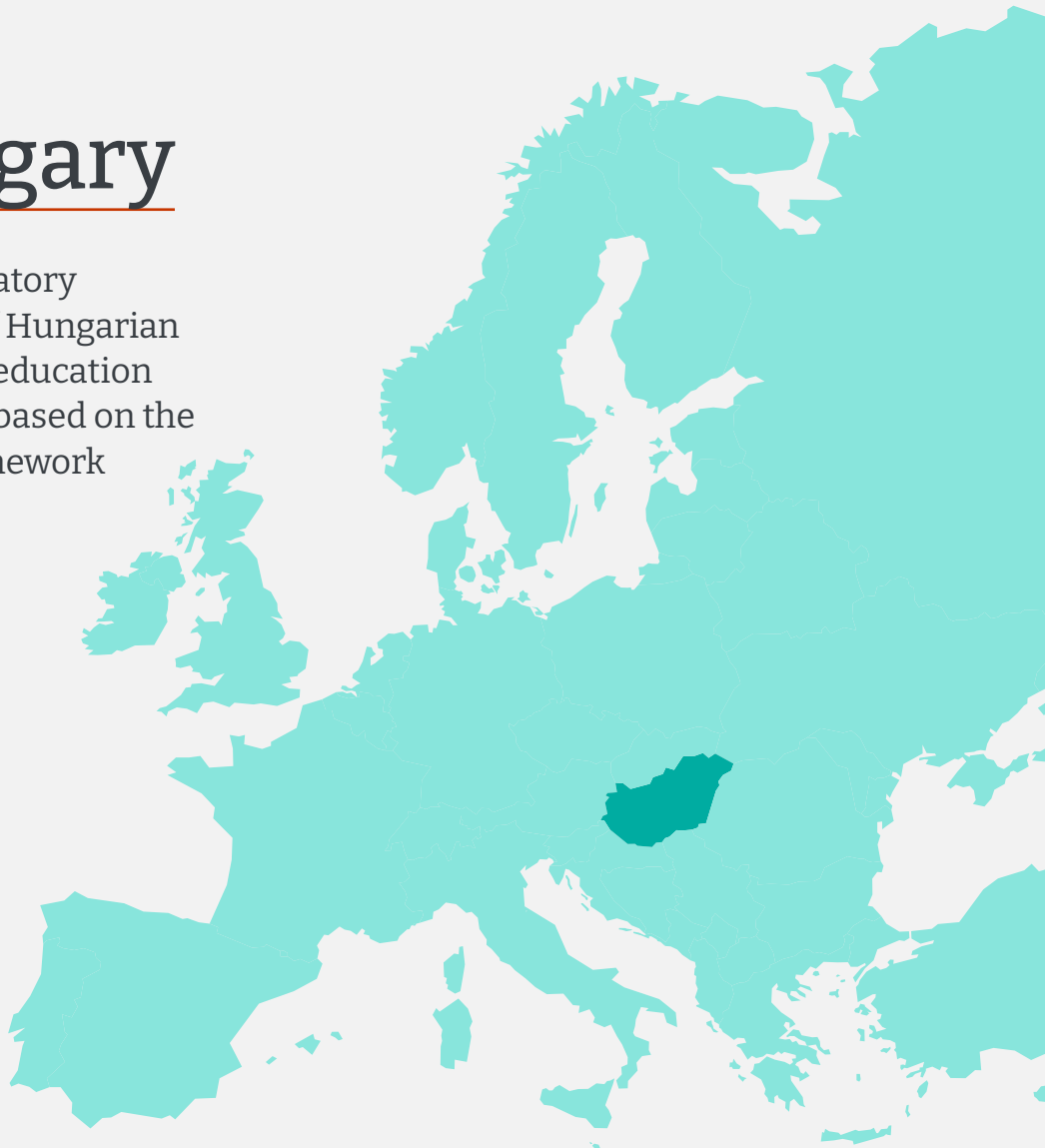


Hungary

Some regulatory elements of Hungarian pre-school education (ISCED 0.2) based on the quality framework



| | | |
|----------|---|---|
| 1 | Which department/ministry does ECEC sit under? | Ministry of the Interior |
| 2 | What programs/settings exist for children between the ages of 0-7? | Nursery (from 4 months to 3 years) Kindergarten 3 to 6 years |
| 3 | What percentage of children are in ECEC centers? | 96% of children aged 4 to 6 attend ECEC centres (2021) |
| 4 | Link to national/local curriculum for ECEC | Click here for the national curriculum |
| 5 | Who is responsible for inspecting/monitoring of ECEC? | Ministry of the Interior |

AUTHORS



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Some regulatory elements of Hungarian pre-school education (ISCED 0.2) based on the quality framework

ABSTRACT

Hungary has traditionally been committed to providing high-quality, child-centred early childhood education. The institutional system of early childhood education and care in Hungary is divided into two parts: nursery (ISCED 0.1) and kindergarten (ISCED 0.2). The Council Recommendation of 22 May 2019 on High-Quality Early Childhood Education and Care Systems (2019/C189/02) contains a quality framework whereby five key components have been identified: access to services, staff, curriculum, monitoring and evaluation, and governance and financing. The present study, which covers four dimensions, sheds light on the situation, recent measures, and expected challenges of some of the elements of this proposed quality framework in pre-school education in Hungary (ISCED 0.2). In Hungary, several elements defining pre-school education that represent quality have been subject to definitive regulation. These reinforce the preventative role of pre-school education and the associated responsibilities, while at the same time signalling challenges in making pre-school professions attractive and valued.





