UHF Ukraine Humanitarian Fund

100%LIFE

NGO Ukrainian Smile

Artificial intelligence - Meeting Ukrainian schoolchildren at their Point of Need

Summary of research: *Results of monitoring the pace of reading of elementary school students in the front-line regions*

Supports acquiring knowledge and bridging learning gaps

914 568

Children in need of “catch-up” as forecast by the Education Cluster in Ukraine for 2024.

80 874

Children took part in “catch-up” activities to bridge learning gaps in the first 5 months of 2024, in projects implemented by 45 partners of the Education Cluster in Ukraine.

16%

Is the % of children out of Education Cluster coverage in “catch-up” activities impacted by our Project team supported by the Humanitarian Fund for Ukraine.

UHF Ukraine Humanitarian Fund 100%LIFE NGO Ukrainian Smile

Project

Digital education in **remote institutions** of the 6 front-line, **conflict regions** of Ukraine, where students do not have the opportunity to study at desks due to the security situation

Implementation of "*Digital tools to overcome learning lag, assess the mental health and remedy social-emotional development of the most vulnerable 35,000 children*" **to overcome educational losses** among **primary school students** in **front-line rural areas in Ukraine**.

Implemented by *100% Life* in partnership with NGO *Ukrainian Smile,* supported by the *Humanitarian Fund for Ukraine*

UHF Ukraine Humanitarian Fund 100%LIFE NGO Ukrainian Smile

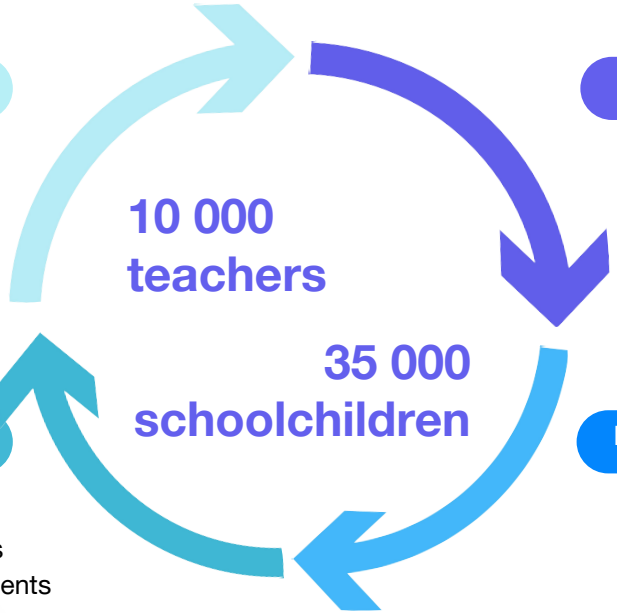
Project System

NEEDS ASSESSMENT

- AI assessment of reading skills
- mental health screening
- teacher survey

HUMANITARIAN RESPONSE

- teacher training
- digital educational technology
- 100 mobile classes
- knowledge “catch-up” program
- social-emotional learning program



RESULTS

- catching up on knowledge
- professional development of teachers
- socio-emotional development of students

