Str. 11, No. 35, 5197 Pavel, Veliko Tarnovo, Bulgaria
+40 755 062 979 | office@evonote.eu | https://evonote.eu

EVONOTE

Education Presentation

EVONOTE is the first and only digital notebook for school.

It is an edtech solution made of three parts that work together:

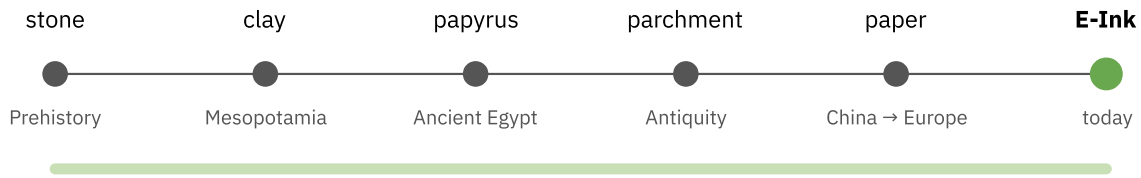
- **The device the student writes on** — an E-Ink screen that feels like paper and does not strain the eyes. As isolated as a notebook: no internet, no apps, no notifications. It follows the structure of the school, with one notebook for each subject. One device instead of a whole schoolbag. There is nothing for the student to set up: everything comes configured, and whatever they write is saved automatically, on the device and in EVONOTE Cloud.
- **EVONOTE Cloud** — the part no one sees, but which makes everything possible. This is where the notebooks are kept, up to date and secure, accessible from anywhere.
- **The web interface** — where the devices are configured and, above all, where something schools have never had comes to life: handwriting no longer tied to paper. What a student writes can be seen, as they write it, by anyone with permission — and from there, each student discovers their own way of learning together with others.

Handwriting engages more areas of the brain associated with creativity and critical thinking.

— Marano et al., Life, 2025

1. The Gesture and the Surface

People have been writing by hand for several thousand years. The surface has changed many times, the gesture never.



the same hand, the same gesture

The gesture stayed the same: a hand holding a tool and forming the letters, one by one. Through this gesture, almost everything we know about those who came before us has been preserved: laws, stories, calculations, letters. For millennia, handwriting was the memory of culture.

Then came digitalization. It entered schools through the doors that were open: the keyboard, the screen, the interactive whiteboard, online platforms. **Handwriting had no such door.** There was no digital surface suited to it, so it was simply bypassed. Schools gained speed, order and access to information, but quietly lost the gesture that had been with them from the very beginning.

Standard tablets tried to fix this with a stylus. But the writing happened on glossy glass that slides under the tip, on a screen that shines straight into the eyes and has the entire internet just one tap away. The idea was good; the surface was wrong.

E-Ink changes the equation. The screen is matte, it reflects the light in the room like a sheet of paper, and the stylus tip meets a slight resistance, similar to that of a pen on paper. The difference between an E-Ink page and a paper page is smaller than the one between parchment and paper, and that transition proved to be one of the best in the history of writing.

E-Ink is most likely the next surface for writing, with or without EVONOTE. The tension between the digitalization of schools and handwriting is not resolved by choosing one over the other, but by moving handwriting onto a digital surface that respects it. EVONOTE is built precisely for this step.

2. Three Ways of Taking Notes

In a lesson, information reaches the student in three ways: they watch it, type it or write it by hand. To the teacher, all three can look the same. The student is at the desk, the lesson ends, the material exists somewhere. For the student's brain, however, these are three very different experiences.

Research in recent years has measured these differences on several levels: how well we recognize letters, how well we remember words, how well we understand concepts, how much stays in memory after a few weeks, and how the brain works while we write. The picture that emerges is fairly clear:

On different levels of learning, wherever differences appear, they favor handwriting.

There is one more important detail that usually goes unnoticed: these studies were conducted under ideal conditions. The laptops were disconnected from the internet, and participants wrote in a lab, with no notifications and no temptations. The differences appeared even so. In a real classroom, with internet, apps and messages popping up on the screen, the keyboard and the tablet start at an even greater disadvantage.