Introduction

As the location of the first kindergarten in central Europe, Hungary has a tradition of being committed to providing high-quality, child-centred early childhood education, complemented by comprehensive family policy measures. The institutional system of early childhood education and care in Hungary is divided into two parts: nursery (ISCED 0.1) and kindergarten (ISCED 0.2)

The Council Recommendation¹ of 22 May 2019 on High-Quality Early Childhood Education and Care Systems (2019/C189/02) contains a quality framework whereby five key components have been identified: *access to services, staff, curriculum, monitoring and evaluation, and governance and financing.*

In Hungary, several elements defining pre-school education that represent quality have been subject to definitive regulation. The direction of these interventions can be identified by one of the five dimensions defined by the recommendation, which can be integrated into a framework. The recommendation states that each nation should develop its own framework in line with these foci. At the same time, there is a lot involved and many challenges to overcome in making the career of a kindergarten teacher in Hungary attractive², as well as in the further specification of kindergarten education as part of the national public education system.

This study presents a domestic regulatory element for kindergarten education (ISCED 0.2) related to the three elements of this

proposed quality framework³ (curriculum, monitoring and evaluation, access to services) which determines the provision of high-quality early childhood education. These include the revised *National Basic Programme for Pre-school Education* published in 2012 and adapted to the spirit of the times, and the *obligation to monitor a child's development*, making early diagnosis possible for all children. In Hungary, the introduction of compulsory kindergarten education from the age of 3 in 2015 was crucial. Thanks to professional, high-quality care, it can help the development of disadvantaged children in particular. As a model developed for the system-wide monitoring and evaluation of staff, the regulation of the supervision of kindergarten education has been in operation since 2016. In 2019, the National Assembly passed a minor amendment to the regulation concerning the duration of compulsory schooling, as well as the coordination of schooling in Hungary. This strengthened the role of the child⁴ and of compulsory schooling in the transition from kindergarten to school.

In this article, two of these regulatory elements are presented in more detail, the *National Basic Programme of Kindergarten Education*, which functions as a curriculum, and *the mandatory requirement to monitor the development of the child* as a quality component in monitoring and evaluation. The remarkable innovation of the latter, the kindergarten module of eDia, will be briefly presented. This supports the Hungarian practice and was developed by the Educational Theory Research Group of the University of

¹ COUNCIL RECOMMENDATION of 22 May 2019 on High-Quality Early Childhood Education and Care Systems (2019/C189/02)

² (17)

³ (16)

⁴ (12)





Szeged and the Skills Development Research Group of the Hungarian Academy of Sciences

1. Framework of ECEC quality determinants

The Hungarian regulators of kindergarten education allow for a framework-like interpretation of the quality determinants of the council's report.

This study briefly describes some of these and looks at them in more detail in two dimensions: the issue of "*Curricula*" (*National Basic Programme for Kindergarten Education*) and "*Monitoring and Evaluation*", which relates to the domestic aspects of kindergarten education (*Monitoring Child Development*).

In order to elucidate the connections between these two framework elements and the other elements, we will briefly look at the regulatory environment of all five elements, without going into a detailed discussion.

1.1. Access to early childhood education and care⁵

According to the Hungarian basic law, every Hungarian citizen has the right to education. The basic law is the highest judicial level in Hungary and it is not possible to enact legislation that is contrary to its content. It forms the basis of Hungary's legal system (The Basic Law of Hungary, 2011). Hungary guarantees the

right to education by expanding and generalising public education, through free and compulsory primary education made accessible to all, through higher education accessible to all according to their ability, and through financial support for those receiving education as defined by law.

1.2. Staff: training and working conditions of staff responsible for early childhood education and care

In Hungary, a role in early childhood education requires a specific qualification, both in nursery and kindergarten education. The training requirements of early childhood educators and kindergarten teachers are supplemented by a system of promotion (teacher career progression) and in-service training during the period of work. In kindergartens, the position of kindergarten teacher can be filled by someone with a (higher) kindergarten teacher qualification. The position of early childhood educator can also be filled by someone with a vocational qualification in higher and secondary education. The Public Education Act stipulates that the right and obligation of a teacher to participate in in-service teacher training requires ongoing training. The in-service training obligations of pre-school teachers are the same as those of teachers and educators, as well as of teachers working in other public educa-

tion institutions. The obligation of the professional development of teachers in Hungary is set forth in a government decree. The decree defines two basic forms of teacher training, compulsory in-service training every seven years and in-service training for teachers.