EVALUATION of the INTERVENTIONS

- AI diagnostics
- meetings with teachers
- gormative assessment

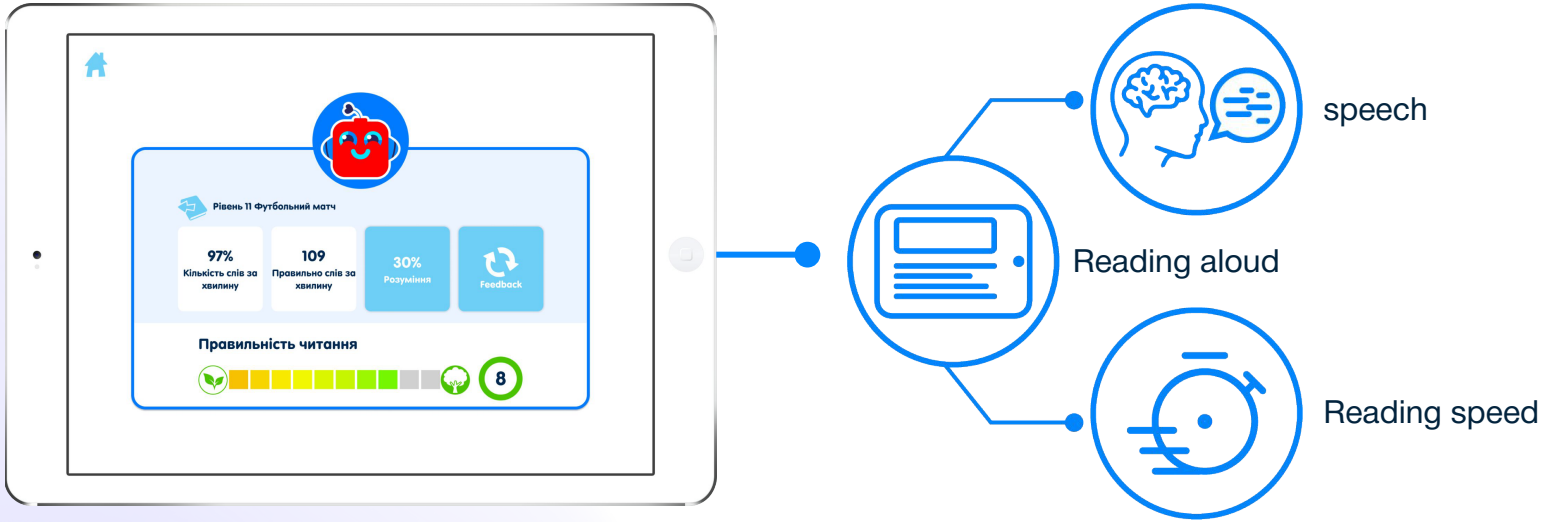
UHF Ukraine Humanitarian Fund 100%LIFE NGO Ukrainian Smile

Integrated Artificial Intelligence

Optimally and simultaneously monitors and evaluates numerous reading indicators of numerous students.

Custom-built AI development for work in class

Speech recognition of children's voices during aloud reading



UHF Ukraine Humanitarian Fund

100%LIFE

NGO Ukrainian Smile

"Results of monitoring the speed of reading of elementary school students in the front-line regions"

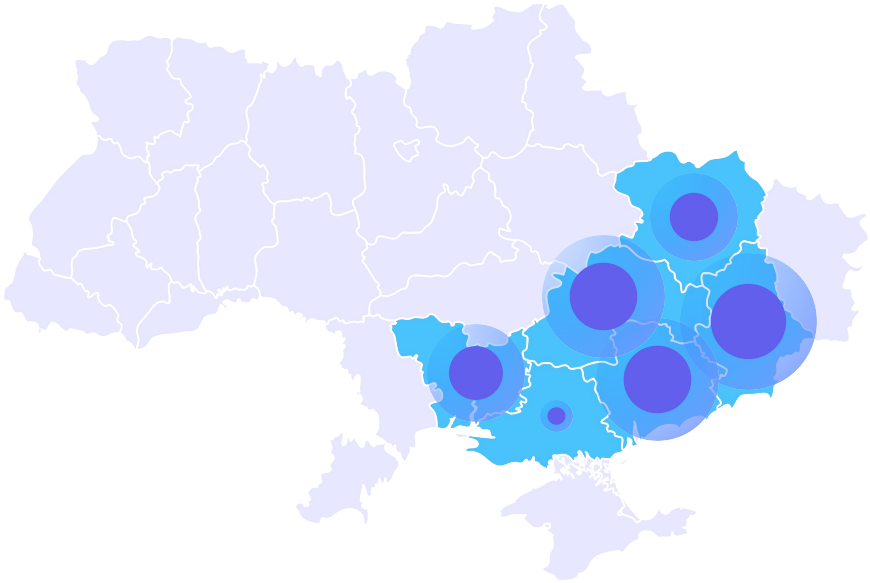
RESEARCH OF DATA EVALUATING THE DYNAMICS OF THE PERIOD

1 stage

09/1/2023 — 1.06.2024

2 stage **DIAGNOSTIC**

from 04/15/2024 — 1.06.2024



UHF Ukraine Humanitarian Fund

100%LIFE

NGO Ukrainian Smile

Methodology

Control Group:

4,971 primary school students :