The works this chapter draws on are listed in the appendix at the end.

2.1. No Notes: the Student as Spectator

The interactive whiteboard brought rich content into the classroom: images, videos, diagrams, examples no textbook could offer. The whiteboard is not the problem. The problem arises when, because the material arrives by e-mail at the end of the lesson anyway, the student stops writing.

At that moment, the student becomes a spectator. Their presence is mandatory, their attention cannot be checked, and nothing in the method requires them to take part. They can follow the lesson or be thinking about the afternoon match, and the result looks the same: a file received by e-mail.

There is another, subtler trap. When students reread the material they received, they recognize it and feel they know it. But recognition is different from learning. Researchers have a name for the effort that is missing here: "**desirable difficulties**". These are the small obstacles, such as choosing what to write down, rephrasing, writing with your own hand, that slow the process down a little but make the information stick.

Handwriting was abandoned precisely because it was inconvenient, slow and impossible to digitalize. Yet that very inconvenience was part of learning. EVONOTE does not replace the whiteboard. It brings back into the classroom what was lost alongside it: notes written by the student.

2.2. Notes on a Keyboard

The keyboard is fast, tidy, and looks like the obvious solution. But every letter comes from the same simple movement: pressing a key. The letter already exists, ready-made, and the finger merely selects it. For the brain, the difference between “a” and “m” is just a position on the keyboard.

Speed comes at a price. Those who type manage to capture almost everything they hear, so they tend to **transcribe mechanically**, word for word, instead of filtering and rephrasing. One of the best-known studies on the subject found something surprising: even when students were explicitly asked not to copy word for word, they kept doing it. This is not a lack of discipline on the student’s part. The tool itself pushes toward copying.

Studies that later compared test results gave more nuanced answers: sometimes handwriting clearly won, sometimes the differences were small. Two things, however, were confirmed every time: typed notes are longer and much closer to a mechanical transcript of the lesson. And studies of brain activity show that typing involves fewer circuits, with weaker connections between motor and cognitive areas.

The keyboard remains an excellent tool for many things: writing a long essay, searching, working on a project. For learning during a lesson, its advantage is smaller than it seems.

2.3. Handwritten Notes: Paper, Screen, E-Ink

Handwriting is by far the most complex of the three. For each letter, the hand performs a fine movement, different from all the others. The eye follows the line, the fingers feel the pen and the resistance of the paper, the brain links the shape of the letter to its sound and to the meaning of the word. Attention stays in one place: on the page you are writing on. All of this happens simultaneously, dozens of times a minute.

And the brain responds accordingly. A recent study at the Norwegian University of Science and Technology showed that, while we write by hand, the areas of the brain **work far more connected to one another** than when we type. The patterns observed are exactly those that research associates with memory formation and learning. The authors’ conclusion is simple: *whenever handwriting movements are included as a learning strategy, more of the brain gets stimulated*.

The effects also show over time. In an experiment in which adults learned new characters, there was no difference immediately after learning between those who had written by hand and those who had typed. Over the following three weeks, however, what had been typed was gradually forgotten, while what had been handwritten remained.

And digital writing? Here comes the good news: the Norwegian experiment was carried out **with a stylus, directly on a screen**. The benefits of handwriting do not come from ink and paper, but from the gesture. Researchers, in fact, define handwriting as including writing with a digital stylus. Other

studies have shown that, once you get used to the stylus, learning with it is at least as good as on paper and clearly better than on a keyboard.

There is, however, one condition: **the surface matters**. Standard tablets have a smooth, glossy glass surface. Measurements show that paper offers more resistance to the tip than glass, and on a smooth screen everyone who writes, even adults with a fully formed handwriting, adapts: they write faster, larger, with harder control of the movement. Other studies have found that writing on a standard tablet requires additional mental effort. The effect is strongest in young children, who are just learning to form letters. This is also why EVONOTE is aimed, in its first stage, at students in grades 5–12.