1.3. Defining curricula

In the case of kindergarten education in Hungary, the curriculum refers to a two-level regulation whereby the first, central level is represented by the national basic programme of kindergarten education – the so-called kindergarten framework curriculum – and the second level is represented by the local pedagogical programmes of each kindergarten, which are local curricula that must be in line with the aims and tasks of central-level regulation.

1.4. Monitoring and evaluation

In 2015, the education management introduced a new structured network of institutions to serve as a management and control model to improve the quality of the Hungarian public education system and its efficiency, effectiveness, and equity indicators. As a result, like most other Member States of the European Union, Hungary has a Self-Assessment Manual (2021). This is a uniform, public set of criteria for regular self-assessment-based external professional audits and evaluations based on a system of

⁵The concept of access is defined in the Public Education Act as disproportionate unencumbered access



expectations and tools. This in turn forms part of the national pedagogical-professional audit (supervision). This focus of this study is not on the experience of system-wide monitoring, but on the individual work of the kindergarten teacher and the practice of directly monitoring child development.

1.5. Governance and financing

At present, nursery and kindergarten education is managed by different government agencies. While the Ministry of Culture and Innovation is responsible for ensuring nursery care, kindergarten education belongs to the Ministry of the Interior as part of public education. Kindergartens can be maintained by several organisations in Hungary. Although most kindergartens are maintained by municipalities, the number of church nursery schools has also increased significantly in recent years. The Budget Act determines the type and amount of subsidies to be paid from the state budget to local governments in a given year, and this legislation also determines the procedure for using the subsidies.

The financing structure of the local governments maintaining the majority of kindergartens has changed, with the normative form of financing changing to task-based financing. All of this has a significant impact on the operation of kindergartens and schools (Kalmár, 2018).

2. Some elements of the quality framework

According to the council recommendation (2019), “a quality framework or equivalent document can be an effective factor in the proper regulation of early childhood education and care.” There is no developed framework for early childhood education and care

“Outlines the tasks of kindergarten life, the rules of organising kindergarten life, the forms of activities of kindergarten life, the tasks of kindergarten teachers, and the characteristics of development at the end of kindergarten education.

in Hungary. There are institution-specific framework regulators that function as curricula.

The purpose, task, content, and activities of kindergarten education are defined by the National Basic Programme of Kindergarten Education (hereinafter “the basic programme”), while those for nursery education are defined by the National Basic Programme of Nursery Education.

These regulators are constantly reviewed and amended to in order add content identified through the quality frameworks. The most basic regulatory element in kindergarten education is *the National Basic Programme of Kindergarten Education*.

2.1. National Basic Programme of Pre-school Education

The basic programme applies to all Hungarian kindergartens. It provides a clear overview of children and kindergartens and outlines the tasks of kindergarten life, the rules of organising kindergarten life, the forms of activities of kindergarten life, the tasks of kindergarten teachers, and the characteristics of development at the end of kindergarten



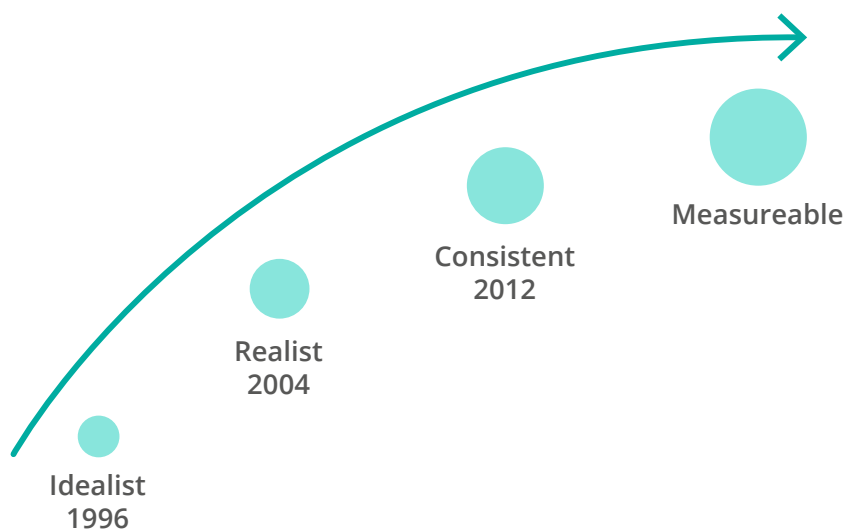


Figure 1. *The history of the development of the basic programme*

education. The basic programme provides a level of professional quality mandated by way of a government decree that kindergartens must meet, adapted to their local environment. Adaptation to the local environment can be established by way of the kindergarten's institutional-level pedagogical programme.

