Challenges of Curriculum Planning and Achieving Learning Outcomes: A Case Study of Croatian Elementary School Teachers' Experiences

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Abstract: This paper aims to explore the experiences of first, fifth, and seventh grade teachers (N = 23) in competence-oriented teaching from one elementary school included in the implementation of an experimental curriculum reform program in the Republic of Croatia. Based on the qualitative case study approach, the analysis of teacher evaluation protocols considered teachers' opinions in the context of achieving learning outcomes with the use of teaching activities and methods. The paper also analyzes teachers' opinions about the required changes in the planning and implementation of the teaching process as well as their professional development. For the learning success to increase, it is important for teachers to emphasize with their competences the organization of pupil-centered activities in achieving learning outcomes that change the approach to the planning of teaching. The focus of contemporary teaching should be on problem solving, active involvement of pupils in the teaching process while respecting the pupils' interests, experiences, needs, motivations, prior knowledge, and expression of creative abilities. The teaching process focuses on constructivist teaching and the conceptual approach using collaborative methods and forms of work, technology in teaching, formative evaluation, and innovative approaches, whose intensity and complexity varies in different circumstances.

The results indicate that teachers recognize the potential of a contemporary competence-based approach and pupil-centered learning and teaching by achieving learning outcomes. Emphasis is placed on collaborative methods and forms of work, the introduction of digital technology and autonomy in the selection of content activities. They attach importance to the improvement of their professional activities in order to enable the pupils to acquire knowledge and develop skills by taking a modern approach to the teaching process and making them ready and able to respond to the demands of the future and modern society.

Keywords: *Learning outcomes, competence-based curriculum, pupil-centered learning, teachers' professional development, qualitative case study.*

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1. Introduction

Educational reforms and changes are being implemented around the world in order to respond to the modern demands of society. Educational institutions are undergoing continuous change and reform adjustments. Some authors believe that “educational institutions are in a permanent state of crisis” (Liessmann, 2008, p. 44), while others believe that the so-called rolling reforms (Šoljan, 2003 as cited in Matijević & Rajić, 2015, p. 638), which were designed and implemented “on the go” without being comprehensive and long-term, dominate in the shaping of the education system. If we briefly consider previous reform efforts in Croatia that preceded the implementation of the 2018/2019 curricular reform, we can highlight several key obstacles of a methodological nature in the planning and implementation undergoing the process of change in education that more or less successfully replaced what the official education policy called “education reform,” and which could not be conceptualized due to conflicting perceptions of education. Thus, two processes actually took place: one was carried out under the guise of reform and failed, and the other, real one, which changed the educational reality as well as the reality of parallel educational bodies with conflicting powers and conflicting ambitions. The methodology manifested its weaknesses in the period under review both in the part related to seeking much-needed consensus for the proposed reform draft and its outline that was considered a possible starting point. The problem was all the greater when such consensus could not be reached within one ruling party or within ruling coalition partners, and the chances of reaching a universally binding national agreement in such circumstances are relatively insufficient. Croatia’s education reform draft has, so far, been based on the “top-down” approach, and such an approach has been repeatedly confirmed world-wide as ineffective and questionable. Thus, “it is not unusual to witness the beginning of reform interventions in certain social circumstances, but not always their end; they last for a certain time and then stop and are initiated with an emphasis on certain parts of educational systems and can be part of a national and wider international reform effort and the like” (Karajić et al., 2019, p. 8). However, the need for educational reform is unquestionable and necessary because, as Rajić (2013) points out, despite the resistance to reform, the education system cannot avoid the transformation and innovation of the educational process. The ideas of the current reform process in the Republic of Croatia are

developing away from the conventional, traditional model of teaching towards a more modern, curricular framework in which emphasis is placed on goals and outcomes that need to be operationalized and made measurable, whereby the involvement of all stakeholders in co-creating reform as a constructivist foundation of the reform process is sought.

Keeping in mind the current implementation of the experimental curriculum program in Croatia and the challenges associated with it, in this paper, based on the qualitative case study approach, the analysis of teacher evaluation protocols considers the teachers' opinions on the implementation of the experimental curriculum. The paper also analyzes teachers' opinions about the required changes in the planning and implementation of the teaching process as well as their professional development. Before considering the basic methodological starting points and results of the conducted qualitative case study, we highlight the main features of the curriculum approach to learning and teaching and the implementation of the experimental curriculum in the Republic of Croatia.

1.1. Curricular Approach to Learning and Teaching

An approach to teaching based on learning outcomes involves curriculum planning of the teaching process. The importance of determining the learning outcomes according to subject curricula is emphasized already in the phase of planning the teaching process, i.e., what the pupils will be able to do after being taught a certain topic. However, in addition to the defined learning outcomes, during the planning process, it is up to the teacher to align the teaching methods with the expected outcomes as well as the ways to check their achievement, i.e., evaluation methods. Well-defined learning outcomes, therefore, form the basis for developing strategies for teaching, learning, and validating what has been learned (Andersson & Palm, 2018). Without this alignment, the teaching process will not be successful and will not lead to the desired changes in pupils' knowledge, skills, and attitudes. Therefore, for the quality of the teaching process, it is necessary to harmonize the planned outcomes with the manner of teaching and evaluating their realization.