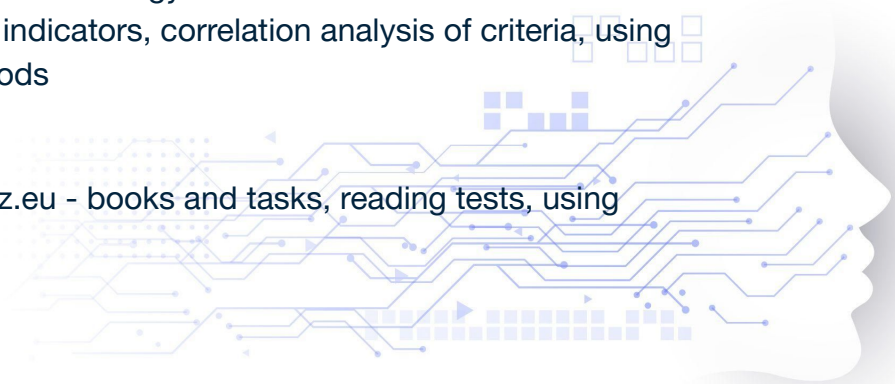
- Of which **2,088** are at the diagnostic stage
- **734** general secondary education institutions in the regions of Donetsk, Dnipro, Zaporizhzhia, Mykolaiv, Kharkiv, Kherson

Research methods:

Quantitative calculation of reading speed using AI technology
Ranking of respondents, comparative analysis of indicators, correlation analysis of criteria, using control and experimental groups, statistical methods

Research tools:

Activities on the digital educational platform eKidz.eu - books and tasks, reading tests, using integrated AI diagnostics

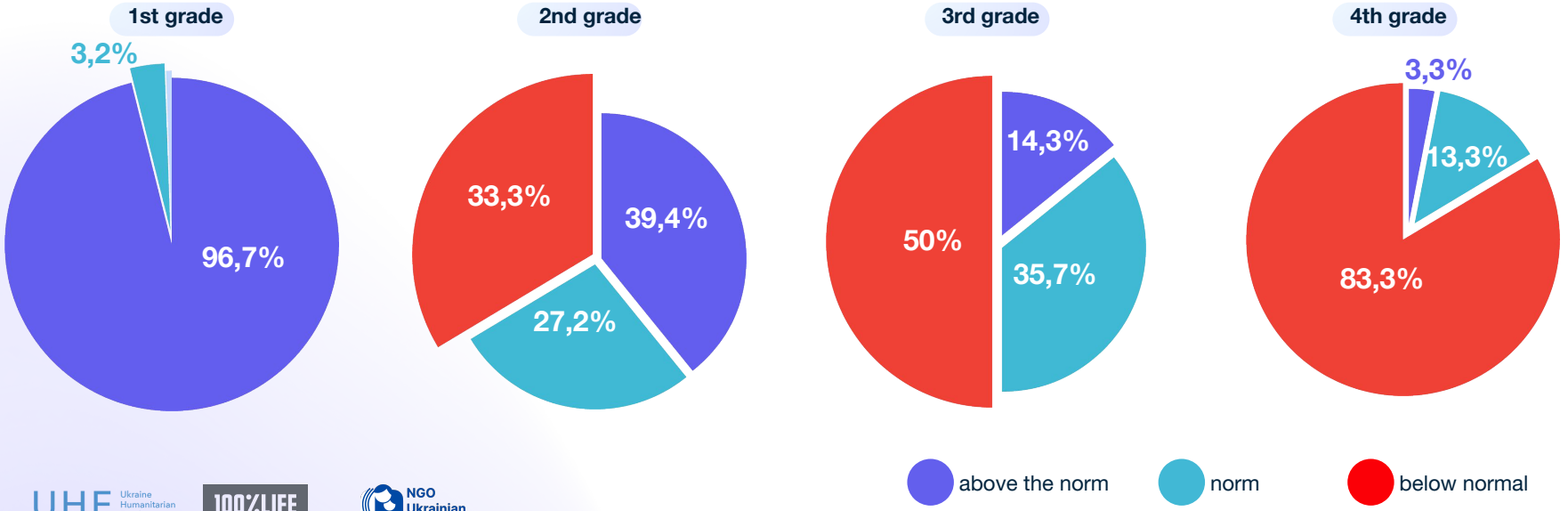


UHF Ukraine Humanitarian Fund | 100%LIFE | NGO Ukrainian Smile

Dynamics of reading speed by grade

from **0%** in 1st grade to **83.3%** in 4th grade

Consistent trend of educational deficit in the reading speed of elementary school students in grades 1 to 4 compared to the reading speed norms