The National Basic Program for Kindergarten Education, was written in 1996 and has been amended several times since then. As a government regulatory document, it prescribes high professional quality. Its content is in line with some of the quality criteria of the council report (e.g. child-centredness, preventative measures, the key role

of the family). Other basic issues (monitoring, evaluation, children with special educational needs, supportive working conditions, etc.) are governed by other sectoral legislation. The identifiable nature of the basic principles of quality is a guarantee that European and domestic values are reflected in Hungarian kindergarten education in all the institutions that provide it. It is stated that "in addition to the professional autonomy of the individual institutions and the diversity of pre-school education, the general professional demands that society formulates in respect of kindergarten education for the harmonious development of the child shall prevail." (363/2012. (XII.17.) Government decree, 2021).

In addition, the basic programme is a key document for external professional audits and evaluations based on self-evaluation, and for national pedagogical-professional audits and supervision (Self-Assessment Manual, 2021). The professional basis of the study supervision is provided by way of the general pedagogical aspects, the value system of the National Basic Programme of Kindergarten Education, and the own value system of each institution (Introduction to 363/2012. (XII.17.) Government decree, 2021). We are at the end of the third stage in the history of the development of the basic programme, in which the institutions have gained at least two decades of experience in its implementation and have been involved in system-level monitoring and evaluation for several years (Figure 1).

The basic programme defines the principles of pedagogical work in kindergartens in Hungary, building on the traditions, values, national peculiarities of the history of Hungarian kindergarten education, the results of pedagogical and psychological research, and the internationally recognised practice of education. In defining the pedagogical principles of kindergarten education, it must be assumed that a) the child, as a developing person, is entitled to loving care and special protection; b) the upbringing of a child is primarily the right and duty of the family, in which kindergartens play a complementary role and sometimes



“All children receive an equally high-quality and loving education and that their existing disadvantages are reduced.

work to compensate for disadvantages; (c) pre-school education should aim to promote the full development of the child's personality, while respecting human rights and the rights of the child; in such a way that all children have an equal opportunity to receive a quality education (Introduction to 363/2012. (XII.17.) Government decree, 2021).

According to the basic programme, different (e.g. innovative) pedagogical aspirations may appear in kindergarten education, as the basic programme ensures the enforcement of the pedagogical views, values, and methodological freedom of kindergarten teachers, and contains restrictions only for the protection of the child's interests.

The basic programme states that kindergarten education is child-centred and inclusive, and accordingly seeks to promote the development of a child's personality, ensuring that all children receive an equally high-quality and loving education and that their existing disadvantages are reduced. There is no room for any prejudice to unfold (363/2012. (XII.17.) Government decree, 2021).

The fund programme, which has gained stability in its current form, operates in an ever-changing legal environment. It is important that problems that arise in the operation of a high-quality early childhood care system are identified and that a collaborative solution is found. At present, we need to address

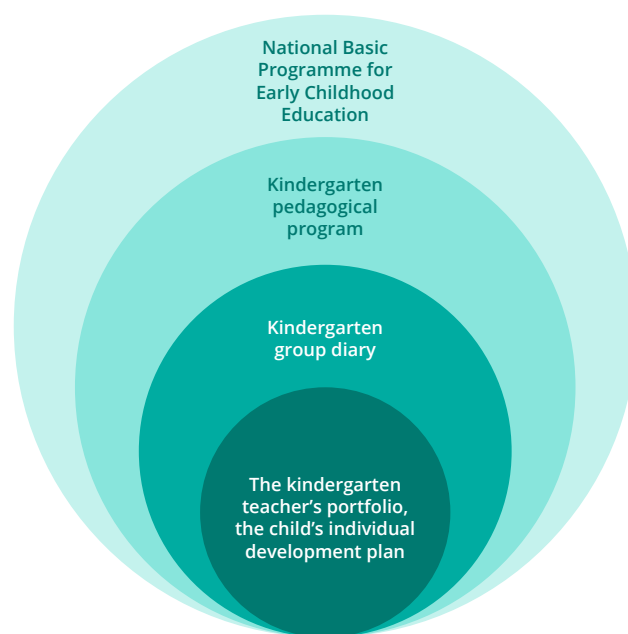


Figure 2. Compilation of documents defining the professional activity of a kindergarten teacher (Szent-Gály, 2018)

two major issues. One is the growing need for inclusive care for children with special educational needs, which we will not cover at this time. The other relates to the regulation of the outcome of kindergarten education, which is closely related to the institutional practice of monitoring child development.

2.2. New issues in output control

25 years ago, the nature of the framework of the basic programme marked a significant change compared to its predecessor, the Kindergarten Education Programme, which has been in force since 1989. This programme detailed the expectations for each age group and the levels of development to be achieved. Due to its decentralised nature, the basic programme records the characteristics of development as general output characteristics by the end of kindergarten. These are not standardised skill levels, but guidelines for a child's physical, mental, and social maturity.



