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PEDAGOGICAL EVALUATION PHASES – LESSON STUDY SURVEY

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Abstract

The results of international cooperation in the field of vocational education and training are reported in the Erasmus+ international project LS4VET (Lesson Study for VET, 2021) and the implementation of the lesson study theory of Stigler and Hiebert has been explored. Our pilot lesson study on classroom evaluation in primary schools fits into this line of research and explores further aspects of the theory. The project was launched in Hungary, in the academic year of 2021/2022.
Our action research was conducted in the fields of sciences, humanities, and physical education in Grades 5–8. We wanted to find out how assessment methods and tools in these areas are adapted to the age group, the situation, and the curriculum. We must highlight that the focus of the project was not on the measurement of the growth of the learners' learning ability, but rather on the teacher-student-student interactions. During the research, different lessons and lesson segments were visited and video recorded, then discourse analysis (Burgess and Cargill, 2013) – a new approach to content analysis – was applied to investigate the evaluation methods in the lessons.
Our main research questions are: (1) What are the consciously used evaluation methods? (2) What is the distribution of the evaluators? (3) Are there subject or science specific tools applied in the evaluation process? (4) How personal, supportive, and tactful is the evaluation? (5) What is the quality and quantity of verbal and non-verbal feedback? (6) What activities are emerged to support learners' self-evaluation skills?

Keywords: *Lesson study, discourse, evaluation.*

1. Introduction

Education efforts cannot be effective unless the theoretical findings of educational research are put into practice. The way to bring theory and teaching practice closer together is for educational research in universities to focus on public education and to seek relevant answers to the problems it faces. As long as this does not happen, the education system, without the incorporation of research-based knowledge, will only reproduce the shortcomings of previous periods. To avoid this and to achieve valid results (Brookfield, 1995; Carr, 1986; Lister, 2008), modern educational research needs to be evidence-based and scientifically sound. In this paper, we follow Shavelson and Towne's (2003) principles of scientific research in education in asking empirically testable research questions. We link research from the practice of teaching to relevant theory, offer methods replicable by others accompanied with arguments, present our non-representative sub-results for public peer review. In general, our pilot research findings can form the bases for further studies in lesson study (jugyokenkyu) (APM, 2015; Corey, 1953; Gambhir, 2019; Lewis, 2002; Yoshida, 1999) research on the subject of classroom evaluation.

2. Lesson study

Teachers, working groups, and teaching staff at a school often face similar or identical practical problems. Once problems are identified, members of the teaching team may be interested and motivated to solve them together. Teachers, primarily through peer learning, seek solutions and try to build up usable knowledge (Wenger et al., 2002). The leaders of the school can play various roles in this process. On the one hand, they can initiate collaborative thinking. On the other hand, they can provide support to those teachers who approach them. This support can be in the form of an intellectual agreement, but also in the form of concrete practical, material research support.

The expectations and difficulties of teachers' work are constantly changing, and their pedagogical knowledge must change in parallel. Today, teachers can no longer rely on old routines, tried and tested procedures, because if they do, they may very quickly face failure in their daily work. The triad

of *what, why, how* I do in the classroom requires constant attention, self-evaluation and necessary adjustments to the methods used. Meanwhile, it is worth consciously managing the teacher's self-image, self-efficacy (Chen, 2015) and professional development. The ability to observe, analyze and evaluate is a fundamental requirement of the teaching profession. This continuous evaluative attitude, professional attention and reflection is effective when it is based on data and classroom research (Hattie, 2012; Lister, 2008). In their primarily informal meetings, teachers often talk about what they experience in the classroom, but it is less common for them to build up plan(s) for measuring the effectiveness of the teaching method (Lister, 2008). This purposeful and intentional shared reflection can be the professional reflection, action-teaching research that, linked to teaching to achieve a particular goal, can produce knowledge that connects theory to practice in a structured way, capable of change and improvement.

Schön (1983) characterizes reflection as a kind of experiment in which the role of reflection is none other than to enable a dialogue between the reflector and the problematic situation. He emphasizes the importance of the problematic situation and its characteristics, arguing that true reflectivity is only evoked by a problem situation that affects the individual emotionally. His assertion that what distinguishes the 'expert' from the 'novice' or 'experienced' is the way in which the expert, using his theoretical and practical knowledge, frames the problem using the cognitive structures and schemas at his disposal, can be seen as a precursor of cognitive psychology. These finding are complete accordance with Hattie's results published in his well-known book entitled *Visible Learning for Teachers: Maximizing Impact on Learning* (2012).