UHF Ukraine Humanitarian Fund

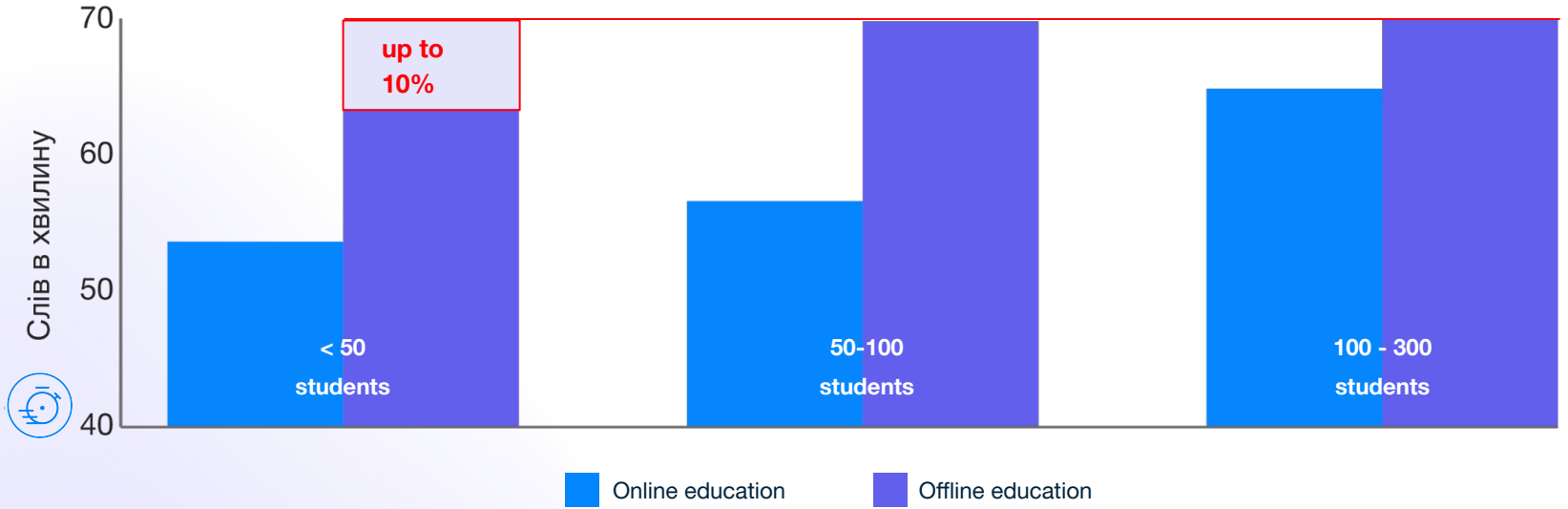
100%LIFE

NGO Ukrainian Smile

Indicators of students' reading speed relative to the number of students in the school

There is a direct & proportional relationship between number of students in an educational institution and the development of technical reading skills in students has been identified.

An increased gap in the development of reading skills between students from urban schools (more than 300 students) and rural schools (up to 50 students) was observed. The difference is within the normative range of up to 10% (from 60 to 70 words per minute).