Although this approach to output control⁷ provides considerable room to manoeuvre in interpreting the maturity to be reached by the end of pre-school, there is no measurable standardised expected value associated with the characteristics. An example from the normative text reads: “The intentional attention that forms the basis of learning appears, the content and scope of the attention gradually increases, and it becomes easier to share and transfer it.” In other words, there is no age-related expected range (time interval) of intentional attention and the extent of attention in the framework regulation (also for other abilities).

Judging the appropriate development of skills is down to the competence of the kindergarten teacher. Where suitability for the school lifestyle is in doubt, the child will be examined by the pedagogical services and the necessary development intervention and/or a further year of pre-school education will be determined.

Consequently, the regulation of the output of kindergartens in Hungary provides freedom in terms of time and space for the development of skills at the child’s own pace, but at the same time an important task of the kindergarten is to prepare

for a school lifestyle. Adaptation to a school lifestyle is slow and is interpreted by the basic programme as a unique, specific maturation process of the child. At the end of pre-school, the child enters a process of slow transition from kindergarten to school in which he or she can gradually adapt to the requirements of school. (National Public Education Act, 2011, 8§).

Primarily, this psychological illustration of education, and the diverse pedagogical culture of the institutions is the reason for there not currently being any uniformly applicable measurement and evaluation system for certain abilities of children in kindergarten education. In the cases in question (e.g. maturity for a school lifestyle), the expert opinion of the pedagogical service that decides. In addition, however, monitoring the child’s development is an important and mandatory task⁸ which the parents should be regularly informed of.

If we look at the use of professional services, the demand for the operation of diagnostic measurements supporting output control is increasing.⁹ Consequently, a significant proportion of kindergartens have developed or adapted some kind of measurement tool to test their suitability for the school lifestyle.

Until 2018, children could start school at the age of 6 or 7 to ensure that they had reached the required maturity, based on the opinion of the kindergarten. This changed slightly in 2019, as it appeared that many people abused this flexibility to the detriment of children. Now, in order for a child to remain in kindergarten after the age of 6, the parent must submit an application to the Education Office (National Public Education Act, 2011, 45§).

3. A basic criterion: monitoring children’s development

The introduction of the above procedure has aroused interest in monitoring the development of the child’s abilities and possible local pre-school practices for measurement and evaluation. The monitoring of children’s abilities and the practices for the measurement and evaluation of kindergartens was brought to the forefront. In Hungarian practice, the two elements mentioned are separate from each other, because while the measurement of a kindergartener’s abilities (through the use of diagnostic tests, criteria, or norm-oriented assessment forms, for example) is not mandatory, the monitoring and documentation of a child’s development are.


This documentation contains: (1)

⁷ By output regulation, we mean the system of conditions laid down by law for all kindergartens, i.e. the content of the child’s level of development in the transition from kindergarten to school.

⁸ provided for in a ministerial decree

⁹ Monitoring the Development of Pre-school Children, Budapest Pedagogical Education Centre, 2nd revised edition, 2019. 7.o





the child's developmental status; (2) the developmental process; (3) the direction of differentiated development; (4) the child's medical history; (5) the indicators of the child's intellectual, mental, social, and physical development; and (6) the findings of the kindergarten teacher and an expert committee, and interventions which support the child's development. This documentation also contains notes on informing the parents.

In Hungary, the monitoring of the development of kindergartners and the regular informing of parents are regulated by a ministerial decree (20/2012 (VIII.31.)), so early diagnosis based on the observation and anamnesis of the kindergarten teacher may be possible for all children from the age of 3.

The pedagogical professional services carry out screening examinations focusing on the speech and language development of children between the age of 3 and 5. The focus of speech screening at the age of 3 is on language development (receptive and expressive language), while the focus of screening at the age of 5 is primarily on speech articulation as well as on prereading and prewriting/fine motoric skills. Based on the results of these screenings, further logopedic examinations should be performed as necessary, and further special educational, psychological, and medical examinations should be initiated (15/2013.(II.26.) EMMI rendelet 25.§(3)).

A few years ago, the former "personality development diary" evolved into a mandatory document for monitoring kindergartners' development, usually called a "Development Diary". A large number of kindergartens, in addition to this document, use a valid assessment tool for measuring kindergarteners'

cognitive, affective, and motoric skills. Ideally, the two are interrelated, and the measurement results support a developmental intervention.

The development diary contains four distinct threads: (1) results of the obligatory logopedic screening; (2) the results of the non-compulsory screenings and examinations of the pedagogical professional service (based on the initiative of the kindergarten teacher and/or the parents) – the proposed developmental method; (3) mandatory monitoring of kindergartens/kindergarten teachers following the regulation, developed using their methodology and/or the results of test-based assessments – proposed development; and (4) the content and results of the proposed improvements resulting from the above three condition surveys.


The complexity of the system requires effective co-operation between parents, kindergarten teachers, staff of the specialist services and, in the case of maturity for a school lifestyle, between the officials of the Educational Authority.

