or mentors support students’ ability to productively solve problems and maximise results by providing feedback and recommendations.¹⁹ Individualised instruction has both motivational and cognitive benefits. For example, tutoring makes students to feel more competent.²⁰

We plan to verify the complexity of the results of our research with other research probes of a qualitative nature. They will focus on concrete forms of participation of students and teachers in terms of editing and publishing a school magazine. Subsequent research will aim to identify and analyse the principles of management and functioning of such media, the possible form of financial support for the school media and the importance of the personality of the teacher responsible for the creation and form of media at the school. It is also important to verify the links between theory and action by making sure that, in practical activities, the educational processes involve a cyclical sequence of learning activities.²¹ In the next phases of the research it will be important to find out the motives of the students, why they are involved in such form of interest activity through the concept of “learning-by-doing”, and what they have experienced and is of benefit for their lives. In addition, it will be possible to verify what key competence students acquire by participating in the activities related to the school media.

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18 BIRDWELL, J., SCOTT, R., KONINCKX, D.: *Learning-by-Doing*. London : Demos, 2015, p. 28.

19 See: MERRILL, D. et al.: Tutoring: Guided Learning by Doing. In *Cognition and Instruction*, 1995, Vol. 13, No. 3, p. 315 - 372.

20 Compare to: LEPPER, M. R., CHABAY, R. W.: Socializing the Intelligent Tutor: Bringing Empathy to Computer Tutors. In MANDL, H., LESGOLD, A. (eds.): *Learning Issues for Intelligent Tutoring System*. New York : Springer-Verlag, 1988, p. 242-257.

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