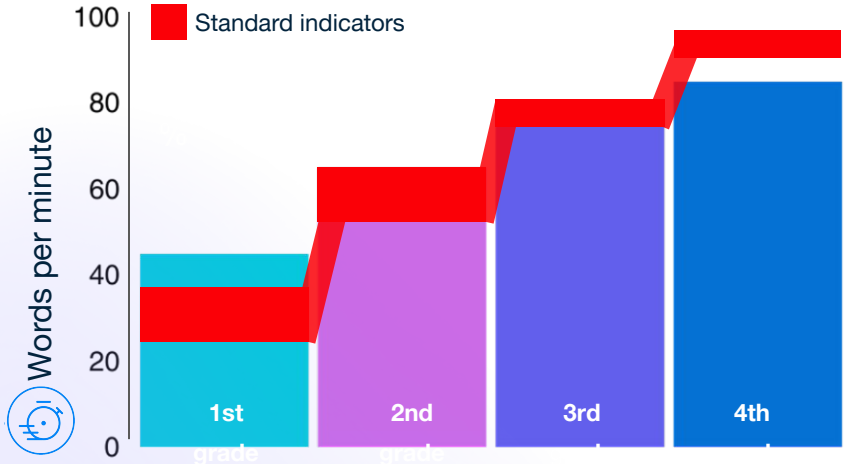


UHF Ukraine Humanitarian Fund
100%LIFE
NGO Ukrainian Smile

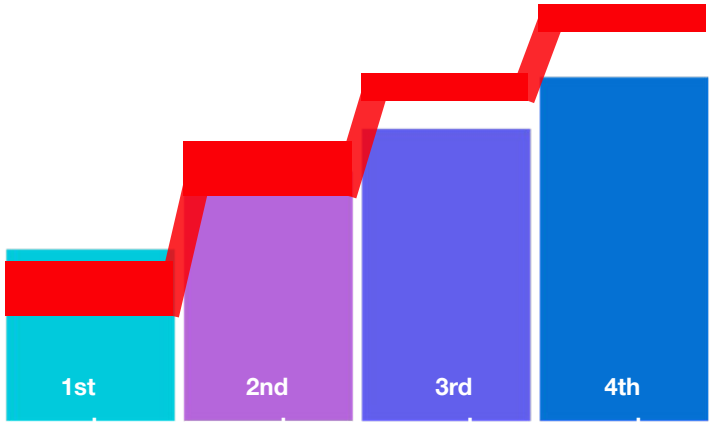
Indicators of reading speed in students in traditional and online education formats

The results of the study demonstrated that the average reading speed is influenced by the type of education (traditional or online) and the student's diagnosis.

Students in traditional education showed a higher average reading speed by 10 words per minute, suggesting a more effective development of reading skills through the use of digital textbooks in mobile classrooms.



Visual format



Online format

UHF Ukraine Humanitarian Fund · 100%LIFE · NGO Ukrainian Smile

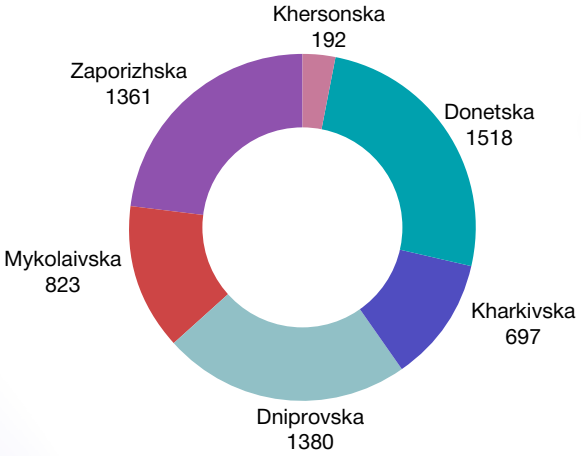
Monitoring the impact of technology using the eKidz.eu digital textbook on the dynamics of reading pace among primary school students in the process of recovering educational losses

4,971 primary school students

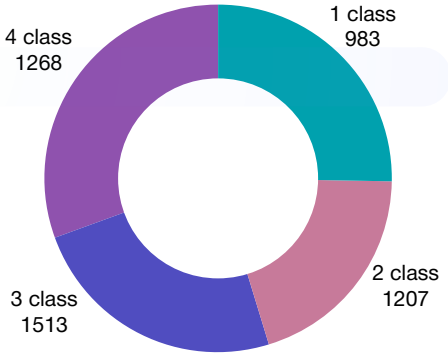
Control group students who worked with the textbook daily for 1 week or less

Experimental — those who worked daily for 6 consecutive weeks or more

DISTRIBUTION OF PARTICIPANTS BY AREAS



DISTRIBUTION OF PARTICIPANTS BY GRADES



UHF Ukraine Humanitarian Fund · 100%LIFE · NGO Ukrainian Smile

Monitoring the impact of technology using the digital textbook eKidz.eu on the dynamics of reading pace of primary school students in the process of compensating for educational losses