According to Mezak and Pejić Papak (2019), the emphasis in modern teaching should be on problem solving, active collaborative involvement of pupils in the teaching process, and expression of their creativity. The method of active teaching takes place in situations where teaching is targeted, which means that it is expressed with clear expectations in order to

make decisions about the best methods and procedures for achieving optimal levels of learning outcomes. Achieving levels of learning outcomes, according to modern curriculum requirements, includes the process of directing teaching at the pupil, his/her interests, experience, needs, motivation, prior knowledge, and creative abilities that achieve learning outcomes. It is important to look holistically at the process of teaching using technology because it is clear from such an approach that, as Pejić Papak and Grubišić Krmpotić (2016, p. 154) emphasize, the pupil is positioned as a “subject at the center of teaching.” During the process, it is necessary to constantly encourage pupils’ activity with the exchange of information, critical thinking, connecting different opinions, connecting experiences and knowledge, independent reasoning (Mezak & Pejić Papak, 2018). Elton-Chalcraft and Mills (2015) state that pupils prefer activities in which they can independently lead the course of learning in certain segments and teaching content that is fun and challenging. Therefore, it is up to the teacher to carefully choose collaborative forms and work strategies when planning the process and to encourage problem-based teaching and research through various methods and designed activities. Rogulj (2014) believes that the modern scientific approach in the educational process in a fun way achieves quality learning that encourages pupils’ self-activity and learning based on experiences. Additionally, according to Yan et Cheng (2015), teachers can increase pupil satisfaction by providing them with autonomy in learning, i.e., by teaching them in a way that suits them, taking thereby into account their perspective. With such an approach, pupils become more independent and engaged and it is easier to achieve certain outcomes.

It is important for the teacher to think about new media and improve their digital competences because they have become a part of new generations’ way of life. The inclusion of technology and digital tools into teaching ensures the acquisition of abilities and skills necessary for the survival in today’s knowledge society, but only when technology is not an end in itself, but its use is carefully planned (Pejić Papak & Grubišić Krmpotić, 2016). In order to encourage the development of pupils’ digital competences, it is desirable to take into account their interest in the use of digital tools and content (Moral-Pérez et al., 2018). New information literacy almost always involves the development of social competences and is built on skills and knowledge learned in school, such as traditional literacy, research skills, technical skills, and critical analysis skills (Jenkins, 2009).

Well-defined outcomes are a prerequisite for a successful evaluation of the learning and teaching process. Learning outcomes must be accompanied by appropriate evaluation criteria according to which it can be determined whether they have been achieved. The application of formative evaluation facilitates the planning of teaching, which then better responds to the needs of each pupil in the classroom (Glazzard et al., 2016). By applying formative evaluation, teachers help their pupils, according to Bezinović et al. (2012) to think, organize, and reflect about the received information, give meaning to what they have read or heard, reinforce their mental images, and derive personal meaning from their experiences. A well-designed and conducted formative evaluation should suggest to the teacher what pupils know and can do (Bennett, 2011).

Improving the quality and efficiency of the learning and teaching process depends on teachers' professional development. In this process, some basic requirements for the teacher are emphasized, such as professional commitment of the teacher to his own learning, professional autonomy, dynamic understanding of learning as well as the collaboration and connection with the community (Kalin & Čepić, 2019).

1.2. Experimental Curriculum Program in Croatia

The Ministry of Science and Education of the Republic of Croatia is the coordinator of an experimental program that is part of the implementation of the Comprehensive Curriculum Reform, which includes "the development of basic competences for lifelong learning, a clear definition of educational outcomes, not only cognitive (knowledge) but also skills development, attitudes, creativity, innovation, critical thinking, initiative, entrepreneurship, aesthetic evaluation, responsibility, attitude towards oneself, others, and the environment; open didactic-methodological systems that enable teachers and pupils freedom in choosing the content, methods, and forms of work and clearly defined standards/criteria for the development and adoption of educational outcomes" (Škola za život, n.d., p. 3). The goal of the experimental program is to increase pupils' competences in problem solving, increase their satisfaction with schooling, and motivate their teachers.

In the 2018/2019 school year, the experimental program for elementary schools was carried out in 48 schools in the Republic of Croatia in the first and fifth grade and in the seventh grade only for the subjects Biology, Chemistry, and Physics (Škola za život, n.d.). In the school year

2019/2020, the program continued in the same schools in the second, sixth, and eighth grade for the mentioned subjects. At the same time, the frontal application of the Program began in the first and fifth grade and in the seventh grade for the subjects Biology, Chemistry, and Physics in all elementary school in Croatia.