Writing with a pen on paper relies on something simple: **the resistance of the surface**. The hand feels it and adjusts its movement accordingly. Glass reduces it. The E-Ink screen, matte and slightly rough, brings it back. No dedicated study has yet measured the effect of E-Ink on learning. But the problem research has identified with standard tablets is precisely the smooth surface, and E-Ink removes exactly that cause.

2.4. What We Know and What We Don't Know Yet

An honest presentation must also say what is not known.

Many of the studies were conducted on adults, in a lab, on short tasks. Test results are sometimes clear, sometimes modest. And on E-Ink, research has not yet had the final word, because the technology is still too new in schools.

What we do know, however, is enough for a clear direction: handwriting engages the brain more, leaves more lasting traces, and its benefits remain even when writing becomes digital, provided the surface respects it. The rest we will learn in the classroom, together with teachers.

2.5. Where EVONOTE Stands

If we place the three ways of taking notes side by side, EVONOTE takes the best of each:

- **From handwriting**: the gesture. Every letter formed by hand, on a surface that offers resistance, like paper.
- **From the digital world**: notes that never get lost, that can be reread anytime and from anywhere, and that the student can share with teachers, parents and classmates.
- **From the lab**: the conditions. No internet, no apps, no notifications. Exactly the conditions in which research measured the advantages of handwriting, brought into the real classroom.

A notebook, on a new surface. The same gesture, thousands of years old.

3. EVONOTE Among Classroom Technologies

Today's school has no shortage of technology. It has interactive whiteboards, laptops, tablets, platforms, accounts, apps. Each entered the classroom with a promise, and many of them have actually kept it. The whiteboard shows what no textbook can show. The laptop is indispensable when a project needs to be written or information looked up. Platforms keep school and home connected.

EVONOTE does not come to replace any of them. It comes to bring back something that was lost along the way. To make room for themselves in the classroom, many of these technologies set the notebook aside: the lesson arrives by e-mail, the materials sit on a platform, and handwriting has slowly become redundant.

EVONOTE resolves this tension differently: **it brings the notebook into the digital world, instead of leaving it behind**. And how all these tools are combined in a lesson is up to those who teach. The balance between technologies belongs to educators.

The table below sets the tools side by side, on the criteria that matter for a school notebook. Detailed explanations of the scores can be found in the General Presentation, section 1.3.

	Cognitive benefit	Natural writing	Focus	School structure	Sharing and cooperation	Eye protection	Portability	Eco-friendly
Interactive whiteboard *	-	-	-	-	●	●	-	●●
Laptop	●	-	-	-	●●	-	●	●●
Standard tablet **	●	●	-	-	●●	-	●●	●●
Standard E-Ink tablet ***	●●	●●	-	-	●●	●●	●●	●●
reMarkable ******	●●	●●	●●	-	●	●●	●●	●●
Paper notebook	●●	●●	●●	●●	-	●●	●	-
EVONOTE	●●	●●	●●	●●	●●	●●	●●	●●

The table is easier to read after chapter 2:

- **Cognitive benefit, natural writing and eye protection** depend on handwriting and on the surface. The winners are the tools on which you write by hand, on a surface that resembles paper.
- **Focus** is the lab condition: no internet, no apps, no notifications. Only tools built exclusively for writing meet it.
- **School structure** is the strong point of the traditional notebook: one notebook for each subject. EVONOTE preserves it, and in the digital world, where everything ends up in files and folders, that is the exception.
- **Sharing, portability and eco-friendliness** are the digital side, where the paper notebook falls behind.

Each tool wins on some criteria and loses on others. EVONOTE is the only one that ticks them all, because it was built starting from them.

School-Compatible

More and more schools and education systems, in more and more countries, are restricting or banning screens in the classroom. The reasons are the ones every teacher knows: distractions, notifications, the internet one click away.

EVONOTE passes these rules without getting around them. The device has no internet, no apps, and receives no notifications. The screen does not shine; it reflects light, like a sheet of paper. In a classroom that has given up screens, EVONOTE behaves exactly like a notebook.