INDICATORS FOR MONITORING

Reading speed determined by AI

Reading pace

Frequency and sequence of using the digital textbook

Reading interest and motivation

- Number of completed test tasks
- Number of audio recordings made

Reading activity

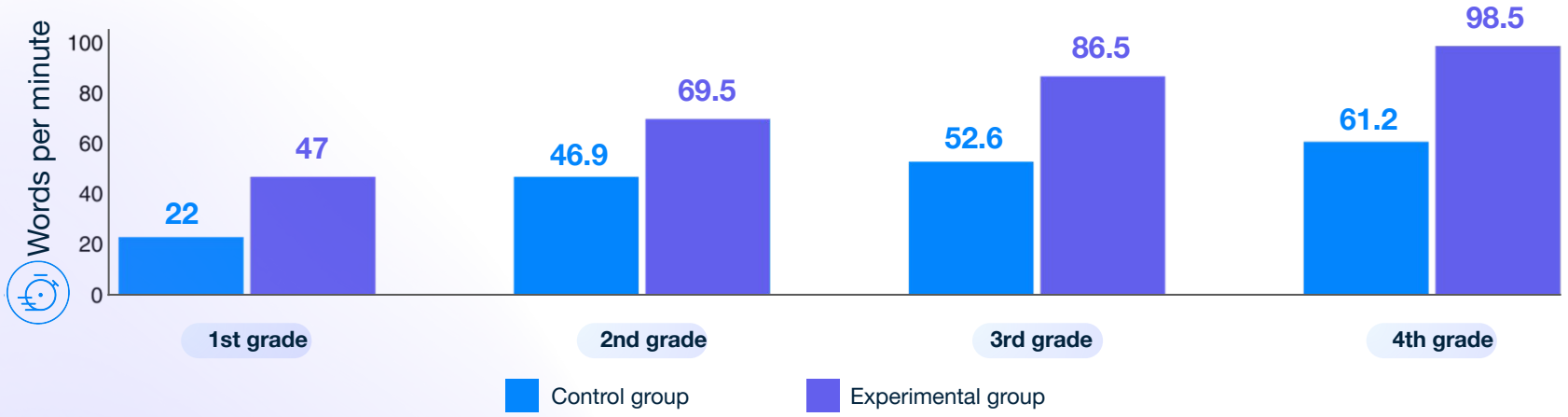
UHF Ukraine Humanitarian Fund

100%LIFE

NGO Ukrainian Smile

Monitoring the impact of technology using the digital textbook eKidz.eu on the reading speed dynamics of primary school students in the process of overcoming educational losses

- IProven direct, proportional relationship between the development of reading interest and motivation, reading activity, and the positive dynamics of the reading speed of primary school students.
- Students in the experimental group who worked with the digital textbook for 6 or more consecutive weeks demonstrate the overcoming of learning gaps in all (1–4) grades of primary school concerning the benchmark reading speed norms.
- Statistically higher homogeneous indicators of the average reading speed among students in the experimental group confirm the real consideration of the individual development trajectory of the student while working with the digital textbook.



UHF Ukraine Humanitarian Fund
100%LIFE
NGO Ukrainian Smile

Results

10% faster

In primary school, students who studied in mobile classes equipped with a digital textbook experienced a significant acceleration in their reading speed within 1.5-2 months when compared to students in remote learning

from 0% to 83%

The research confirmed an increasing gap in the development of reading skills among students from 1st to 4th grade as a result of proximity to conflict zone in rural areas

10 words per minute

The average reading speed gap for students in general secondary education with a number of up to 50 individuals compared to urban schools (more than 250 students).

from 6 weeks

Regular use of the digital textbook reduces learning disparities in reading and promotes the development of reading interest, motivation, reading activity, and reading speed.

UHF Ukraine Humanitarian Fund 100%LIFE NGO Ukrainian Smile

How we achieved this

100 mobile classrooms

(with inclusive kits and charging stations) were purchased and distributed to educational institutions in 6 frontline regions.

Educational work was carried out to overcome educational losses in **747 schools** in the context of reading (literacy) and the development of speech for primary school students during the 2023-24 academic year.