The experimental program is carried out according to the new subject curricula and interdisciplinary topics curricula, using various forms of work and teaching methods, teaching resources and aids, which include digital tools. Each curriculum consists of a description of the subject or interdisciplinary topic, educational goals of learning and teaching, subject areas (domains, approaches) in the organization, educational outcomes, ways of learning and teaching the subject or interdisciplinary topic, and outcome evaluation. The emphasis is on educational outcomes, constructivist teaching, and a conceptual approach. In such an approach, the pupil is an active participant who, through his/her work in the immediate and original reality, achieves the outcomes of the subject curriculum. The teacher has autonomy in the selection of activities, timing, and choice of outcomes and procedures. For the implementation of the Program, funds are provided for equipping the schools as well as teachers' professional development. The Ministry of Science and Education, together with the National Center for External Evaluation of Education, monitors the implementation of the objectives of the experimental program.

2. Research Questions/Aims of the Research

Contemporary pupil-centered teaching, with a competence-based approach, is a new process orientation that encompasses an increasing number of schools. The implementation of the experimental curriculum is entering Croatian education and thus creating inevitable change that pupils, teachers, and other educators in the school system encounter.

The main aim of this research was to explore the experiences of first, fifth, and seventh grade teachers (N=23) in competence-oriented teaching from one elementary school included in the implementation of the experimental curriculum reform program in the Republic of Croatia. Based on the qualitative case study approach, we focused on two research questions: (1) analysis of teachers' opinions on the implementation of the experimental curriculum in four areas: curriculum planning, use of contemporary teaching methods and activities; achieving learning outcomes and the application of formative evaluation; and the need for continuous

professional development; and (2) gaining insight into the required changes and challenges in the planning and implementation of the teaching process as well as their professional development. Finally, a qualitative analysis of the assessment sheets (protocols) provides an in-depth understanding of teachers' experiences in the application of the experimental curricular program in four thematic areas and required changes and challenges. The purpose and scope of this paper do not provide a detailed overview of the situation (social context and changes that preceded the experimental program, nor a description of the situation of its introduction and implementation as part of the curricular reform in the Republic of Croatia as part of case study research) but, due to necessity, will be limited to several key aspects of the implementation of the curricular experimental program.

3. Research Methods

3.1. Participants

The experimental curricular reform program in the Republic of Croatia included 74 schools (elementary, grammar schools, and vocational schools) and 5% of schools (out of a total of 1,311 parent schools) from all counties in Croatia in the 2018/2019 school year. In elementary schools, it was conducted in the first and fifth grade and in the seventh grade only for the subjects Biology, Chemistry, and Physics. In secondary schools, the program was implemented in the first grade of grammar school in all subjects, and only in general education subjects in vocational schools. The sample included those schools that had applied to the public call (Ministry of Science and Education) and which attached approvals from the founders, school boards, teachers' council and parents' council, and a letter of motivation. The approvals were key due to the determination of the right to participate in the experimental implementation.

In our research, we selected one urban elementary school (out of two elementary schools from the Primorje - Gorski Kotar County) included in the experimental phase of the curricular reform. Data were collected on a target sample of 23 teachers from one elementary school, who teach classes included in the implementation of the experimental school curriculum in Croatia. 21.7% of the participants are first grade teachers (N=5), 65.2% are subject teachers (N=15), of which four participants are male and the remaining participants are female. Among the participants, one is a first-grade teacher, eleven are fifth-grade teachers, two are fifth and seventh-

grade teachers, and one is a seventh-grade teacher. The remaining 13.1% (N=3) teach elective subjects in the first, fifth, and seventh grade.

3.2. Materials and Instruments

Since the topic of understanding the aspects and dimensions of the leadership process and their meaning for the participants of this research is essentially a qualitative paradigm, a qualitative case study approach was applied, which included the application of evaluation protocols and other sources (Merriam, 1988; Yin, 2008; Merriam & Tisdell, 2016). The method used for the present study was the instrumental case study as described by Stake (2000). According to Stake, in a single instrumental case study, the researcher focuses on an issue or concern and then selects one bounded case to illustrate this issue. We used multiple sources of information in the data collection (interviews, documents) to provide an in-depth insight into the challenges of curriculum planning and achieving learning outcomes from the perspective of teachers in the context of implementing the experimental reform program in the Republic of Croatia. Since we do not have the space to analyze all the data, in this paper, we discuss the findings gained related to the analysis of evaluation protocols. The evaluation protocols (see Appendix) consisted of general data on the participants and seven open-ended questions related to key segments of the implementation of the curricular experimental program: achievement of learning outcomes, process planning, introduction of possible changes in teaching, process evaluation, experience in applying digital technologies, competence, and teachers' professional development.