What Digitalizing Handwriting Brings

Until now, handwriting had a limit that nobody noticed anymore, because it had always been there: it stayed in the notebook. Only the student saw what they had written. The teacher saw it only occasionally, when collecting the notebooks. The parent saw it, perhaps, in the evening, if the student felt like showing it.

When handwriting becomes digital, the limit disappears:

- **Notes are no longer lost.** A notebook left at home or a broken device no longer means lost lessons.
- **They can be reread anytime and from anywhere.** Research shows that notes have two roles: they help you learn while you write them, and they are the material you review from afterwards. Digitalization strengthens precisely the second role.
- **They can be seen by those with access, through continuous sharing.**

Continuous sharing is the most important difference. The student does not send a page or a file. They open the notebook. Once access is granted, everything they write from then on appears for whoever has access, as they write it, without anyone having to send anything.

And access follows **the structure of the school**. The student gives the math teacher access to the math notebook, their deskmate access to the history notebook, a parent access to the entire profile. Everyone sees exactly what concerns them, organized by subject and school year, just as the school itself is organized.

This combination of school structure and continuous sharing sets EVONOTE apart from other E-Ink writing tablets, which are built for a single adult user who organizes their own documents and sends them, when needed, as files.

The result is perhaps the most important thing EVONOTE brings: **handwriting leaves the notebook**. What used to be an individual act, closed between the student and the page, becomes part of the life of the class.

The Doors That Open

When something that has existed for thousands of years in a single form takes on a new one, no one can know in advance everything that will follow.

We know what EVONOTE does today. We don't yet know what students and teachers will do with it. A teacher will discover that they can follow how a student thinks through a problem, not just the final result. Two classmates will discover that they complete each other's notes. A parent will discover that they can stay close to what their child is learning without asking every evening, "What did you do today?". And uses will emerge that no one has thought of, not even those who built the notebook.

It is more like a living being than a product: once set in motion, it grows in its own way. Our role is to watch how it grows, keep what is good, and build further on the paths that students and teachers open up. Chapter 5 describes the first doors we can already see, and chapter 7 the way we will follow the rest.

4. The Teacher's Perspective

Every new technology enters the classroom with an unspoken question: what does this mean for me? For the teacher, EVONOTE has a short answer: nothing mandatory.

The Mixed Classroom

EVONOTE enters schools in two ways: through families and through projects with schools. Especially at the beginning, teachers may have mixed classes.

The lesson, however, stays the same. The teacher teaches, writes on the board, dictates, assigns exercises. The student with EVONOTE does what everyone else does: writes, by hand, in the notebook for that subject. The only difference is the surface. And in a school that restricts screens, their device behaves like a notebook.

Zero Effort, Zero Obligations

The teacher doesn't have to install anything, learn a new platform or change the way they teach. They are not required to follow anything and receive no additional tasks.

If they want to, they can go one step further. The student or the parent gives them access, by e-mail, to the notebook for their subject. Access is free and the account takes minutes to set up. From then on, the teacher sees the notebook through continuous sharing: from any browser, on a computer or phone, as it is written. No collecting notebooks, no carrying them home, no waiting.

Assignments and Tests

For now, tests handed out on paper stay on paper. But a simple option already works: the teacher shows the questions on the board, and the student answers in the EVONOTE notebook, "1A, 2B, 3D" for a multiple-choice test or a written answer for an open question. With no internet and no apps, there is no way to look up the answer.

Features dedicated to assessment, such as materials sent by the teacher directly into the student's notebook, are in development.

What's Next

The writing page in EVONOTE already has a white margin on the left, reserved for an upcoming feature: teacher's notes. When a teacher leaves a note on a page, a mark appears in the margin to show that it exists. By tapping the mark, the student opens or hides the note.

New features don't come from a list drawn up in an office. They come from the classroom, from teachers' requests, and chapter 7 describes how we choose them.

