Preparation, monitoring and evaluation of the comprehensive curricular reform experimental programme „School for Life“

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1. About the experiment: between a scientific approach and practical application

Cycle of strategic planning as the basis for the experiment

The goal of this exposition is the explanation of the process of monitoring and evaluation of the curricular reform experimental programme “School for Life”, which is implemented by the Ministry of Science and Education (MZO), as well as the description of the context in which the process is taking place.

The standard basis for strategic planning are the phases of the Deming cycle: Plan-Do-Check-Act (find out more on: www.higherdecision.hr). There is a short review of the phases on Image 1, with a modification adapted to their application to solving specific problems in a given environment with the emphasis on public policy. These phases can also overlap, and in contemporary approaches, this is especially true regarding the implementation and monitoring phase and analysis of results. It is also possible to plan new actions in parallel with the previous two phases (so-called “lean” approach) to gain momentum and efficiency in responding to fast changes in the environment. Such agile approach is common in all of today’s innovation industries and key processes that are exposed to fast and often unpredictable changes in the environment, which can become positive impulses and negative risks for the success of achieving the goal of change. The goal can also be changed in the process of strategic planning itself.

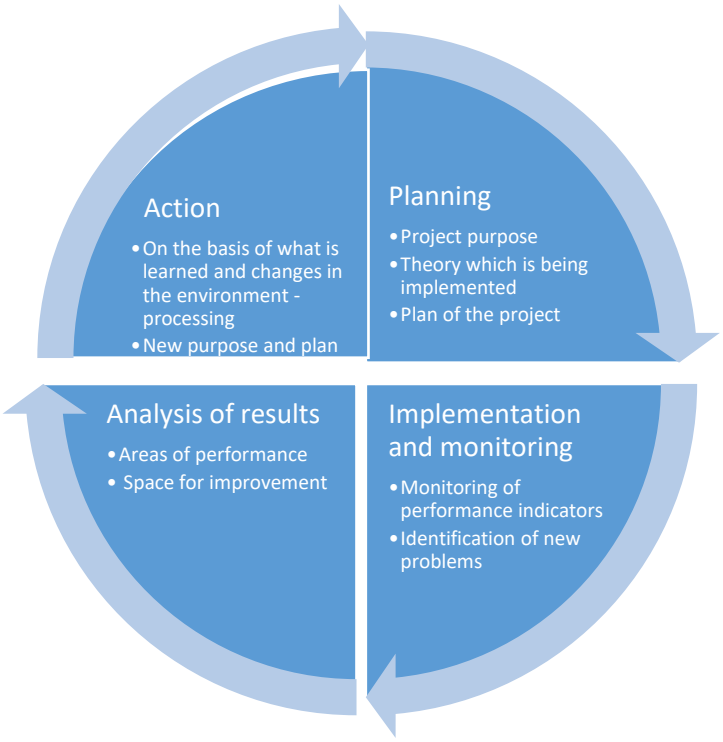

Image 1. Modified Deming cycle.

Choosing schools for the experiment

The experiment is the most common method in natural sciences. The most common first association are experiments in physics or chemistry that include careful planning, predicting results, measurement, and arriving to conclusions. It is important to plan experiments so that the impacts of factors that are not measured, or that are omitted, be driven down to a minimum. Experiments in social sciences may seem to have similar characteristics, but it is much more demanding to monitor different measured variables in an exact manner, or to control those that are omitted. In that sense an experiment in education is no exception and the aggravating circumstances are its application in real conditions, which can hardly be changed only for the purpose of experimental validity, while the emphasis lies on a later application in a much broader, similar, but not the same environment.

Planning (design), implementation, monitoring and analysis of experiments in education, especially within the framework of the reform of the educational system, has a practical and scientific component, which is characteristic for the paradigm of design science (Hevner, et al., 2014). In some instances, the goal itself can determine whether it is better to collect information and data important for practical implementation, than to follow a firm line of scientific research, or scientific method. However, here it is important to find a good balance between the idea of the scientific experiment and searching for practical answers to the most important questions of improvements in practices in the educational system and in schools.

This experiment does not jeopardize the rights of students to quality education, as well as the privacy of participants, especially minors, during the course of the experiment. In that sense, experiments in education do not have the characteristics of a classical experiment in the positivist sense, but are rather quasi-experiments in education, even action research (Cohen, 2011).

Quasi-experiment does not have a random sample, although it follows certain principles of sampling which take into consideration the most important characteristics, and include a sample to which an intervention is being applied (experimental sample), and one very similar to it according to its most important characteristics without the intervention (control sample). The sample of 74 schools for the experimental phase of curricular reform was chosen based on the assumption that 5 per cent of schools (out of 1311 schools) is enough to get relevant answers to questions that were the purpose of the experiment in the first place. This process required the selection of all types of schools (primary, general secondary, or gymnasiums and vocational schools) in all counties in Croatia, but in different areas (rural, urban, islands, etc.), and schools of different size and level of equipment being at least 2 on a scale of 1 to 5 (CARNET, digital maturity of schools). However, the sampling was not random, but schools were instructed to apply to a call for proposals and to send letters of approval by their founders (local authorities), school boards, teachers' council and parents' councils, as well as a motivational letter. The approvals were crucial for determining the eligibility of a school to participate in the experimental implementation.

