

Report – HAS-AVCC

HAS Public Education Development Research Programme 2021. SZKF-1 2021

Project title: „Preventing learning failure by changing the learning environment at the beginning of academic career”

Planned research period: 1 September 2021 – 31 August 2025

We planned to carry out the implementation in five phases:

1. Preparation period: 1 September 2021 – 28 February 2021.
2. Teacher preparation period: 1 March 2022 – 31 August 2022.
- 3. Programme period: 1 September 2022 – 31 August 2024**
4. Impact assessment: 1 September 2024 – 31 January 2025
5. Data processing, analysis, and reporting: 1 February 2025 – 31 August 2025

We are currently at the end of phase 3. We are on track with the research plan.

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Research plan – Programme period 3: 1 September 2022 - 31 August 2024.

- Designing the developmental and control groups
- Organising and conducting input measurements
- Data processing
- Students learning in the developmental learning environment
- Teachers monitor the process by observing students' learning and progress
- Teachers provide feedback on changes in the learning environment every six months
- Research consultations, analysis of experiences and problems with implementation
- Publications based on the first data
- Data monitoring of the members of the test/development and control groups
- Professional discussions with the headteachers/headmistresses
- Organisation and implementation of output measurements
- Data processing
- Professional day – Closing of the school part of the project, feedback on the project

Development in the schools

The research aims to promote the effective development of pupils' skills in the most intensive developmental phase, the first two school years. Twenty methodological units were developed (Appendix: Teaching materials), which were tested and used by teachers in their pedagogical work. The development started with an initial assessment of the pupils at the beginning of the school year. The teachers got to know the pupils' characteristics and considered the information in their development. By using the methodological units, they were able to create a learning environment in which there were many activities, language training combined with sensorimotor development.

Methodological units

- The developmental learning environment was created by the teachers using the methodological units.
- The methodological units were introduced to the teachers during the in-service training.
- Short summaries were provided for each methodological unit and technical tools were provided for some methodological units were provided.
- For the unit “Learning by playing, flashcards”, a mobile application was created: <https://play.google.com/store/apps/details?id=hu.forstner.kartyak>
- Teachers were free to choose methodological units (at least 3 units and a maximum of 6 units out of 20).
- The choices were “redesigned” by the teachers during the preparation in June 2023. At that time, they already knew the detailed analysis of the input tests and the individual and class group ability profiles of their pupils.
- The results of the input tests were analysed during the online consultations in spring 2023.
- In June 2023, in preparation for the targeted developmental teaching, the research team prepared a new technical paper in which the characteristics of the methodological units were supplemented with the ability elements so that it was possible to see what the methodological unit was aimed to develop (Appendix: KPT Elements - Methodological Units).

Frequency of use of methodological units – recommendation and implementation

According to the mid-term feedback, teachers used the methodological units much less than recommended. The developmental impact (either between or within groups) is expected when comparing the results of the input and output tests in light of the expected frequencies (Appendix: Frequency of methodological units).

During the 2 years, no methodological unit was used by teachers as many times as it was recommended. The closest to the recommended frequency of use was once a day, with 4-5 teachers using some (2-3) methodological units.

The number of methodological units used and the reasons for their use were reported by teachers in the semi-annual feedback. The reasons most of them gave for limiting the use of the methodological units:

- Space, classroom conditions, and class size.
- Number of tools
- Preparations, and difficulty of closure. –
- Mess, behavioural problems.

Professional support for teachers

During the research work, teachers received continuous professional support. We kept in touch via the research group email address. Every six months we held 2-3 online meetings on topicality tasks, needs, and questions. Individual telephone and e-mail consultations were frequent. Thanks to the good relationship, and almost friendly atmosphere, we were approached with confidence for professional and personal problems.

Topics for online consultations:

- Mondrian training – Online use of Mondrian blocks.
- Consulting and creating the materials for the mid-term report.
- Handling teachers' mid-term reports.
- Discussing the outcome of the student tests in the developmental schools, agreeing to the group lists and problematic tasks.
- Discussing the outcome of the pupil tests in the control schools, agreeing the group lists and problematic tasks.

We have regularly communicated the main steps of the project on the research website, not only to the institutions involved but also to all interested parties.

Teachers' feedback reports

Teacher feedback is at the heart of the research, and teacher feedback gave us a practical picture of the methodological units.

Every six months, teachers gave us written feedback on what was happening in the programme. The written feedback was based on set criteria and included photo and video feedback. The length of the feedback was not fixed, so the level of detail varied considerably.

A quick review of the responses showed that, despite the difficulties, there were positive experiences in the methodologies for teachers.

- Teachers would like to continue using the methodological units because they consider them useful, and the children have participated in the activities with interest.
- Teachers keep the learning spaces they created during the project,
- Teachers keep using balloon games and sensorimotor activities, among other newly introduced activities.
- Teachers see the children's development, their happiness, and the impact of the development on their future school life.