3.3. Procedure and Data Analysis

Data collection lasted for three months during 2018 and was organized in such a way as to reduce the disruption of school process to a minimum. Data were collected through multiple sources of information, such as evaluation protocols, interviews, and documents (subject curricula). As previously pointed out, the focus of this paper is on the qualitative analysis of the evaluation protocol data. All participants were informed in advance about the purpose of the research and the questions of research ethics were answered from the aspect of access to the participants, informed consent, and responsibility towards the participants. The rights to access all information related to the research, confidentiality as well as ethical treatment of the collected data were guaranteed, while the participants'

identity remained known or available only to the researcher. When collecting data, the emphasis was on providing sufficiently rich and comprehensive descriptions and contextual factors to achieve credibility and a basis for generalizing research findings.

The collected qualitative data were analyzed with MAXQDA according to the open and axial coding procedure, which consisted of five steps (Koller-Trbović & Žižak, 2008, p. 166): “Step 1: underlining significant statements, sentences, parts of the text (coding units - source text); Step 2: first-instance codes (open coding) (keywords - summary); Step 3: second-instance codes (relevant terms) (dimensions - abstraction); Step 4: grouping of second-instance codes (categories - classification); and Step 5: topics, i.e., areas (domains - thematization).” On several occasions, the researchers discussed the codes, identified the emerging topics, and reached agreement in the process. As categories emerged, we used the constant comparative method (Charmaz, 2000) to compare cases and to refine, expand, or delete categories when needed. When we discussed any disagreements we might have had about emergent categories, we returned to the verbatim data to again ascertain the participants’ viewpoints, and continued this process until we agreed on all categories. The process of cross-checking the coding of the major categories enabled this discussion, which improved the insight into the coding.

4. Results and Discussions

Modern pupil-centered teaching includes a competence-based approach to the planning of the teaching process, orientation to teaching outcomes, application of collaborative methods and forms of work, digital technology in teaching, formative evaluation, and other features, whose intensity and complexity vary in different circumstances. Although, in theory and at times in the practice of teachers in Croatian schools, the orientation of the teaching process on the pupils has been present for some time, it should be a challenge for all teachers. This challenge is best illustrated by the participants’ statements: *I would like to point out that I am very happy to be participating at a moment when changes in the field of education are emerging. I like that the experts and colleagues, who actually work or have worked in the classroom, are involved in curriculum work and teachers’ professional development (I 11); I think that the Croatian school needs and deserves changes, and I believe that you are aware that everything depends on the teachers. Many things that are now in the focus of the experimental program already exist in schools — we differ in the way we work (I 15).*

The research results are presented according to the thematic analysis defined by thematic units and subtopics, with a focus on: curriculum planning, application of modern methods and activities in achieving learning outcomes, achieving learning outcomes and application of formative evaluation, and the need for teachers' continuous professional development (Table 1)

Table 1. Thematic units and subtopics

Curricular approach to learning and teaching - thematic units and subtopics	
Curricular planning of the teaching process	planning of the teaching process per subject curriculum teacher autonomy in content choice that achieves learning outcomes attaching importance to inter-subject linking complex administrative/documentation requirements
Application of contemporary methods and activities in outcomes achievement	cooperative forms and work strategies encouraging learning through discovery focusing on problem-based teaching innovative "flipped classroom" teaching approaches use of digital tools application of digital content using tablets in teaching
Achievement of learning outcomes and application of formative evaluation	assessments of the achievement of the learning outcomes of subject curricula difficulties in achieving outcomes attitudes toward formative evaluation feeling of grading burden
Need for teachers' continuous professional development	teachers' opinions about online training cycles exchanges of ideas at professional meetings need for professional development in the field of evaluation

(Source: Authors own contribution)

In the analysis of the results, the topics are descriptively explained and the subtopics are illustrated with coded narrative excerpts from teachers' evaluation sheets.

4.1. Curriculum planning of the teaching process

The challenges to the planning of the teaching process, which teachers face, were initially reflected in the development of annual syllabi based on the subject curricula, with an emphasis on learning outcomes. The vast majority of teachers emphasize that their planning process was extremely demanding. *Writing the annual syllabus was very demanding for me because I didn't have clear guidelines on how it should work and I got confused. I adjust my monthly plans on the go (I16); I have to admit that the planning takes a lot of effort and time (I22).* In order to understand the planning process by relying on outcomes in general, in addition to the subject curricula, teachers were assisted with methodological manuals developed based on the curricula. *The methodological manual (I13) helped me in the planning and writing of annual syllabi as well as monthly plans. The Methodical Manual helped me a lot in that. I think it is clear and concise and states only the key points (I17).* Understanding the elaborated topics and the expected outcomes offered by the manuals required additional effort to study and understand the guidelines. *It was not difficult to understand and apply the recommended changes in the work itself, but it was difficult to plan using the new guidelines and terminology in the new Methodological Manual that offered content relevant to the planning (I2).*

Throughout the curriculum planning process, teachers are often pleased to point out teacher autonomy in choosing the methods, sources, aids with which the outcomes will be achieved. *I like the idea of an outcomes-based subject curriculum and the resulting teacher autonomy (I8); First of all, I like the autonomy of teachers and pupils – teacher autonomy in choosing methods, sources, materials ... (I12); I like the freedom and autonomy teachers have because that is where we can show all our creativity and make learning easier for the pupils (I22).*