Out of 215 received applications, 74 schools were chosen based on the elaborated criteria, or slightly more than 5 per cent of all schools in the Republic of Croatia (RH). These schools were included in what is in the jargon of the experiment in education called an "intervention". In this way, we managed to obtain the closest possible form of a representative sample of schools. The preparation of teachers, expert associates and school principals was implemented until October 2018 in these 74 schools only. However, other teachers were allowed to join virtual classrooms on a voluntary basis, which several thousands of teachers decided to do. Since the middle of October 2018 another training started for all the other schools in the Republic of Croatia, and now all teachers in all schools are included in training, which distorts the "scientific" part of the experiment because the control

group of schools that was not selected is not “without intervention”. The control group should be very similar to the experimental group with regard to initial characteristics, and the control group should somehow be “protected” from intervention, which in this case is not only impossible but also undesirable for ethical reasons. Determining the causal connection between the intervention and results in this case is very questionable. In this context, the Committee for monitoring and evaluation of the experimental programme has elaborated in the conclusion that only a limited comparison of results between the experimental and the control group of schools is possible. The control group of schools was chosen in a way that the number of schools and the number of included students is roughly the same as the experimental group of schools. In addition, the number of schools in counties and the geographical distribution is similar, and the number of schools of the same type is similar, as well as the number of schools in cities and towns.

In addition, during the whole stage of preparation and implementation, the important success factor was co-designing, or participatory design of those who are the most important participants in the system (teachers, students, expert associates in school, parents and founders, the Ministry, work groups for implementing the reform and competent agencies). In this way, we were able to reach many ideas that are emerging in the authentic environment in classrooms and schools. This was also the crucial success factor derived from many international research and reports – an interplay of approaches of top to bottom reform and an openness towards all innovative ideas that emerge from practice (Leavy, 2015).

In that sense, action research in schools is encouraged and implemented by the teachers and expert associates himself or herself that can result in innovative pedagogical practices that can then be shared and improved in cooperation with each other. Virtual classrooms and meetings between teachers are good places for that. Modern technologies in education are an excellent basis for implementing, sharing and evaluating results of action research. In order to encourage innovative solutions, the Ministry of Science and Education has started to reward teachers for examples of good practice.

2. Paradigms, goals, research questions and methodology

Paradigm: Student in the center, and the teacher is autonomous

Setting clear and simple research questions is a good start of every research. Simplicity comes from good preparation, but it is also a precondition of a well thought out experiment and a foundation for the choice of methods for monitoring and evaluation. Taking into consideration that the basic determinant of all contemporary approaches to education and methods in education, and especially those in Europe, is the one where the student is in the center of processes of learning and teaching (OECD, Education Policy Outlook, 2018). Therefore, the basis for the phase of preparation is the design revolving around the student in order to gain deeper insight and understanding of the process of learning and teaching. A crucial role in this process was given to mentors from Croatia and other countries who develop training materials and handbooks for teachers, principals and expert associates. More than 200 hundred mentors are mostly from schools and their inclusion in the reform provides insight into the authentic experience of students and teachers. This approach was meant to enable the use of experience from schools in the experimental phase of the curricular reform by including stakeholders from schools through participatory design, or co-creation of all processes of the reform at the level of the system and schools.

Furthermore, a special determinant of the reform, which stems from the Strategy of education, science and technology, pertains to giving autonomy of work to schools and teachers. However, in order to achieve a situation where teachers and schools would become autonomous, it is crucial to strengthen competencies of teachers, expert associates and principals so that they are ready to take on the responsibility, which goes with autonomy. Some significant examples have shown that in our system, which has not provided freedom to teachers in many aspects of their work, it is difficult to encourage teachers to make their own decisions instead of asking for instructions “from the top” referring to prescribed plans, instructions, handbooks, ordinances, etc. An example of this would be the free choice of literature for required reading that the teachers would choose by themselves in cooperation with students – Croatian language curriculum. It is equally important to build trust of parents, founders, students and the general public that teacher are allowed to do so, they can and they should. Without free, innovative and autonomous teachers, there is no individualized approach to teaching and learning where the student is in the center of this process.

Goals of the reform

The goals of curricular reform are derived from the Strategy of education, science and technology and many other programming documents of the European Union (ET2020) and can be summarized in three main goals: 1) an approach based on educational outcomes, which are directed towards solving problems and critical thinking, in subject curricula as well as seven intercurricular subjects; 2) satisfied and creative students that are the result of an inclusive and motivating environment for learning, and 3) motivated teachers who accept and use their competencies (knowledge, skills, autonomy and responsibility) in order to respond to challenges of the school in the 21st century in innovative ways, and especially the challenge of lifelong learning.