In our opinion, the method of action research provides an opportunity to identify and deal with problems emerged during classroom activities. In this context, reflection can be defined as a way of thinking that involves the ability of the teacher to choose rationally between ways of solving problems and to take responsibility for their choices. In action research, reflexivity is a guiding tool that teachers use to argue for methods that are considered effective by the members of the research team. In such a case, reflexivity is an informing tool: through trial and error, effective teaching theories and methods are jointly evaluated according to teachers' own experiences and their students' prior experiences and background knowledge. In this way, reflexivity shapes collective thinking about the teaching-learning process, while organizing and reorganizing experiences in relation to the interpretation of a given situation.

Collaboration plays a key role in the process of productive learning. Of all the ways of organizing learning, the collaborative group work is one of the most accepted ways for sharing the responsibility of solving a task. According to Juknat (1937), success might increase the pace of work and performance, require increasingly difficult tasks, and develop appropriate social contact during the activity, while the effect of failure is the opposite. For teachers, we want to demonstrate, through lesson study research, how becomes part of their pedagogical culture what they learn in personal interactions working cooperatively in a professional community.

3. The role of classroom evaluation in a lesson study

3.1. The research group

The research group was formed at the University of Debrecen Teacher Training Elementary Schools in the academic year of 2021/2022. The team consisted of four teachers at the school of various school subjects: informatics (computer science), history, physical education, and Hungarian literature. Considering the students, Grades 5–8 are involved, students of 11–15-year-old. The advisor of the team was a research teacher with a PhD in pedagogy, who is a teacher at the school.

The primary consideration of the research was classroom assessment. In the preparation phase, primarily the advisor researched the literature on the topic of classroom assessment and shared her findings with the team. Later on, the theoretical background was discussed in meetings with the other members of team, and the lessons were selected to be involved in the research. The lessons were planned individually by the members of team, without any further discussions. Each member decided on their own which lesson could best serve the goals of the planned lesson study research.

3.2. The lessons

The research lesson in Hungarian literature was video recorded first, in December 2021. After the first lesson, a meeting was arranged to discuss the experiences and to plan further classes. At the beginning of January, the recoding of a lesson of informatics took place. Later on, relevant sections of lessons of history and physical education were recorded. Our research data and results were generated form the evaluation of the visited lessons. We were interested to see how the assessment methods and tools in these subjects fit the age group, the situation, and the curriculum. We did not measure the development of the students' learning ability, but rather focused on the teacher-student, student-teacher, and the student-student interactions.

4. Research questions

The following research question were formulated on the subject of classroom assessment.

- What types of assessment are consciously used?
- What is the distribution of those who carry out the classroom assessment?
- How personal, supportive and tactful is the evaluation?
- What is the quality and quantity of verbal and non-verbal feedback?
- What activities are organized to support learners' self-evaluation skills?

Based both on the materials collected and developed for the lessons and on the video records, the evaluations of the lessons were carried out by using corpus analysis. Corpus analysis within the field of content analysis is a relatively novel approach in pedagogical research, primarily borrowed from corpus linguistics and adapted to lesson studies (Burgess and Cargill, 2013).

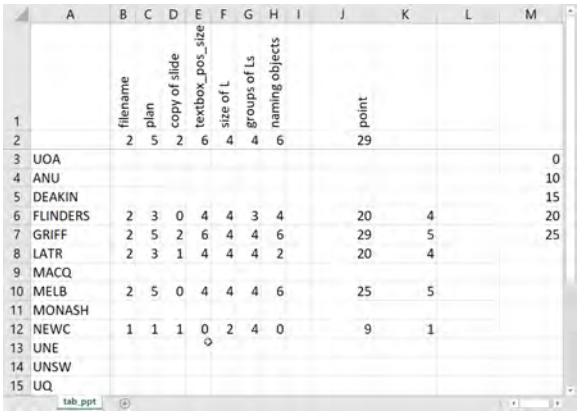
5. Results

The conscious use of external, summative, qualitative assessments was present in the traditional subjects. The teacher gave the students marks in Hungarian literature (poetry recitation), history (presentation), and physical education (presentation). In these observed lessons, mainly the teachers did the evaluation but there was an increasing tendency towards internal, developmental assessments. In connection to these presentations that type of developmental assessment was tracked where – in addition to the teacher's descriptive, text assessment – the students also reflected on the performances in the forms of pair and self-assessment. In the evaluation process, the teachers' behavior rather preserved the deviation from the norm verbally, e.g., the PE teacher warned those students who did not pay attention to the presenter. However, in almost all cases, the students' self- and pair-assessment expressions were accompanied by motivating non-verbal means.