The process of planning by units and topics that achieve the outcomes enables teachers to better prepare the correlations. *This year, I paid particular attention to intradisciplinary as well as interdisciplinary correlations (I12).* Some teachers point out that the modern process should be further strengthened by thematically linking the subjects. *In process changes, it is important to start establishing correlations between the subjects frequently (I6).*

Teachers express their views of dissatisfaction with the administrative and documentation requirements that are placed before them throughout the entire planning process, and then also the monitoring of the implementation. *There is a lot of paperwork (I15); We have also accepted that there would be additional work, training, tasks, but I think we were not ready for it to be in*

such quantity and as time-consuming; documentation monitoring often overlapped with other obligations in regular work (I17).

4.2. Application of methods and activities in achieving outcomes

During the teaching, teachers emphasized the importance of collaborative forms of work and motivating pupils with various methods, collaborative strategies, and activities in achieving learning outcomes. *I used different methods and activities to achieve the outcomes in order to make the teaching as interesting as possible for the pupils. (I1); My wish is to make the pupils as interested as possible for the subject content and to make them as active participants in the teaching process as possible. (I6)*

First-grade teachers most often use learning-through-play and learning-through-discovery by means of project activities. *Didactic game was used, which is always motivating for the pupils (I4); The methods I used most often were: learning-through-play, project learning, research work, and the method “think – exchange – present” (work in pairs or groups) (I 1).* Interesting activities and methods used in classroom teaching are: quizzes, hot pen, think-pair-share, and loud thinking.

Fifth and seventh-grade pupils are oriented towards problem-based teaching, so that the methods of text analysis and use of other media, guided reading, research, and demonstration were frequently applied. *In working with pupils, I placed emphasis on collaborative learning in which pupils assess what they know about a given topic, state the problem, research, then discuss in a group, and finally present it to their classmates (I 22); The strategy I used in my teaching was the strategy of learning-through-discovery (I17).*

The contemporary approach to teaching is also reflected in the application of innovative teaching methods such as the “flipped classroom.” *I used the “flipped classroom” so that the pupils could study the topic at home based on the prepared materials and come to class ready, which left time for critical discussion. (I10)*

The data indicate a multitude of different applied methods and collaborative strategies in teaching. *Through active learning strategies, collaborative learning, presentation, practical work, pupils developed skills and attitudes, thought critically and drew conclusions. (I 13)*

Teachers also use various digital tools in their classes: Power Point presentations, Mozabook, Office 365, Kahoot, Forms, Loomen, Edpuzzlea... *I use digital tools for every class. I prepare a PPT presentation for each lesson, and at the end of the lesson pupils receive a link (Microsoft Forms), which they then solve (I18).* They also express a positive attitude about their use. *The use of*

digital tools and content is crucial in today's form of education (I20). At the same time, they point out that it is easier for the pupils to adopt outcomes with more interesting teaching using digital technology. Digital tools were enthusiastically accepted by the pupils, they were not afraid, by trial and error, they got acquainted with the content (I19).

First-grade teachers mostly use a digital textbook with a projector. *In my teaching, I use a digital textbook via a projector, which makes it easier for me to explain tasks to the pupils (I1). Some teachers state that they often lack additional knowledge and time for the preparation of digital content and that they need additional education. I try to make quality digital tablet materials for pupils, and the only problem is that it takes a lot of time (I18); I think that for the pupils, but also for teachers, training sessions should be organized on how to work in digital tools and prepare digital content (I6).*

The frequency of using digital content using tablets in teaching varies among teachers. Some teachers think that tablets are useful, that pupils use them well, and make their bags easier. *For now, the use of tablets in teaching is going pretty well. Most pupils are responsible for their devices (I9). Another part of the teachers thinks that the bags are even heavier now because they carry both the tablets and textbooks, that the Internet connection is generally bad and that not all pupils can handle the applications. These teachers generally emphasize that tablets take a lot of time (tuning on) and that they should not be used as a basic tool but only as an addition. Personally, I believe that the introduction of digital content in teaching should be minimal, and it should serve to clarify and facilitate understanding but also to give certain dynamism to the teaching process and increase pupil motivation (I10).*

Tablets are less often used by first-grade teachers, who state that they mostly pay more attention to mutual relations, socialization, and interaction of the pupils since their attention is short-term, they are playful, and language expression is important. *I am a first-grade teacher and this semester I worked on making pupils accept school and school obligations with joy, on pupils' social contacts, discipline and motor skills. I find the first semester of first grade, too early to use tablets (I1). In addition, the Internet connection is generally poor, some applications cannot be opened, and a lot of time is spent learning the behavior with tablets, but this is a segment to which first grade teachers also attach importance. I talked to my pupils about the responsible and safe use of ICT. We learned how to properly turn the tablet on and off and how to start and close content in e-textbooks (I4).*