These goals are explicitly stated in the call for proposals to implement the experimental program “School for Life” so that schools can be informed on what comes next, and in order to organize the implementation, monitoring and evaluation of the results of the experimental programme. The call for proposals states the goals and tasks by referring to a strategic document:

"Goals and tasks. One of the main goals in the Strategy of education, science and technology (2014) is the implementation of the Comprehensive curricular reform that includes:

a) the development of basic competencies for lifelong learning;
b) clear definition of educational outcomes that are not exclusively cognitive in nature (knowledge), but in accordance with determining basic competencies for lifelong learning, including development of skills, points of view, creativity, innovation, critical thinking, initiative, entrepreneurship, esthetic evaluation, responsibility, relationships with oneself, others and the environment, conduct, and many others;
c) open didactic systems and systems of methods of teaching which allow early childhood educators, teachers, children and students freedom in choosing content, methods and forms of working;
d) clearly defined standards/criteria of development and appropriation of educational outcomes.

Given the aforementioned goals and tasks, the implementation of the experimental programme "School for Life" as the first step towards achieving the goal of comprehensive curricular reform, which means establishing a coherent and efficient system of education which suits the circumstances of a contemporary education which is suited for real life situations.

In accordance with the propositions of the National Curriculum Framework (2011) and Strategy of education, science and technology, and with the purpose of realization of the vision of curricular reform, the emphasis is placed on the focus of education in the Republic of Croatia towards the development of generic competencies. Competencies are an interlinked combination of knowledge, skills, attitudes and values.

Comprehensive curricular and structural changes should:

- provide children and young people with a more useful and meaningful education, according to their developmental age and interests and more suited to everyday life; education that will prepare them for contemporary life, the world of work and the continuation of education;
- ensure the strengthening of the role of teachers, expert associates and other educational staff in schools, as well as strengthening of professionalism, greater work autonomy, creativity in work, reduction of administrative tasks, motivated students and reduction in external pressures;
- allow parents to be more involved in the education of children and the functioning of the school, provide clearly defined expectations, offer more objective grading and evaluation, provide meaningful and frequent feedback on their children's achievements;
- ensure the basis for active, responsible and constructive activity of children and young persons in different communities;
- provide the economy with a better connection with the educational system as a basis for competitiveness.

The goal of the experimental programme is clearly expressed in the review of the applicability of new curricula and forms of methods of work, as well as new means of teaching while taking into consideration the following goals:

a) enhancing competencies of students when it comes to problem solving;

b) increasing the satisfaction of students with school and the motivation of their teachers.

The last goal has created many misconceptions because it was interpreted that the curricula are reviewed in practice, which was not the case because there is a special procedure regarding reviewing and adopting curricula which is prescribed in the Law on preschool, primary and secondary school education, and the Strategy. The experimental programme puts the emphasis on examining the conditions that need to be provided in schools and the training of teachers in order to achieve the goals of the reform. The disadvantages in implementation and to a lesser degree in the curricular documents themselves should be removed or moderated right away. The changes should not be postponed for a year or two into the experimental programme in order to make the final evaluation and new curricula.

Research questions

The following research questions arise from the previously mentioned goals:

1. Are the new curricula comprehensible to teachers and how are they implemented in practice?
2. Are the students satisfied with the new way of learning and teaching?
3. Are the teachers motivated for the new way of learning and teaching in schools?
4. What type of training is necessary to prepare the teachers for an effective implementation of innovative ways of teaching and curricular reform?
5. What type of equipment and textbooks are required for new curricula during the fourth industrial revolution?
6. Have the new curricula, innovative methods of learning and teaching, appropriate methods of evaluation and a change in the environment for teaching and learning in schools, resulted in the achieved educational outcomes connected to higher cognitive levels of problem solving and critical thinking?
7. How to connect the appropriate methods of teaching with the use of digital technology in an effective way?
8. How to organize the management of a school and the educational process in order to ensure a motivating and inclusive environment for learning and teaching?

These research questions are, explicitly or implicitly, built into the call for proposals to implement the experimental program “School for Life”, and they arise from the Strategy for science, education and technology. The reforms that are implemented in the Republic of Croatia are connected to strategic documents provided by the European Union: the most important one being the strategic framework for European cooperation in education and training (ET 2020). ET 2020 provides indicators that are regularly monitored. The indicators allow the comparison with other member states of the EU. However, a special emphasis is placed on the digital transformation of schools (I5 and I7) because of many European strategic documents. For example, the European Digital Press Report (2017) emphasizes that the speed of technological and digital changes has a profound effect on our economy and society and that schools should provide a better response to this new reality because the students will have jobs that do not exist today, and 90 per cent of today's jobs require a certain level of digital skills. Furthermore, innovation in the educational system that includes the application of new technologies in education helps improve the attainment of learning outcomes; raise quality and system efficiency (OECD, 2016).