5. Use Scenarios

The scenarios below are not rules of use. They are the first paths we can already see, either because we have observed them or because they follow naturally from what the notebook does today. Students and teachers will discover the rest.

The Student Who Was Absent

Andrei was sick for three days. In the past, he would have borrowed a classmate's notebook, photographed it or copied it in a hurry, and some of the lessons would have been lost along the way.

Now, his deskmate has given him access to her physics notebook. Andrei sees the lessons exactly as they were written in class, page by page, and can catch up at his own pace. And when he is back at school, the access remains: if he is ever absent again, the lessons are already there.

The Teacher Who Sees How a Student Thinks

The math teacher has access to the notebooks of three students in her class. In the evening, one of them finishes his homework and presses the save button, to make sure it has reached the cloud. Before the test, the teacher looks over their exercises. With one of them, she notices he always gets stuck at the same point in the solution: the final result is wrong, but the problem starts much earlier.

On paper, she would only have seen this by collecting the notebooks. Now, the next day in class, she already knows where to focus.

The Private Tutor

Many students also work with a teacher outside school, a practice increasingly common across Europe. When a family chooses this, the tutor usually learns what was done in class only from what the student remembers, which is little and approximate.

With access to the subject's notebook, the tutor sees exactly what was taught, how it was explained and where the student got stuck. The session starts where it should. Access is an option, not an obligation: the decision stays with the student and the family.

The Parent Who Stays Close Without Checking Up

Ioana's mother works until the evening. She has no time to check the notebooks, and Ioana, at 13, isn't keen on showing them.

With access to the profile, her mother can browse from time to time, on her phone, what is being done at school. Not to check every page, but to know. And the evening conversation changes: instead of “What did you do today?”, it becomes “I saw you’ve started equations, how are you finding them?”.

The Study Group

Four classmates are preparing together for an end-of-term exam. Each of them took notes differently in class: one caught the definitions, another the examples, another what the teacher added on the side. They give each other access to their history notebooks and fill in each other’s notes.

Revision

Before an exam, the student has at hand everything they wrote in that subject throughout the year, organized exactly as at school. And, if needed, everything they wrote in previous years. Nothing lost, nothing misplaced in a drawer.

The Notebook That Never Gets Lost

A schoolbag forgotten on the bus, a notebook dropped in the mud, a device knocked to the floor. With paper, such incidents mean weeks of lost notes. With EVONOTE, the notebooks stay safe in the cloud, and on a new device everything comes back exactly as it was.

All these scenarios use features that already exist. As new features arrive, such as teacher’s notes in the page margin, new scenarios will appear too. And the most interesting ones will probably be those no one has thought of yet.

6. Data and Child Protection

For a school, the question about data almost always comes first, and rightly so. EVONOTE's answer has less to do with legal documents and more to do with how the notebook is built.

Where the Data Is Stored

Students' notebooks are stored on servers in the European Union and will always remain there. EVONOTE is a European service, built and operated in the EU.

Who Sees the Notebooks

The notebooks belong to the student. They are seen by the student and, for younger students, by the parent who manages the profile. Anyone else, whether a teacher, a classmate, a tutor or a grandparent, sees only what they have been given access to, and only because the student or the parent decided so.

There is no default access for the school, the teachers or anyone else. Every door opens from the inside.

And it can be closed at any time. The student or the parent can withdraw access at any moment, and from then on the notebook can no longer be seen. As with any document shared with someone else, a page already downloaded as a PDF stays with whoever downloaded it.

What the Device Doesn't Have

Sometimes the best protection for a child is what simply isn't there:

- **no internet**: the wireless connection is used only to save pages;
- **no apps**: the device starts directly in the notebook and can do nothing else;
- **no ads and no notifications**.

A student with EVONOTE cannot stumble upon inappropriate content, cannot be contacted by strangers, and cannot be drawn into an app built to hold their attention captive. Their device does one thing only: it is a notebook.

7. The English Garden: EVONOTE Grows from the Classroom

Landscape architecture knows two ways of making a park.