Developmental and control groups

The research sample was drawn from schools in the geographical area of the Vac diocese. A developmental and control group was the starting point, but the control group was supplemented by institutions from the Judit Polgar Chess Palace reference schools. The developmental schools used our methods for 2 years and carried out input and output studies. The control schools did not use our methods, merely did the input and output tests.

At the beginning of the research we wanted to contact many schools, but this was difficult because of the different attitudes of the school owners (Appendix: Number of institutions and their changes). We have an excellent professional relationship with the 17 schools that stayed with us until the end of the development and we want to maintain this relationship after the end of the project.

Table 1 & 2. Research samples

teachers using our methods	students learning in a developmental environment	the control group of teachers	the control group of students	teachers who use the Chess Palace method	students learning with the Chess Palace method
starting	starting	starting	starting	starting	starting
36	443	21	300	28	307
finishing	finishing	finishing	finishing	finishing	finishing
28	348	10	218	10	171

1. Input test 2022.		2. Outcome test 2024.	
Developer	443	Developer	348
Control	300	Control	218
Chess Palace	307	Chess Palace	171
Sum	1050	Sum	737

A fejlesztő- és a kontrollcsoportok pedagógusainak száma és személye a fejlesztési időszakban változott. Ennek okai a pedagógushiányon és a munkahelyváltáson túl az adódó személyes problémák (betegség, terhesség, költözés) voltak. Igen nagy a fluktuáció a pedagógusok körében. Több pedagógus munkahelyváltás miatt esett ki a kutatásból.

Testing

Input: September-November 2022

Output: April-June 2024

Testing tools:

- Online Sensorimotor and Cognitive Profile Test (<https://kognitivprofil.hu>)
- Colour Raven Matrices

The children were more mature and skilful in the output test than in the input test. Fewer classes were measured than before. There were 1050 children in the first test and 737 in the second. This is still enough data for statistical processing.

The following questionnaires were used for teachers:

- Aspiration Index
- Mini Oldenburg Burnout Questionnaire
- Subjective Physical Symptom Scale
- Mental Health Test
- Sociodemographic Background Questionnaire

The teachers of the experimental and control groups completed the questionnaires. The results are being processed.

Data processing, analysis, summary

Class profiles and individual profiles have been prepared for each development class (Annex: KPT pupil profile chart, KPT class profile table).

The results of the input tests were analysed during online consultations in spring 2023 and sent to all teachers in graphical and tabular form (Appendix: KPT Student Profile Chart, KPT Class Profile Table). For the preparation sessions of June 2023, we prepared a new technical material in which we added the competence elements to the characteristics of the methodological units so that teachers could see in what areas the methodological units are effective (Appendix: KPT elements - methodological unit).

With the conclusion of the study phase of our research project, we started to process and publish the data.

Publications (details in the Appendix)

- 2 articles are awaiting review in Q1 journals
- We publish continuously in national and international journals
- Theses and award-winning TDK papers are being prepared from research material

Experiences of professional discussions with principals and headteachers of the schools

Before the end of the school part of the project, we also gathered the experiences and opinions of the headmasters of the schools and the schools that carried out the development. Short face-to-face professional meetings were held in the spring of 2024 with the representatives of the owners and the headmasters of the schools involved in the development. Three owners and 17 principals participated in the interviews and the responses are being processed.

Closing – professional day

The school-based part of the MTA-AVKF learning environment research started in the autumn of 2022 and ended in June 2024. We closed the phase with a professional day. After

the workshops and a summary of the project results, we thanked the teachers, headmasters, and principals for their work by awarding them certificates. The workshops of the professional day were attended by 26 teachers and the closing ceremony was attended by 80 participants.

Event-related material (Appendix: events):

- Summary of the programme
- Summary presentation
- Photos of the event
- Award of diplomas (teachers) - Award of diplomas (headteachers, principals)

Social impact

- 17 developmental schools and 16 control schools participated in the two-year programme
- 33 schools used the KPT
- 20 methodological units were developed
- 1050 students participated in the input tests and 737 students in the output tests
- 443 students started and 348 students completed their development
- 6 conferences were held to present the project
- 15 publications were produced during this research year
- 1 professional day was held
- 64 047 visitors to our website in total, 31 683 in 2024

Finance

We spent 4,994,000 HUF instead of 5,300,000 HUF on staff allowances and contributions because the teachers' salaries depended on the number of methodological units and the number of teachers decreased. Expenditure on materials was 2,620,000 HUF instead of 2,500,000 HUF because we bought equipment for the implementation of the methodological units and 1 touch-screen laptop (HUF 326,000) for conducting student testing.