In conclusion, the experimental programme's main purpose is to collect and share good practice in schools, as well as to identify risks and shortcomings in the application of new approaches. Its main purpose is not to review new curricular documents, but to monitor and evaluate the results provided by new concepts from the curricula in practice, and to determine what kind of conditions need to be ensured for the attainment of planned goals and results. Furthermore, it is especially important to verify what kind of teacher training we should have, and then conceive teacher training so that these new paradigms and concepts may be successfully implemented into school practices. We should also determine the type of equipment and textbooks, the role of principals in a school that strives for autonomy. We should establish how to encourage the freedom of teachers to choose the best for their students based on their expert competencies and general competence, as well as fully formed, and substantiated attitudes that are based on scientific knowledge and ethical norms. The whole "ecosystem" of the school is observed and evaluated; the things that work well in the actual environment, and things that need to be improved. The mentioned propositions are the line of reasoning purporting the preparation and implementation of curricular reform in all schools in the Republic of Croatia.

Scientific approaches, analysis and evaluation of results

The previous section describes how the experimental programme cannot be fully implemented as a rigorous scientific research, but the intention is to present and apply scientific principles and methods when possible. The theoretical and philosophical principle (according to Creswell, Philosophical worldviews, 2018) behind the preparation and implementation of the experimental phase, and then the full application of curricular reform, is mostly constructivism and partly pragmatism. The constructivist approach is especially prominent in the qualitative part of the research, which implies the understanding and inclusion of shareholders in co-creating the reform. On the other hand, the quantitative part of the research is directed towards identification, and later towards finding solutions, of problems, which become salient in the process of implementation, as well as determining the conditions needed for the successful implementation of reform processes. This is characteristic of the pragmatic approach to research. The use of quantitative and qualitative research methods helps to have insight into the practice and usable results, so from the scientific point of view it is a mixed method approach (Creswell, 2018).

Qualitative methods and the appropriate evaluation thereof provide a deeper insight into the practice of learning and teaching, and they are based on a constructivist perspective. Collecting qualitative data is implemented continuously and in a way that it has little effect on the processes of learning and teaching. In addition, different direct and indirect ways of gathering opinions, attitudes and suggestions from all of the participants in the reform are used. The goal is to obtain examples of attitudes, experiences and suggestions of teachers, students, expert associates, principals, but also parents, and consider them in the preparation phase of curricular reform, before entry into all of the schools in the Republic of Croatia. A good example of this are advisory visits to schools after which mentors write structured reports that are then processed and analyzed. The second example is collecting opinions of participants in trainings in virtual classrooms through a qualitative perspective, but also at regional meetings gatherings for collecting information by using evaluation questionnaires (suitable for analysis through quantitative methods) and allows the possibility of answering open-ended questions (suitable for analysis through qualitative analysis). One of the most important results are the answers to the question regarding the crucial areas where teacher training is needed. Areas that were deemed most important by teachers were: evaluation and grading based on learning outcomes, application of digital technology as support to the approach connected to teaching methods and didactics, as well as examples of classroom practice in the realization of certain

educational outcomes. These areas were given priority in teacher training which is done for the purpose of curricular reform implementation.

The pragmatic approach is reflected mostly in data collection at the level of using individual approaches in teaching, using appropriate equipment and textbooks, organization of the educational process, etc., in order to achieve the goals of the reform. These goals are the realization of higher levels of educational outcomes of students in solving problems and critical thinking, increasing student satisfaction in the process of learning, and motivating teachers to use innovative methods of teaching which are based on teaching through research, solving problems, encouraging critical thinking and using technology for raising motivation for studying and realizing learning outcomes.

Questionnaires are used for the collection of quantitative data that are delivered to schools in previously planned intervals, but also *ad hoc* questionnaires are applied when needed. The last category also contains questionnaires on the efficiency of new school calendars that are applied in 11 schools. Quantitative data is also collected through the Mobile Device Management (MDM) system that manages the functioning of all tablets, and is used for data collection on the way and frequency of tablet use, with appropriate administration and student protection in place.

Again, monitoring and evaluation should be continuous and applied in practice immediately. For example, the data on the way and frequency of tablet use provides answers to questions on the purpose of using tablets in the educational process depending on the age of students, subject and digital textbook or digital educational material. The result of this analysis is the decision that in so-called class education (1^{st} – 4^{th} grade of primary school) it is sufficient to have tablets for group work in the classroom, while for so-called subject education (5^{th} – 8^{th} grade of primary school) it is useful to provide individual students with tablets and other devices. Analysis has shown how much equipment the schools are lacking, what needs to be acquired, how many devices need to be bought so that students of lower socio-economic status have equal access to digital educational material as their peers.