The first is the **French garden**: the paths are laid out from the start, straight and symmetrical, and people walk where the architect decided. It looks impeccable on paper. In reality, worn paths soon appear across the grass, wherever people actually want to go.

The second is the **English garden**, built the other way around. First you let people walk. You watch where the paths form, where most people pass and where they stop. Only then do you pave the walkways, exactly there.

EVONOTE is built using the second method.

What This Means in Practice

We started from what is certain: the gesture of handwriting, a surface that respects it, one notebook for each subject, notes that never get lost, and continuous sharing.

These are the foundations of the park. The rest of the paths are not drawn by us, in an office. Students and teachers will show them, through the way they use the notebook every day.

EVONOTE has no major versions released every few years. It receives new features every few months, and updates reach the device remotely. The notebook a student receives today will look different a year from now, because it will have grown along with them.

How We Choose What to Build

A path is paved where many people walk, not where someone passed once. The same goes for new features.

EVONOTE is open to any request that helps teaching and learning, on one condition: **requests must converge**. When several teachers, from different classes and schools, ask for the same thing for similar reasons, it is a sign that there is a real path there. A feature that helps one teacher and gets in another's way does not make the notebook better, however good the idea may be in itself.

And the principle stays the same: **technology adapts to the classroom, not the classroom to technology**. We don't ask teachers to change the way they teach to fit the product. We look at how they teach and build what is useful to them.

The First Paths

We are at the beginning of this journey. The first classes using EVONOTE will show three things:

- **the real impact** of digitalized handwriting in the classroom, beyond the lab;
- **the scenarios that emerge on their own**, from the behavior of students and teachers, not from our plans;
- **what needs to be built next**, so that we offer what is needed instead of asking people to adapt to the product.

As the paths take shape, this chapter will change. It will describe the walkways already paved, and the park will look, year after year, more and more like the place made by the students and teachers who walk through it.

Appendix – Works Consulted

Gerth, S. et al. (2016). Is handwriting performance affected by the writing surface? Comparing preschoolers', second graders', and adults' writing performance on a tablet vs. paper. Frontiers in Psychology, 7:1308.

Hatano, A. et al. (2015). Effects of the use of paper notebooks and tablet devices on cognitive load in learning – An EEG study. IEICE Technical Report.

Ihara, A. S. et al. (2021). Advantage of handwriting over typing on learning words: Evidence from an N400 event-related potential index. Frontiers in Human Neuroscience, 15:679191.

Longcamp, M. et al. (2006). Remembering the orientation of newly learned characters depends on the associated writing knowledge: A comparison between handwriting and typing. Human Movement Science, 25.

Marano, G. et al. (2025). The neuroscience behind writing: Handwriting vs. typing — Who wins the battle? Life, 15(3):345.

Mayer, C. et al. (2020). Literacy training of kindergarten children with pencil, keyboard or tablet stylus: The influence of the writing tool on reading and writing performance at the letter and word level. Frontiers in Psychology, 10:3054.

Morehead, K., Dunlosky, J., Rawson, K. A. (2019). How much mightier is the pen than the keyboard for note-taking? Educational Psychology Review, 31.

Mueller, P. A., Oppenheimer, D. M. (2014). The pen is mightier than the keyboard: Advantages of longhand over laptop note taking. Psychological Science, 25(6).

Osugi, K. et al. (2019). Differences in brain activity after learning with the use of a digital pen vs. an ink pen — An electroencephalography study. Frontiers in Human Neuroscience, 13:275.

Urry, H. L. et al. (2021). Don't ditch the laptop just yet: A direct replication of Mueller and Oppenheimer's (2014) Study 1 plus mini meta-analyses across similar studies. Psychological Science, 32(3).

Van der Weel, F. R., Van der Meer, A. L. H. (2024). Handwriting but not typewriting leads to widespread brain connectivity: A high-density EEG study with implications for the classroom. Frontiers in Psychology, 14:1219945.