4.3. Achieving learning outcomes and applying formative evaluation

Although teachers emphasize that the outcomes of subject curricula are mostly achieved without difficulty (*I achieved most of the planned outcomes (I 23), All planned outcomes were achieved, of course with different pupils at different levels of adoption (I 9)*), first-grade teachers emphasize pupils' emotional (lack of) readiness, which is the reason why a lot of time devoted to achieving educational outcomes is spent on learning the rules of behavior and socialization. *Pupils' initial knowledge indicated the beginning of outcomes planning, but during the realization and work with the pupils, it turned out that their emotional (lack of) readiness greatly impacted the implementation of the plan (I 2).*

In certain topics, they only partially achieved the outcomes of the subject curricula, citing as the reason the poor assessment of the time required for the realization of a particular outcome and the fact that teachers perfect their outcomes-based planning only through practice. *After many years of work, I have to start planning from the end of the class – I have to turn things upside-down in my head. Sometimes I manage to achieve everything in a single class, and sometimes I “run out” of time (I 6); It was necessary to make a turn and direct the pupils to look for solutions on their own and not to expect ready answers (which they are not used to) and such activities required more time (I 15).*

Most teachers consider the defined outcomes of subject curricula to be too numerous and demanding for the pupils in the context of previous teaching practice because the pupils are not taught to independently research and solve problems; their interests and abilities are different. *The pupils are mostly accustomed to frontal work, when working in pairs or groups, pupils often start to have fun and thus move away from the task, so not all planned outcomes are fully achieved (I 11); The approach to learning of individual pupils is also problematic, as is the impossibility of individualization for each individual lesson because the lesson is of limited duration (I 12).*

They point out that there are too many pupils in the class, with different abilities, skills and prior knowledge, so it is important to effectively plan teaching activities at different levels of achieving learning outcomes. *The problem is the large number of pupils in the classroom given that there are large differences in prior knowledge and abilities (I 4); I achieved most of the planned outcomes but at different levels. The process of achieving outcomes took longer than anticipated because the abilities of pupils in the classes in which I teach are different. (I 10); Unachieved outcomes are closely related to the number of pupils in the classroom and the number of teaching hours. (I 20)*

Furthermore, as an aggravating circumstance in the realization of the outcomes, they state the lack of didactic aids and materials. *There is a need for better equipment of the classroom with didactic materials, a magnetic board, a magnetic dictionary I (I 4) The planned teaching materials have not yet been fully developed for use (I 23).*

Teachers used formative evaluation more often to assess the achievement of learning outcomes. They express a positive attitude towards formative evaluation and believe that formative evaluation offers concrete feedback on the pupils' knowledge, achievement of outcomes, and the quality of the teaching process. *Formative evaluation gives us feedback on the quality of pupils' knowledge, but also the quality of our teaching in a certain part of the teaching material (I 1); I think such an evaluation is useful and gives pupils clear guidelines for further work (I 5); I conducted formative evaluation regularly with the aim of improving learning and teaching through feedback (I 8); I consider this way of evaluation to be excellent and the most objective (I1).* Although they have expressed positive attitudes towards the application of formative evaluation, teachers emphasize that this form of evaluation is very time-consuming. *Monitoring pupil progress requires taking a lot of notes – a lot of time (I 6); I conduct formative evaluation by constantly writing, but it really takes a lot of time (I 7); Its implementation was quite difficult for me because it requires a lot of time and work (I 10).* In order to facilitate formative evaluation, a small number of teachers stated that they use different platforms and activities in the continuous monitoring of learning outcomes. *I use different platforms such as Kaboot, Microsoft Forms, and now I am already working on my course on the Loomen platform (I 9).*

Among the difficulties in the implementation of formative evaluation, teachers point out the burden of the still present legal framework of the Rulebook on evaluation, which prescribes numerical assessment. *Combined with the assessment we are legally required to do, it greatly complicates and burdens me in terms of time (I 2).* In practice, the lack of pupil interest and getting used to this way of evaluation are noticeable, so for most pupils the grade is still the biggest motivation. We are also slowly changing the ideas of evaluation in the minds of pupils and their parents, but *I must admit that this idea of evaluation is still dominant (I7); Great in theory, but in practice grades are still more important. However, some pupils saw a positive shift after the formative evaluation (I18).*