3. Implementation of continuous evaluation

Evolution, and not revolution

Continued evaluation is a precondition for continued improvements because reform processes need to be cyclic and based on data, arguments and comparisons. Comparisons need to be made on a national, as well as international level. In the process of preparing, the reform, which entered schools in 2019 the priority, is the continued evaluation of the experimental program.

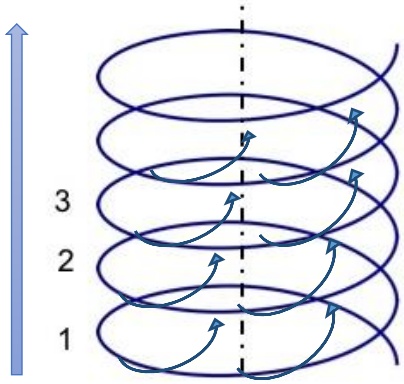

Image 2: Changes are cyclic and continuous

In the current situation, the curricula are changing once every 15 years, which is not good. The new curricula in in gymnasiums are currently replacing the teaching plan and programme adopted 25 years ago! In successful educational systems, the curricula change at least every four to five years so that they are regularly updated. It would be a good thing if some of these new curricula could be even slightly updated next year.

In general, the principle illustrated in Image 2 should be cyclical and continuous changes that should provide more space for autonomy, creativity and innovativeness in students, as well as teacher and all associates in schools. The changes need not be revolutionary, but they have to be thought out as an evolutionary process that leads to goal attainment.

Coordination of teams for evaluation

The process of monitoring and coordination of evaluation of the experimental phase of curricular reform is implemented by a special Committee for monitoring and evaluation (https://mzo.hr/hr/rubrike/eksperimentalni-program) which was selected by minister's decision at the national level. This Committee has an advisory role because the members are experts in the field of education and especially evaluation of results. Coordination is necessary because individual phases or themes of the experimental programme are being monitored, analyzed and evaluated by different teams according to their tasks and roles.

The continuous evaluation of the experimental programme is implemented by the following teams:

- National center for external evaluation of education that monitors the goals of the experimental implementation of the comprehensive curricular reform: achieving competencies of students solving problems by using PISA-like tests, satisfaction of students in school, as well as the motivation of their teachers through a designed questionnaire;
- External experts participating in the project "Support to the implementation of Comprehensive curricular reform (CCR)", that is comprised of the following topics: Understanding/Comprehension of new curricula; Identifying obstacles and initiators that influence the implementation of curricula; Evaluation the impression of students and parents regarding new curricula; Evaluation the success of the policy of curricula; Evaluation of support to teachers and schools;
- The Ministry of Science and Education, with the support of experts, based on qualitative data analysis from the report of the expert associates in the online environment for education. Another source for evaluation are questionnaires that provide answers to questions connected to the experimental use of new teaching material, use of equipment in the educational process, the volume and content of preparation of teachers and support to teachers; learning environment (organization of work in school), but also the general goals of the experimental programme.

Finally, Faculty of Humanities and Social Sciences in Zagreb – project team will make an integrated report on the evaluation of the experimental programme "School for Life" in the school year 2018/2019 that will encompass all the elements of evaluation in one publication. The Committee for monitoring and evaluation will participate in the making of conclusions and recommendations.

The timeline for data collection and evaluation

The collection of data is organized so that disruption to school processes is kept at a minimum. The schedule of data collection and the analysis of data is distributed over time in such a way that it coincides with certain events. For example, regional gatherings of teachers and expert associates pertaining to trainings, PTA meetings discussing the attitudes of parents towards the reform, completions of periods of education and the ability of international teams to participate in data collection.

The results of the evaluation are regularly published on the web site "School for Life" www.skolazazivot.hr, and the basic elements, modes of evaluation and the time of implementation are given in the Table 1. The last column specifies the links to research questions. A more detailed flowchart is shown on Image 3 and 4.

Table 1. Basic elements of evaluation

WHAT?	HOW?	WHO?	WHEN?	Research question
Conditions for the application of new curricula in practice • Education of teachers • Preparation of the learning environment	• Virtual surroundings • Advisory visits • Regional meetings • Focus groups • Semi structured interviews	• reviewers • experts form EU (SRSP EC) and experts from Croatia • Ministry of Science and Education	December 2018 March 2019	• I1 • I3 • I4 • I6 • I8
Methods of work • Student satisfaction • Teacher motivation • Problem solving	• Questionnaire on the pleasure of shareholders in experimental and control schools • Tasks for evaluating the ability to solve problems	• Committee for monitoring and evaluation • Center for external evaluation • MZO	February 2019 April 2019 July 2019	• I2 • I3 • I6
Equipment and organization in schools • Equipment • Textbooks • Handbooks on teaching methods	• Mobile Device Management (MDM) • Questionnaire on stakeholder satisfaction • Virtual classrooms – qualitative analysis • Focus groups	• CARNET • MZO	January 2019 March 2019 July 2019	• I5 • I7 • I8