3.1 Rules and difficulties in the monitoring process

Although there is no common, mandatory method for documenting the development of kindergarteners, several sample documents are available which enable the creation and dissemination of innovative good practices, and allow for corrections, such as in the determination of the monitoring criteria.

The mandatory monitoring of kindergarteners' development also causes dilemmas for researchers dealing with early childhood assessment. The questions are caused by a lack





of definitions for the concepts of school readiness and maturity for a school lifestyle. For example, there is no clarification on which components should be measured or whether certain components are more important than others. Phonological awareness, early mathematic skills, and thinking skills could be easily measured by way of tests, while in other areas the only appropriate solution is the subjective observation of kindergarten teachers. The measured and observed areas are not as distinctly separate as these few sentences may suggest, as each component of sociality (e.g. task performance) may be an important consideration in answering tasks.

“The mandatory monitoring of kindergarteners’ skills has opened up a new approach and new possibilities in the field of measurement evaluation.

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A wide range of measuring instruments are available to teachers, and institutions can choose which ones to use. However, the recording of several tests requires special qualifications (e.g. a psychological certificate).

Presumably, the choice between subjective observation and a valid assessment method is because kindergarten teachers are conditioned for the full development of the child’s personality, which is also reflected in the National Basic Programme of Pre-school Education. At the same time, a relevant criticism is the questioning of objectivity: “However, the question arises as to the accuracy with which the subjective diaries completed by a kindergarten teacher provide the standard and results of development.” (Apró, 2013)

3.2 First steps of assessment methods

On average, a healthy child becomes fit for school around the age of 6. Development monitoring is intensified for children who have some kind of impairment. When making a later diagnosis, it is very important when and in what situation the teacher/service staff noticed the first signs. Development logs indicate the child’s current stage based on the observation of their ability level. Follow-up involves continuous monitoring and is primarily suitable for making significant deviations visible and signalable in time. In most cases, a kindergarten teacher can note five skill levels: *emerging, basic level, close to average, above average, and outstanding*. One of the most commonly used templates includes a methodological recommendation and development suggestion for tracking ability development, which helps the kindergarten teacher select the child’s ability level. From here, in essence, the ability of the kindergarten teacher to identify the child’s ability level determines the level at which the child’s particular ability is classified. The manifestations of the abilities are shaped by several factors (e.g. the circumstances and participants of the observation situation, the current stage of the child, the factors influencing the kindergarten teacher).



In Hungarian practice, two models can be observed in relation to monitoring and measurement: one model states that the current state of children's development is recorded by way of prepared or adapted documentation every year and if, for example, there is a suspicion of partial disability or behaviour disorder, they shall inform the competent pedagogical professional service. Special education teachers and a psychologist of the mentioned institute then measure the child's skills and determine the necessary development. In the other model, the kindergarten performs both the measurement and the observation, and based on this then determines the necessary development and analyses the results.

3.3 Challenges in documentation management

Observations require extreme concentration from kindergarten teachers because, in the continuous presence and activities of 20 to 25 children, a certain ability level of a child must be identified.

It is important that the observational aspects are interpreted within the same framework and that the definitions of the concepts are accurate. This requires the regular collaboration, review, and ongoing training of kindergarten teachers. Apró (2003) has pointed out that although educators consider documentation to

be important, everyday administration imposes a significant burden on them. Overall, the "follow-up obligation" introduced 10 years ago also contributes to early diagnoses. Unfortunately, the number of children and students with special educational needs is increasing, and consequently the professional needs and workload of the pedagogical professional services are also increasing (Central Statistics Office, 2022).¹⁰

In addition to the available human resources, quality care can also be supported by way of careful regulation. The provision related to compulsory schooling – according to which a child who stays in kindergarten at the request of a parent for an additional year – should involve special developmental activities for the reorganisation of the kindergarten, with the aim of increasing the quality of kindergarten education.

A well-designed, easy-to-use, and uniform measurement tool would be needed to monitor progress and measure school readiness skills.

The nature and complementary role of measurement as an activity tool is emphasised in particular because the basic values of Hungarian kindergarten education continue to be free play, movement, support for learning through activities, love and respect for the child, and supporting

the child's self-development.

The pre-school module of the eDia system developed by the MTA-SZTE Research Group on the Development of Competencies and the SZTE Centre for Research on Learning and Instruction is an innovative, online platform that provides methodological support for examining children's cognitive abilities, enabling it to complement development monitoring and function as a measurement tool in the transition between kindergarten and school.

4. The eDia system as a supporter of children's development/diagnosis

Numerous research findings indicate that children's development of school readiness skills plays a key role in their later school abilities. Therefore, it is advisable to start personalised development as early as possible, which requires appropriate feedback mechanisms: we need to identify a diverse picture about each child's abilities, see the differences between children, and have the right tools to examine their development. However, if children solve tasks on paper, and their school maturity skills are assessed in a face-to-face way, data collection could be a time-consuming and strenuous process for kindergarten teachers. Computer-based assessment can provide solutions to these problems.