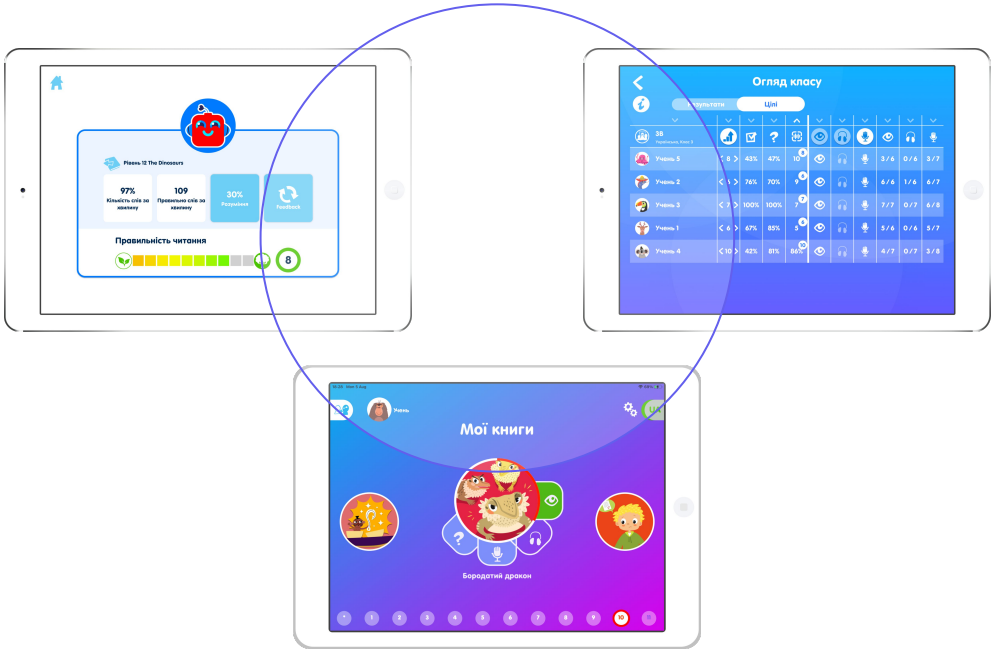
UHF Ukraine Humanitarian Fund | 100%LIFE | NGO Ukrainian Smile

**recommended in 2022 by the Ministry of Education and Science of Ukraine for use in Ukrainian language lessons*

How we achieved this

implemented regular standardized **reading skills testing** for students with the use of integrated **artificial intelligence** tools (according to the requirements of standards and programs in primary school).

introduced new technology — the **digital interactive textbook eKidz.eu**, which contains over 80 books with reading, listening, audio recording, creative task execution, interactive illustrations, and comprehension tests;



UHF Ukraine Humanitarian Fund

100%LIFE

NGO Ukrainian Smile

Conclusions

AI helps to effectively assess the learning achievements of a large number of students at the same time.

Students in rural primary schools require special support in overcoming educational losses.

Digital tools help to catch up on knowledge in primary school and improve reading skills.

UHF Ukraine Humanitarian Fund

100%LIFE

NGO Ukrainian Smile

Insights

The use of digital textbooks
allows the overcoming of learning gaps in the reading
skills of primary school students

Insights

Preventing and remedying the occurrence of educational losses and learning gaps requires work from the 1st grade

Insights

Addressing reading academic gaps has proven effective when combined with social-emotional learning

Insights

Digital textbook (used over 6 weeks) compensates for the difference in reading speed of elementary school students in distance and face-to-face learning forms

Insights

Knowledge obtained via AI make it possible to monitor the learning of large numbers of students in a short period of time

Recommendations and prospects for overcoming educational losses

01

We will continue to focus on primary school students and students from rural schools.

02

The integration of social and emotional learning into the process of bridging educational gaps creates additional motivation for students.

03

Digital learning technologies can be scaled up for large numbers of students and used autonomously.

04

The use of a digital textbook and mobile classrooms allows us to take into account the individual trajectory of the student.

05

Artificial intelligence optimizes assessment processes in the educational process.

UHF Ukraine Humanitarian Fund

100%LIFE

NGO Ukrainian Smile

UHF Ukraine Humanitarian Fund

100%LIFE

NGO Ukrainian Smile

Thank you for your attention!

We are ready to answer your questions:
organization and content of the study - Iryna Martynenko, Inna Khyzhnyak

info@ukrainiansmile.org
Head of AI at eKidz.eu - Yaroslav Nedashkovsky
yaroslav.nedashkovskyi@ekidz.eu