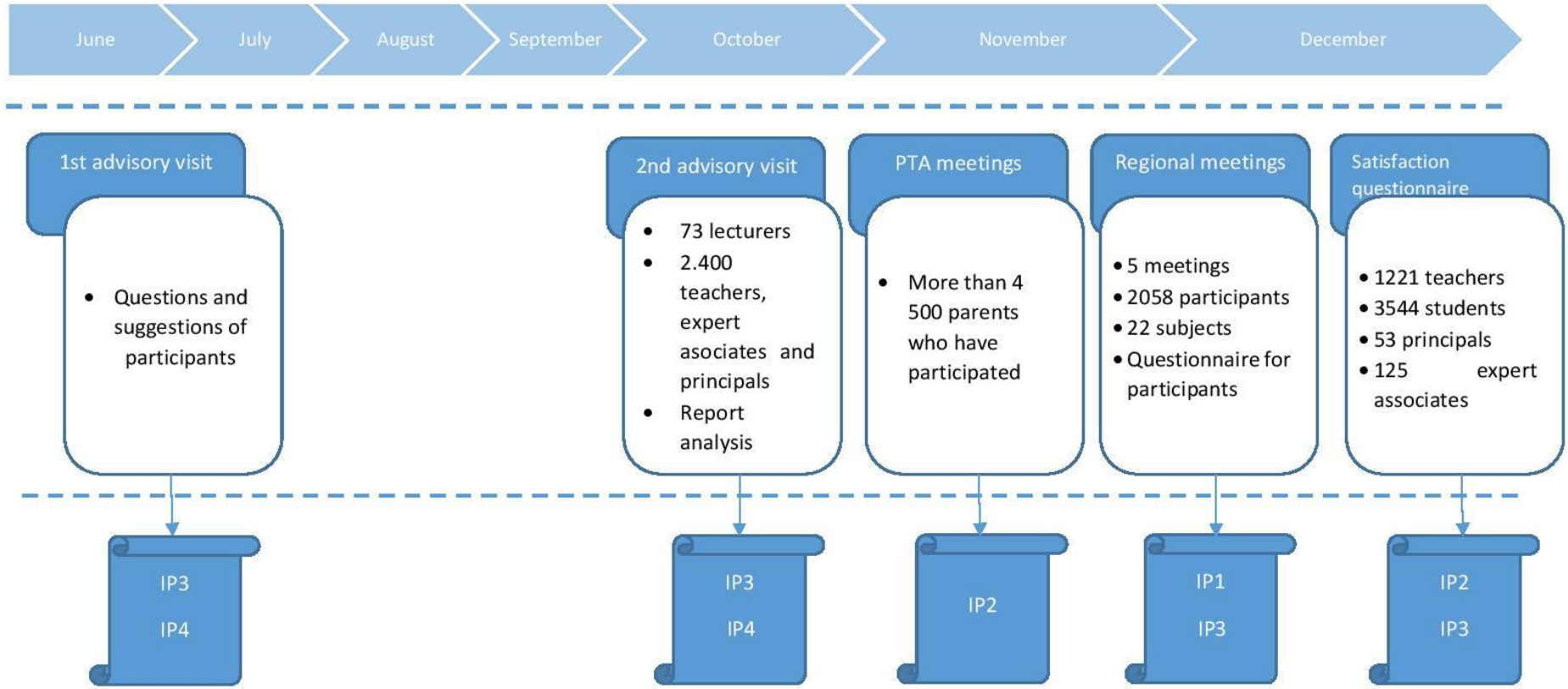

Image 3. Flowchart of basic elements of evaluation and responses to research questions for 2018