¹⁰ Number of children and pupils with special educational needs by type of disability https://www.ksh.hu/stadat_files/okt/hu/okt0006.html (utolsó letöltés: 2022. 08. 23.)



The main goal of the development of the eDia system (Csapó & Molnár, 2019) was to explore and to measure the abilities of children in grades 1 to 6. Students were measured via the online assessment system in the three main fields of education – mathematics, reading comprehension, and science – along three dimensions of knowledge (the internal/psychological, the disciplinary/content, and the social and cultural/application dimensions) (Csapó & Molnár, 2019). Educators received immediate and individual feedback on children that could be easily incorporated into the differentiated development methodology.

Seeing the advantages and objectivity of the system from 2014, it was possible to expand the system to kindergarteners. The development of the system facilitated a tablet-based testing format, allowing kindergarteners to solve play-based tasks using touch-screen devices. With the help of headphones, it was possible to test up to five children simultaneously. The system offered a faster, more playful testing method for kindergartens.

4.1. Using the eDia system in kindergarten

The organisation of the kindergartens in the sample came about during the work of the MTA-SZTE Research Group on the Development of Competencies and the SZTE Centre for Research on Learning and Instruction.

The tests of the School Readiness Measurement Toolkit provide a comprehensive assessment option. The tests are specifically designed to monitor the sensitive period of the kindergarten-school transition, proved to be a valid assessment tool in the last years of kindergarten and for ability structure, and their results are comparable. The tests of the

School Readiness Measurement Toolkit were recorded by both the mentioned research groups, within the network of the Hungarian Educational Longitudinal Programme (HELP) and the partner school network of the SZTE Centre for Research on Learning and Instruction, with the participation of thousands of first graders.

4.1.1. The adaptation of a face-to-face test within an online system

The development of the computer-based school readiness test battery began with the adaptation of the face-to-face DIFER test (Nagy et. al., 2004) into an online environment (Csapó, Molnár & Nagy, 2014).

The DIFER test is one of the most common school readiness measuring instruments in Hungary, which aims to measure the ability of children aged 4 to 8. Consequently, as a measuring instrument, it appears that it can also be used for the pre-school age group. First, the tests were carried out among first graders in a primary school context. The online version included the speech sound discrimination sub-test, all four versions of the relational reasoning test, the elements of basic numeracy skills, and inductive and deductive reasoning tasks. During the kindergarten measurements, the abilities of 248 children were assessed. The results show that the speech sound discrimination and the relational reasoning sub-test are valid measurement tools in the kindergarten context.

4.1.2. The School Readiness Measurement Toolkit

The School Readiness Measurement Toolkit is a self-developed online assessment tool from the MTA-SZTE Research Group on the Development of Competencies and the SZTE Cen-





Figure 3. Pámi, Pötyi and Hedgehog as motivation elements for children

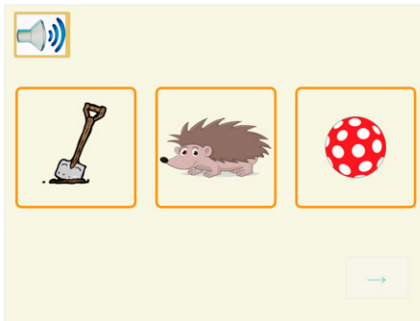


Figure 4. A sample task for phoneme synthesis: I'll say a word, but listen carefully, because I will say it slowly, broken down into sounds! Which picture am I talking about? Click it! /b/-/a/-/l/-/l/



Figure 5. A sample task for elementary counting: There are now two apples in the basket. Drag enough apples into the basket to have a total of five in it!

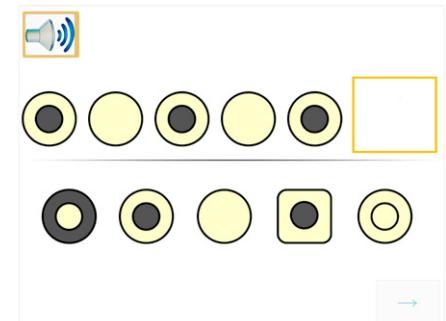


Figure 6. A sample task for figural series: Continue the pattern! Which image fits the yellow frame? Drag it there!

tre for Research on Learning and Instruction that is directly integrated in the eDia online interface. The test battery measures children's tablet-using skills, prereading skills, early numeracy skills, and inductive reasoning.

To improve children's motivation, the tasks were incorporated as part of stories. During the tests, children meet friendly characters like Pámi, Pötyi, and a small hedgehog. Children help them to collect the balloons that have been lost (Figure 3).

The tablet-using test and items give children the opportunity to practice the ICT skills that will be necessary for solving digital tasks (e.g. tapping/clicking, drag and drop, colouring items, or connecting items).