4.4. The need for teachers' continuous professional development

Given that, in addition to the experimental implementation of the curricular reform, teachers were obliged to participate in online professional development cycles through the *Loomen* platform, teachers' opinions on the organization and usefulness of professional development were divided. Teachers point out certain interesting activities, ideas that they can apply in direct work and exchange of materials, reference to sources. *Education at Loomen helped me with ideas on creating problem-solving tasks in teaching that are lacking, in exchanging experiences with colleagues as well as exchanging excellent materials and resources for work (I2); For me, virtual professional development was useful in that, by reading and solving the assigned tasks, I have come to better understand the meaning of the reform, I've learned more about the subject curriculum, some new strategies. I've learned a lot, but I've also become aware of the fact that I still have much to learn (I10).* However, almost all teachers emphasize the burden of the number of tasks, activities, and deadlines for performing activities that were continuously set before them during the education. *The tasks posed a problem in terms of deadlines for execution (I2); Loomen was quite good for me, I liked it a lot, and apply it in my teaching and on myself, although the deadlines for execution were sometimes very stressful and shocking (I19); Loomen education was too fast and too frequent along with many other commitments expected of us (I3); Excessive amount of tasks and time limit (I22), I don't really see excessive benefits from the professional development through Loomen when carried out at this pace (I6); I believe that development through the Loomen application should have started earlier because a more thorough study of the novelties would have contributed to us being more willing to embark on the reform (I4).* For these reasons, teachers felt the need to emphasize the importance of exchanging ideas, professional development at "live" professional meetings. *In a single day, in one place, in conversations with other teachers from other schools and through workshops I learned more than I guess in the whole of Loomen (I9); I left the meeting even more motivated for further work. I am of the opinion that there should be more such professional development opportunities (I22).* Among the teachers, there are also complaints about the expectations of certain professional meetings, because a smaller number of teachers point out that *Professional meetings were not too useful, there were a lot of questions, we did not get the answer to many of them (I17); At the professional meeting, it would have been more useful if the topic was pupil evaluation (I4).* Precisely the need for additional professional development in the field of evaluation, elaboration of evaluation criteria, and general knowledge of the docimological field was emphasized by most teachers. *My suggestion is that there should be more education on the topic of evaluation, but also more training at*

professional meetings (15); We have insufficient knowledge to develop evaluation criteria (120); I would improve skills for formative evaluation and providing feedback (18).

Based on the presented results, it is evident that the constructivist-oriented teaching process in the experimental program focuses on the pupil as an active subject with an emphasis on learning outcomes that need to be operationalized and made measurable in order to encourage the development of competences. The curriculum-constructivist perspective stands out as a basic determinant of all modern pedagogical-methodological approaches. The main determinants of such an approach include a goal-oriented approach, i.e., an emphasis on curriculum planning and achieving learning outcomes as opposed to the content-oriented approach, collaborative teaching as opposed to frontal (*ex cathedra*) teaching, use of technology and encouragement of multimodal, multimedia culture as opposed to a poor use of technology and media in teaching, pupil-centered as opposed to teacher-centered, relativistic as opposed to deterministic teaching logic, relational as opposed to hierarchical responsibility and autonomy in work, educational-operational results focused on the competence system as opposed to centralized subject curriculum, solid cross-curricular and linking knowledge with real-life application and collaboration with parents by the local community as opposed to weak interdisciplinary and collaborative and conceptual character of learning as opposed to the encyclopedic character of learning in learning and gaining experience (Karajić et al., 2019, p. 116-118).

The results indicate that, through activities in the process, the teacher encourages critical thinking, problem-based learning, divergent thinking, connecting information into meaningful wholes, connecting with everyday pupil knowledge from the environment, and independent learning of the pupils. Thematic research and search for creative solutions is conducted based on interdisciplinary connections, experiential learning, development of collaborative skills as a prerequisite for lifelong learning. The modern approach includes the use of technology as a tool in the process of research and collaborative learning, collecting relevant data, project implementation, which teachers consider a challenge and emphasize the need for additional education to successfully implement digital technology in the teaching process. The advantages of introducing a curricular approach into the teaching process, the necessary changes, and the challenges highlighted by teachers are shown in Table 2.

Table 2. Teachers' satisfaction with the implementation of the experimental program:

required changes and challenges		
Advantages	Disadvantages (required changes)	Challenges
<ul style="list-style-type: none"> • outcomes-based subject curricula • teacher autonomy in the process planning • pupil-centered teaching, active learning through problem solving and collaborative learning • additional materials, methodical manuals • application of digital tools • online platforms • professional meetings 	<ul style="list-style-type: none"> • insufficient professional development • many activities and time constraints in online professional development cycles • technical equipment of classrooms • lack of didactic material • insufficient instructions for compiling syllabi, planning is time-consuming • insufficient knowledge to develop of evaluation criteria • burden of numerical pupil assessment • a lot of administrative/docum entation work 	<ul style="list-style-type: none"> • effective outcomes planning • understanding subject curricula • application of innovative teaching methods • interdisciplinary correlations • formative evaluation • use of digital tools and preparation of digital content • improving digital competences • implementing inter-subject topics • professional development in the field of evaluation

(Source: Authors own contribution)

The competence approach includes emphasizing the development of pupil competences during the process, but also requires strengthening teacher competences. Teacher competences are understood as a complex combination of knowledge, skills, understanding, values, and attitudes focused on quality action throughout the curriculum (Kalin & Čepić, 2019). In order for teachers to acquire the competences needed for these new roles, it is necessary to ensure quality initial education as well as processes of

continuous professional development. Teachers' professional development does not take place in a vacuum; it is subject to constant change, and it is crucial to obtain as valid and as complete a picture as possible in order to improve its quality and effectiveness. It is, therefore, extremely important to engage in a "continuous exploration of educational needs, conditions, and opportunities, and curriculum-based planning of teachers' professional development in a changing contemporary educational context" (Čepić, 2020, p. 4068).