The informatic lesson was different from the others in the sense that both the teacher and the students used digital contents and tools to carry out evaluation. At the beginning of the class the teacher presented the student's results on an optional homework in an Excel-worksheet which the students were familiar with (Figure 1). The worksheet was composed of the following contents:

- the task broken down into meaningful items along with the maximum points for each item
- the sum of the collected points, calculated with the SUM() function, in case the homework is handed in (cell J3 and copied to the other cells J4:J15): =IF(B3="","",SUM(B3:H3))
- the range of points for calculating the marks (array M3:M7)
- the marks computed with the binomial search algorithm by calling the MATCH() function (array K3:K15): {=IF(B3:B14="","",MATCH(J3:J14,M3:M7))}

Figure 1. The evaluation sheet used in informatics lesson.



	A	B	C	D	E	F	G	H	I	J	K	L	M
1		filename	plan	copy of slide	textbox_pos_size	size of L	groups of Ls	naming objects		point			
2		2	5	2	6	4	4	6		29			
3	UOA												0
4	ANU												10
5	DEAKIN												15
6	FLINDERS	2	3	0	4	4	3	4		20	4		20
7	GRIFF	2	5	2	6	4	4	6		29	5		25
8	LATR	2	3	1	4	4	4	2		20	4		
9	MACQ												
10	MELB	2	5	0	4	4	4	6		25	5		
11	MONASH												
12	NEWC	1	1	1	0	2	4	0		9	1		
13	UNE												
14	UNSW												
15	UQ												

tab_ppt

After presenting the points and marks, the students had to opportunity to decide whether they accept the afford mark or not. This method of evaluation with the presented items and the automated calculation in spreadsheet workbooks can be adapted to any other subjects.

Group work was organized to support self-assessment in the visited lessons and class sessions, developing personal competences, like cooperation, conflict management and self-assertion. The research results could confirm the observers that modern assessment is no longer "training" but motivating, criterion-oriented competence development. It is not a ranking system, but a cooperative work for the development of students, where the narrative develops personal competences that encourage improvement, a realistic self-image, cooperation, conflict management, self-assertion.

In the informatics lesson the Error Recognition Model (Sebestyén et al, 2022) was applied, where the correctness of a digital text was carried out in groups. The students were familiar with the method because they had already practiced it with different contents. They should analyze the text, discuss the findings, decide on the errors, mark and provide descriptions of them by using the Comment tools and the accompanied comment boxes of Acrobat Reader (Figure 2). Finally, each group must upload one file into the Moodle system of the school. After uploading the files with the marked errors, a teacher conducted class-level reasoning, arguing, and discussion started to decide which group' idea was correct. A competition for collecting points started. One of the advantages of this method is that it can be applied to any text-based document regardless of the content and the subject, as it is considered as a fundamental digital skill for everyone and required in the National Base Curriculum (OFI, 2020).

Figure 2. The marked errors in the sample file.

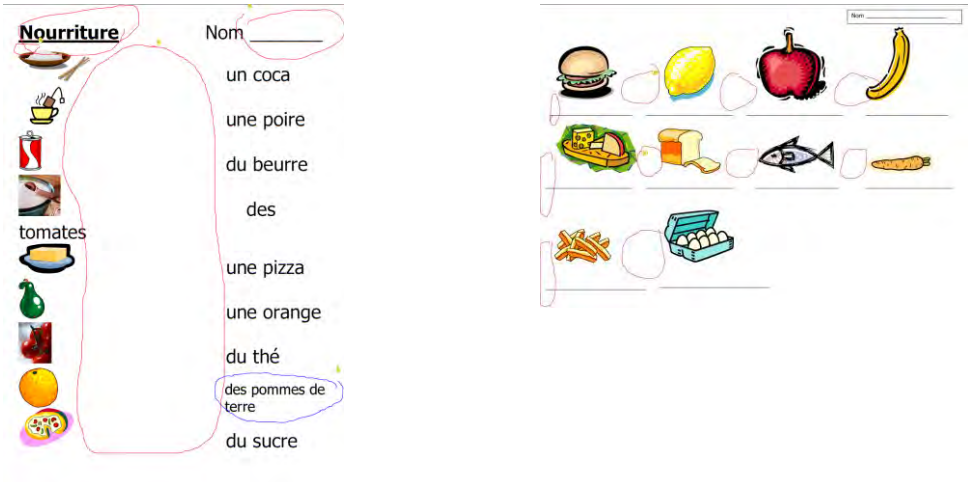


Table 1. Methods and aims of evaluation in the visited lessons.