The prereading skills tasks contain phonological awareness tasks. During the development of language, syllable-level phonological awareness appears already at pre-school age. Certain sub-skills of phoneme awareness and the identification or differentiation of speech sounds also develop at this age. Accordingly, the focus of the tasks is on identifying the inner units of words and measuring phonological and phoneme awareness (Figure 4).

The assessment of early numeracy skills refers to the knowledge of the correct order of numbers, numerical operations with different quantities, and recognition of numbers and Arabic numerals. The test includes three sub-areas: elementary operation, elementary counting,

and Arabic numerals and quantities (Figure 5).

During the induction process, children have to observe individual cases, compare the cases with their properties and their relationships with each other, and then create general rules during the process. Inductive reasoning is also closely related to learning potential, problem-solving, concept development, and scientific thinking. The assessment tool contains sequences, analogies, and classification tasks that contain figurative elements (Figure 6).

4.2. Results and experiences

A total of 472 children from 18 kindergartens participated in our first kindergarten measurements. The initial results show that all three





cognitive measurement tests in the School Readiness Measurement Toolkit (prereading skills, early numeracy, and inductive reasoning sub-tests) are reliable and can be used separately and also together to measure children’s abilities (Cronbach- α = .84-.94) (Kiss, Mokri, & Csapó, 2019; Pásztor, 2016; Rausch, 2018). On average, children perform above 80% on tablet-use tests, which demonstrates that touchscreen devices are easy for kindergarteners to use as well. Our calculations show that the relationship between cognitive measurement tests and tablet-use tests is negligible.

Following the initial results and experiences, seeing the positive reception and interest of kindergarten teachers, the research team expanded the availability of the tests. All tests in the School Readiness Measurement Toolkit are available to institutions once they have pre-registered and are free to use at any time of the year. The test results obtained from the system can be incorporated into pedagogical diagnostics. The two sub-tests of the DIFER test adapted to the online interface can also be used. The staff of our research groups are currently in contact with 248 kindergartens.

4.3. The kindergarten test module and direct developmental intervention

Based on the measurement procedures and in order to overcome the difficulties caused by the pandemic,

the research group’s colleagues created the kindergarten test modules. In the case of the kindergarten test module, measurement and development tasks can be compiled following a simple e-mail registration. The tasks can be selected from a task bank that supports mathematical skills, prereading skills, and active knowledge of the outside world, which in the context of kindergartens refers to science.

“Our initial results highlight that our online development tools can have a positive impact on children’s ability levels,

In January 2022, a managed ten-week development process was launched with the participation of nearly 30 registered kindergartens nationwide, which was framed by pre-and post-intervention assessment. The developmental tasks and the related measurement tests map children’s mathematical and reading skills. Our initial results highlight that our online development tools can have a positive impact on children’s ability levels, while

well-designed computer-based development programmes with appropriate instructions and feedback can prevent skill gaps in prereading and early mathematical skills even at this early stage, without the presence of the kindergarten teacher.

5. Summary


The most important professional regulatory element in the Hungarian kindergarten system is the National Basic Programme of Pre-school Education. Throughout its development, at now at a stage where quality is to be raised and where dilemmas of measurability need to be overcome, the benefits of strong regulation are clear. For 25 years, the basic programme has provided stability and represented both European and domestic values.

Following the introduction of compulsory pre-school education from the age of 3, a review of the possibilities for regulating outcomes began, and several measures were taken in this regard. The focus of compulsory schooling at the age of 6 is on the obligatory monitoring of children’s development and its quality-professional criteria.

The role and importance of diagnostic measurements have been strengthened which is also justified by the growing number of children with special educational needs.

A system that reduces the administrative burden on kindergarten





“The eDia online system thus provides a diagnostic and development procedure covering a complex cognitive area in the sensitive phase of the transition between kindergarten and school.

teachers and provides the same basis for interpretation would be best supported in monitoring the child's development and providing a non-mandatory measurement of these abilities.

At present, in addition to making kindergarten teaching more attractive as a career, our most important task is to consider other possibilities of outcome regulation, especially for marginalised groups, in order to support kindergarten measurements and gain experience. The valid School Readiness Measurement Toolkit, presented in the study and developed by Hungarian researchers, can be adapted for introduction at the reference level following a policy decision.

The eDia online system thus provides a diagnostic and development procedure covering a complex cognitive area in the sensitive phase of the transition between kindergarten and school. The system not only provides an objective measurement procedure but also

facilitates teachers' work on diagnostics. Children solve tasks in a playful, colourful, and interactive environment during testing and development, their frustration decreases, their motivation increases, and they look forward to the next playful opportunity. The system not only tests pupils and helps them to develop along normal lines, but also measures children with developmental disorders or difficulties.

Kindergarten teachers need to have the same basis for interpretation in order for the measurement results to be comparable. This could be followed by the development of a kindergarten measurement environment based on the consensus of the group of participants and the domestic conditions.

The intention to regulate must be brought into line with system-level pedagogical-professional controls, part of which examined the measurement and evaluation system of the institution.

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