5. Conclusions

The findings that have arisen from the analysis of the experiences of first, fifth, and seventh-grade teachers from one elementary school on the implementation of the experimental curriculum reform program in the Republic of Croatia can be summarized as follows. Teachers particularly emphasize a) the complexity of planning annual and monthly performance curricula according to the subject curricula with an emphasis on learning outcomes, administrative-documentation requirements that are set before them in the entire planning process, and monitoring the implementation. Teachers also highlight their satisfaction with the greater autonomy and freedom in deciding primarily on the curriculum, but also on the organization of teaching and learning. They recognize the importance of planning and realization of inter-subject or interdisciplinary topics that contribute to the interconnection of educational areas and subjects into a harmonious whole. Furthermore, b) teachers see the modernization of the teaching process and the use of digital tools in teaching for the achievement of learning outcomes as a positive step. There are differences of opinion among teachers regarding the frequency and usefulness of using digital content with tablets in teaching. Teachers find problematic c) the multiplicity of the outcome of the subject curricula and the lack of didactic aids and materials are considered problematic. Although positive attitudes towards the application of formative evaluation, teachers emphasize that this form of evaluation takes a lot of time in combination with the prescribed numerical assessment that they carry out by law. Finally, d) teachers assess the organization of online training differently. Many teachers warn that the obligation to participate in online training cycles is time consuming and that it significantly increases their workload.

There are certain advantages, disadvantages, but also some challenges that should be taken into account in the future. These include

effective planning of outcomes achievement, understanding subject curricula, application of innovative teaching methods, thematic planning with more frequent interdisciplinary correlation, effective application of formative evaluation, use of digital tools and preparation of digital content, improving digital competences, implementing inter-subject topics and professional development in the field of evaluation topics and evaluation. Among the required changes, the importance of adapting teachers' professional development to their educational needs is especially emphasized. In summary, teachers recognize the potential of a contemporary competence-based approach and pupil-centered learning and teaching by achieving learning outcomes. Emphasis is thereby placed on collaborative methods and forms of work, the introduction of digital technology, and autonomy in the selection of content activities. Furthermore, they attach importance to the improvement of their professional activities in order to enable the pupils to acquire knowledge and develop skills by taking a modern approach to the teaching process.

The experimental curriculum reform program in the Republic of Croatia is also a strong incentive to improve the quality of the teaching profession, which has brought extensive changes in the modernization of the educational process with an emphasis on the curriculum-constructivist perspective in the modern learning process and teaching. Croatia's efforts, in this direction, strengthen the need for additional efforts in a number of areas, especially teachers' professional development, in order to act synergistically in achieving a quality learning and teaching process. Raising the quality and efficiency of education depends on teachers' professional development – initial education and continuing professional development – and requires the highest level of professional competence that a teacher is able to achieve. This includes strengthening and developing teacher competences, especially in the areas of curriculum planning, application of modern methods and activities, achieving learning outcomes, and application of formative evaluation, as indicated by the results of a qualitative case study. It should be noted that in schools, based on the legal procedure, teachers independently applied to participate in the pilot phase of the experimental program. These findings provide a very useful basis for further action. However, a dose of caution should be maintained as teachers' responses may be partly the result of socially desirable and/or well-intentioned responses, but insufficiently critical assessments of their own work in the form of overemphasizing success in adopting and implementing change. Therefore,

further research, should include, for example, systematic monitoring of the teaching process in the classroom.

In order to be able to respond quickly to the challenges and changes of ever-faster scientific, technological, and social changes, it is extremely important to thoroughly determine educational needs (but in relation to the existing contextual educational conditions and opportunities on which the success of the learning and teaching process depends). Creating conditions and opportunities for teacher education and professional development, as well as more initiative, autonomy and support for teachers in this process would weaken the effects of disruptive and strengthen the effects of mitigating factors for designing and introducing changes in the Croatian educational system.

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Appendix

Assessment sheets

1. Share your opinion on what you have achieved from the planned subject outcomes.
2. List the activities and methods by which you achieved the outcomes.
3. If you did not achieve the outcomes, state the main reasons, i.e., the problems you encountered in achieving the outcomes.
4. Are there any areas in your work, especially in teaching, that you would like to change?
5. In your teaching, as part of the experimental program “School for Life,” you should have conducted a formative evaluation. Give your opinion on such a method of evaluation with an emphasis on the difficulties, if you encountered any, of such evaluation.
6. Describe your experiences in using digital tools and teaching content as well as tablets in teaching. If you have not used them, explain why not.
7. Write a review of the implementation of the experimental program “School for Life.” State what you like and what you do not like about it. Pay special attention to the work with the *Loomen* application, “live” professional development, if you have participated in it so far, your experiences with planning and writing subject syllabi and monthly plans.