Methods	Aims
Informatics	
collecting points	motivating
uploading products	measuring practical application
optional homework	students decide on accepting or rejecting the marks
homework	practicing, building up knowledge, original plans and solutions
digital-text error recognition (group work)	shared decision making, practice-oriented, student-reflection, reasoning
Hungarian literature	
poem recitation self- and pair-assessment, with teacher assessment	developmental and motivating
homework	individual solutions, words of acceptance
presentations with self- pair-assessment and teacher assessment	competence development
group work	assessment of product and cooperation
reflection on the lesson as a whole	reflection, reasoning
History	
presentations with self- pair-assessment and teacher assessment	building a realistic self-image, developmental tasks
Physical Education	
presentation with self- and teacher assessment	building self-confidence, sharing information

6. Summary

The significance of this research for the field of education is that we have provided an example to support the enhancement of organizational knowledge through targeted means. In doing so, we have also provided a model for various teaching-learning experiences. (1) Developing a researcher method, where the focus is not on individual goals, but on the shared learning goals of small research communities of 4–6 people. (2) Identifying problems that arise during the teaching-learning process; exploring possible solutions; developing knowledge together; and then testing it in practice. The research approach is a way

of linking theory and practice and sharing ideas between school subjects and sciences. It is a way of learning the skills of the teaching profession, of deepening the understanding of the specialties of the age group and further educational actors, while analyzing and revising their own responses to school situations. The method can help teachers to deal more effectively with new challenges, allowing them to develop their self-reflection and to broaden their methodological culture. Our research thus contributes to more effective schools and quality education.

References

APM (2015). A different approach to teacher learning: Lesson study. APM Reports. Accessed 24. 01. 2022 from https://www.apmreports.org/episode/2015/08/26/a-different-approach-to-teacher-learning-lesson-study.

Brookfield, S. (1995) *Becoming a Critically Reflective Teacher*. San Francisco: Jossey-Bass.

Burgess, S., & Cargill, M. (2013). Using genre analysis and corpus linguistics to teach research article writing. In V. Matarese (Ed.), *Supporting Research Writing: Roles and Challenges in Multilingual Settings*. Cambridge: Woodhead Publishing Limited.

Carr, W., Kemmis, S. (1986). *Becoming critical: education knowledge and action research*. Lewes: Falmer Press.

Chen, J. A., Morris, D. B. & Mansour, N. (2015). Science Teachers' Beliefs. Perceptions of Efficacy and the Nature of Scientific Knowledge and Knowing. In *International Handbook of Research on Teachers' Beliefs*. (Eds.) Fives, H. & Gill, M. G. Routledge, pp. 370–386.

Corey, S. M. (1953). Action research to improve school practices. Teachers College Columbia University, New York.

Gambhir, V. (2019). Learn with colleagues through jugyokenkyu. Accessed 24. 01. 2022 from https://www.monday-8am.com/learn-with-colleagues-through-jugyokenkyu/.

Hattie, J. (2012). *Visible Learning for Teachers: Maximizing Impact on Learning*. Routledge.

Juknat, M.(1937). Leistung, Anspruchsniveau und Selbstbewusstein. *Psychologische Forschung*, 22, 89- 179.

Lewin, K. (1946). Action research and minority problems. *Journal of Social Issues*, 2, 34-46.

Lewis, C. C. (2002). *Lesson study: A handbook of teacher-led instructional change. Research for Better Schools*, Philadelphia.

Lister, R. (2008). After the gold rush: Toward sustainable scholarship in computing. In *ACE '08: Proceedings of the tenth conference on Australasian computing education*. vol. 78, 2008, pp. 3–17.

OFI (2020), National Base Curriculum 2020. In Hungarian: 5/2020. (I. 31.) Korm. rendelete a Nemzeti alaptanterv kiadásáról, beveze-téséről és alkalmazásáról szóló 110/2012. (VI. 4.) Accessed 24. 01. 2022 from http://ofi.hu/sites/default/files/attachments/mk_nat_20121.pdf.

Schön, D. (1983). *The Reflective Practitioner*. Temple Smith, London.

Sebestyén, K., Csapó, G., Csernoch, M. & Aradi, B. (2022). Error Recognition Model: High-mathability End-user Text Management. *Acta Polytechnica Hungarica*, Vol. 19, No. 1, pp. 151-170.

Shavelson, R. J., Towne, L. (Ed.) (2003): *Scientific research in education.* National Academy Press, Washington.

Stigler, J. W., & Hiebert, J. (1999). The Teaching Gap: Best Ideas from the World's Teachers for Improving Education in the Classroom. Free Press.

Stigler, J. W., & Hiebert, J. (1999). *The teaching gap: Best ideas from the world's teachers for improving in the classroom*. New York: The Free Press.

Wenger, E., McDermott, R. & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Harvard Business School. Accessed 24. 01. 2022 from http://hbswk.hbs.edu/archive/2855.html.

Yoshida, M. (1999). Lesson study [Jugyokenkyu] in elementary school mathematics in Japan: A case study.Paper presented at the American Educational Research Association (1999 Annual Meeting), Montreal, Canada.