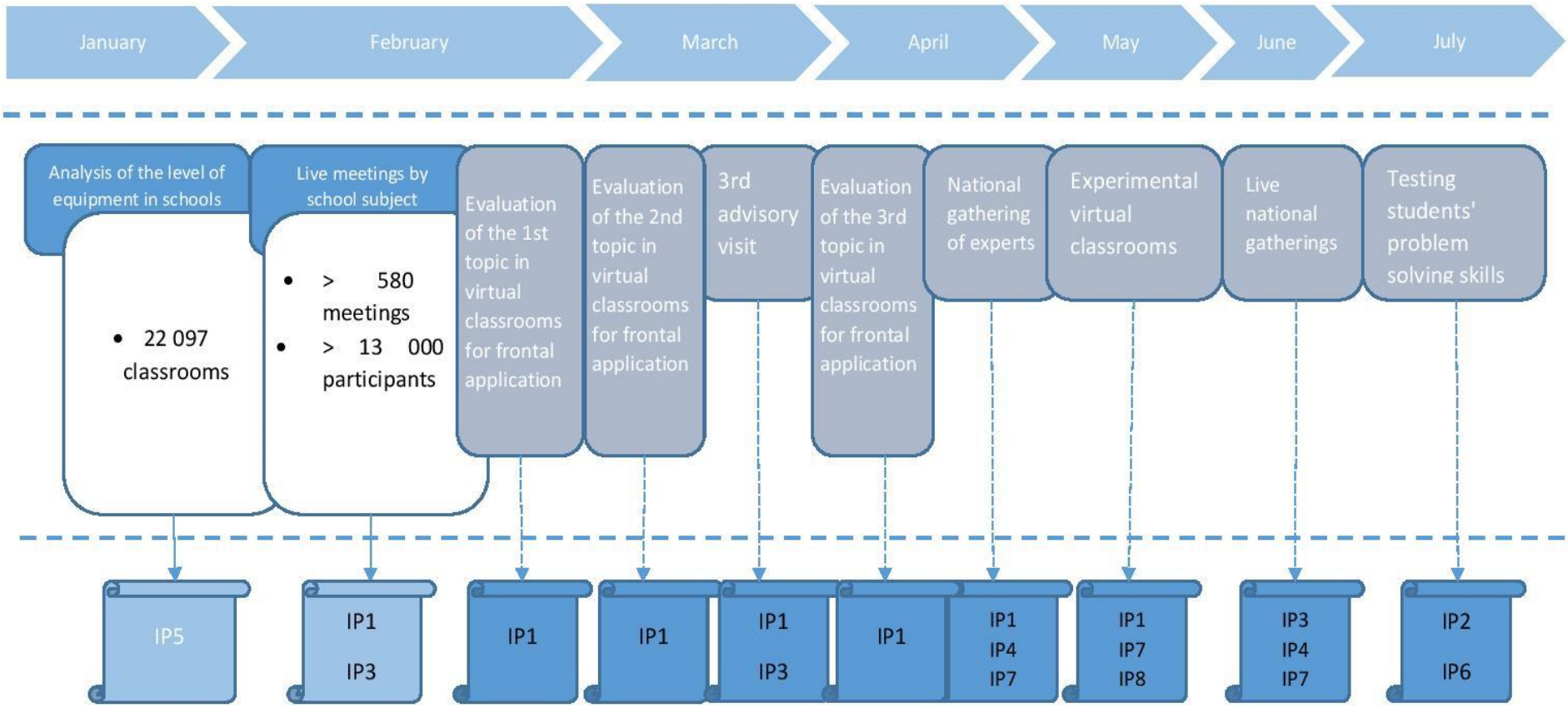

Image 4. Flowchart of basic elements of evaluation and responses to research questions for 2019

International comparisons and analyses

The most important goal of the educational reform is a better system, which gives better opportunities to all of the participants. Therefore, it is most important to compete with oneself. However, it is important to monitor international results and compare oneself with successful countries. This way the practice on the national level can be improved based on purposeful and well thought out inspirations that come from other comparable systems. Therefore, at the same time we have to monitor international trends and compare them according to results (for example PISA, TALIS, PIRLS, ICILS, TIMSS), as well as implement educational policies. These international comparative analyses should show in the middle term whether the reforms have achieved their goals that are connected to competencies of students in problem solving and critical thinking (for example, periodical PISA and TIMSS tests).

Since the results of the reform in education are observed only after a few years, the first referential year for observing at least partial results on a national level will be 2021 when the first PISA test after the reform is conducted. More realistic and reliable results are expected in 2024, when the first next PISA test will be taken. However, greater leaps can be expected only if other conditions are fulfilled, such as increased investments in education with more efficient spending of funds in the system itself, as well as real recognition of education and science as national priorities. The sustainability of changes will be ensured with an important change in the way the initial education of teachers and the system of lifelong learning for teachers. Only this type of approach gives a chance to teachers to embrace freedom of choice and professional autonomy that provides every student with the chance for development and advancement.

Regardless of the populist ideas, the knowledge corpus and good practice on what works well in education and how to implement reform is growing, but there is the problem of time in which the results of the reform are observed (Schleicher, 2018). This time is measured on a scale of at least a few years, and during that time, we cannot wait, but steps should be made towards advancement and improvement of the system.

Namely, today during the fourth industrial revolution, changes and reform cannot be implemented every ten years (or even 25 years as is the case of our gymnasiums), but have to be continuous and take into consideration a top down management approach but also creativity and innovation that come from classrooms and schools.

The most important EU strategic document is *The strategic framework for European cooperation in education and training (ET 2020)*, which clearly defines measurable indicators of success linked with four main goals. These goals are encouraging lifelong learning and mobility, improving quality and efficiency in education, promoting equal opportunity, social cohesion and active citizenship and improving creativity and innovativeness, including entrepreneurship, on all levels of education. Within this context, we monitor the success of reaching a goal of having less than 15 per cent of fifteen-year-olds that do not achieve the basic results in literacy, mathematics and science, and this is one of the long-term priorities in Croatia, and the curricular reform needs to contribute to this goal. Of course, the measuring of the results of curricular reform in this sense is not possible over a period shorter than five years.

Furthermore, *European Digital Progress Report* (2017) shows that Croatia, according to the DESI (Digital Economy and Society Index) is among the worst in EU (23rd out of 28) and that human capital has crucial value. Therefore, it is important to monitor this indicator. The *Digital Education Action Plan 2018* emphasizes that despite the fact that more than 80 per cent of young people in Europe use the Internet for social activities, and digital technology is only marginally used for learning. Three

priorities in the Action plan are prominent: 1) better use of digital technologies in learning and teaching; 2) the development of digital competencies and skills for digital transformation; 3) improvement of education by better use of data analysis and forecast, and measures have been provided to help EU member states to address the mentioned challenges. For example, one of the measures is to implement programming in all schools in Europe which has been achieved by changing the Computer science curriculum in the whole education system by making computer science mandatory for all 5th and 6th grades of primary schools in the Republic of Croatia.

A significant theme in international comparisons when it comes to the Republic of Croatia are specific recommendations of the European Commission regarding education and the further implementation of curricular and educational reform (recommendations from July 17, 2007 – 2017/C 261/10, *Education and training monitor for* 2017 – Croatia), and *Education and Training Monitor 2018* issued November 2018. The last Monitor for Croatia gives encouragement for the education reform and calls it ambitious, which implies that the direction of the reform should remain the same.

4. Conclusion and further steps

Almost all states in the world today are planning and/or implementing significant education reforms (Schleicher, 2018). Extremely fast changes demand new agile methods of implementing reform in order to respond to all economic, technological and social challenges, but also needs for the development of individuals. Changes are more or less implemented as continuously evolving processes, and not evolutionary jumps. Changes are made continuously, and include the idea of reform co-creation by all relevant stakeholders in the system. However, with years, and even decades of education without significant changes, we are taking the risk that formal education and schools become relics of the past. However, greater reform intervention demands periods of examination of concepts and conditions for their implementation in practice.

The experimental programme of curricular reform called "School for Life" does not have the task to answer the question *whether we need the reform,* because the answer to this question was made in when the Croatian Parliament adopted the Strategy of education, science and technology in 2014. The question is:

> *How to implement the curricular reform so that all students have equal opportunities and that the goals of the reform are realized?*

In order to answer this question, an experimental programme was developed which included 74 schools from all counties in Croatia. This programme is continuously monitored, evaluated and improved, and the results of best practice and evaluation are built into the preparation for the implementation of the comprehensive curricular reform in all schools in the Republic of Croatia since the school year of 2019/2020. However, we need to be realistic with regard to the expected results, or goals of the reform, because they can hardly be achieved within the timeframe of a year or two.

The precondition for the reform are good foundations in the curricular documents. After the long process of preparation, public and expert discussions and reviews, by the end of January 2019, 37 subject curricula have been adopted, as well as curricula for intercurricular subjects for primary and secondary school, as the foundation for reform processes. However, key success factors are training of teachers, a motivational environment for learning and teaching with the appropriate equipment and high quality educational material.

The most important success factor for the reform are well-educated teachers, expert associates and principals who are confident when it comes to their knowledge and skills, and are capable of autonomous decision making when it comes to the appropriate educational approach in their classroom and their school by putting each student in the center of the teaching and learning process. Therefore, almost a year before implementing the curricular reform in all schools we have started accelerated trainings of teachers with the goal of including 36 000 teachers in virtual classrooms and conducting 1 000 live trainings by the end of February 2019. When conducting the teacher training we keep in view the results of monitoring and evaluation of the "School for Life" experimental programme.

The second important success factor is a well thought out environment for learning and teaching, which includes appropriately equipped schools. The Ministry of Science and Education had within a year's time (December 2017 – December 2018), invested around 105 million kunas into school equipment (45 million for computer science, 15 million for didactic and other special equipment for science, 30 million for books and other materials for experimental schools, 5.25 million for library books, 10 million for miscellaneous items). In 2019, we expect an investment of 150 million in all schools in Croatia, which does not include mandatory textbooks and infrastructure.

Third success factor are high quality educational materials that are well prepared with respect to contemporary teaching methods and are implemented along with the purposeful use of digital technology. By the end of 2018, the new Law on textbooks and other educational material has been adopted. A call for proposals for textbooks that need to follow new approaches prescribed by the Law and new curricula that were adopted in January 2019.

Finally, in order for the reform to succeed, it is important to maintain social dialogue on the necessity of the reform, to avoid unnecessary ideological conflict and using the reform in daily political conflicts, and to work on finding high quality solutions that can be implemented in practice in schools in Croatia. The focus of the entire reform process has to be the future of our children and creating preconditions for their professional success, social engagement in a democratic society, development of personality and talents, as well as the development of all potential that makes children grow up to be happy people.

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The material has been prepared by:

prof. dr. sc. Blaženka Divjak

dr. sc. Katarina Pažur Aničić

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