kinderpedia

How pedagogy and technology work together to ensure personalised learning

Active Learning



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Introduction

Active learning is a natural progression brought forward by the evolution of our understanding of the learning field. As much as it could be a desire, a temptation and a model for many, it could also be a challenge.

This document will outline the rationale for implementing active learning in class, helping you navigate the topic from start to finish, according to your needs.

Jump on board and explore this challenge and you will surely come out of it with a transformed understanding of what active learning is and how it can benefit your students.

Before introducing the papers

The word learning should not need the word active as a friend, it sounds almost redundant. How can a human being learn without their own action, without intention, and without intrinsic motivation?

The proliferation of technology and scientific research has changed the way we perceive students as passive objects in which knowledge needs to be inserted. The individual acts on the environment, the materials, and the information. The individual creates a unique relationship with these elements and asks questions and challenges, letting themselves be transformed and impacted while creating a new perception of reality and thus, constructing knowledge.

For many years now, the only way that people were exposed to knowledge was during lectures or classes. The efficiency of the method gave it its longevity, mostly because in the past books were scarce and very few people knew how to read and write. On top of that, lectures are time efficient, as they allow disseminating information from one teacher to a group of people, at the same time, in the same place. While in its early days, the lecture or class method helped humanity share information and feel the sense of community, our fascination for its simplicity made us overuse it. As with any process or method, there comes a time when it needs sunsetting, thus allowing for better ways of attaining the same goal.

One of the downfalls of this tradition is that it assumes that everyone listens, understands, and processes the information in the same manner, and that the shared meaning is received equally by all class participants.

An article from Purdue University references a 14th century illustration by Laurentius de Voltolina, which depicts a university lecture in medieval Italy. The scene is easily recognizable because of its parallels to the modern day.

The teacher lectures from a podium, at the front of the room, while students sit and listen. Some students have their books open in front of them and appear to be immersed in the lecture. A few look bored. Some are speaking to their neighbours. One appears to be sleeping.



Classrooms today do not look that much different, the authors argue.



Note: We use the term student instead of child to include any individual that may be in a learning situation of active learning through action, whether they be a small child, adolescent, young adult, or adult.

The world advances at a fast-paced rhythm, the information available increases exponentially, and so do the hours spent in lectures. We have to keep up with the world's rhythm, share a lot of information, and there is no time to reflect in the middle. Therefore, tests and exams brought the final reassurance, a sense of tranquillity from levelling information for all students, and assuming they have acquired the information.

But have they really?

I invite you to switch the term "passive learning" for the term "transmissive teaching." By using this term, we make clear that the information transfer on behalf of the teacher does not guarantee the student's learning.

When we talk about passive learning, we actually put forward the idea that learning does not require action.

Is that possible?

In terms of education, we need to shift the paradigm, and address the elephant in the room: teaching and learning don't always walk hand in hand. To complicate things further add the following questions to the mix.

- Who guarantees that students have achieved the learning outcome?
- How should the teacher feel at the end of a lecture? Calm or even more anxious?
- What did the students actually learn?

The challenge in front of us is to give the teaching-learning process its righteous place and to give students what they need to learn sustainably. There are numerous in-person and digital strategies that make this process effective, more flexible, and adapted to each person and each situation. These can provide a new enchantment to your professional journey.

Throughout this document, you will find papers that can help you decide the best route to implement active learning in your environment. Once you realise the benefits of active learning, you will actually wish you had started implementing it long ago.

Fundamental elements to dive into throughout this paper:

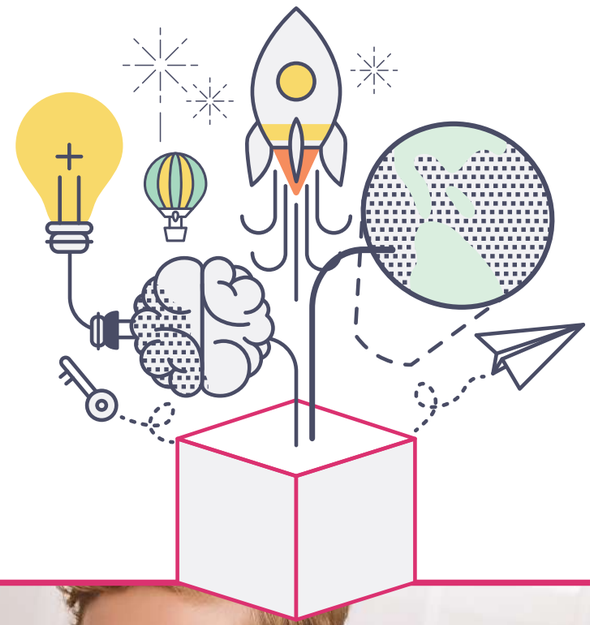
- what is active learning,
- how does it stimulate child development,
- benefits to social skills and emotional intelligence,
- implementing active learning,
- how to do this sustainably,
- feedback - a secret ingredient to potentiate learning.

We continue with "Active learning: discussions, games, and collaborative projects." Here, you can follow a reflection on learning and teaching, how to become involved in activities and part of the teaching-learning process to allow yourself to marvel at the path outlined by teacher and student. The term learn-by-doing discretely appears here, allowing you to foresee the importance of self-constructing knowledge; something no one can do for you.

Throughout the years, studies on the benefits of active learning have reassured us and invited us to change. "The benefits of active learning," is a compilation of motives (namely, social skills, emotional intelligence development, critical and creative thinking) to which you won't be indifferent.

Two papers later, we introduce you to : "Ways to apply active learning in the classroom" and "Active learning: techniques and tools for online courses." The former describes 5 key points that create an active learning culture: motivation, involvement, domain, independence, and growth mindset.

The authors give more weight to the intrinsic nature of motivation, which differs from extrinsic motivation that is found in rewards like presents, grades or medals resulting from the outcome.



The student should have the opportunity to make choices that meet their interests and needs, in situations where they gain the feeling of control and high probability of success and competence. The student develops self-confidence and thus, increases their commitment (engagement) in the task or interaction.

The second paper stresses the importance of technology in the learning process and gives examples of active learning implementations in online environments.



The student becomes involved, acts, and chooses with intention. I emphasise four suggestions: reading information in advance for future discussion, implementing an online learning journal, using polls, and using Kinderpedia. The app facilitates real time communications between students, parents and professors, and offers support for all, even at a distance.

"Set learning objectives for your classroom" introduces to you the necessary prerequisites to setting and planning active learning environments. Moreover, the paper exemplifies the importance of activities that stimulate this type of learning in students, and how this type of student involvement demonstrates their effectiveness.

To complete your understanding of the topic we recommend further evaluating the topic of feedback.

You can do this by reading "Feedback: an essential tool for shaping the educational direction " and "Feedback and a flexible mindset influence each other". Each paper brings in its unique view on the topic. While the first paper deconstructs the word and how it has been employed in practice, the second one highlights the impact of student teacher relationships in constructing knowledge and community building.

The first paper treats feedback as a dynamic tool, where the teacher is not a sole participant in the process. Feedback is then seen as a bidirectional exchange, between student and teacher, where both parties give and receive, reflect and decide, move forward or backward. The paper also looks at how the student's approach to learning will impact their future learning goals.

While reading **"Feedback: an essential tool for shaping the educational direction," be mindful of the differences between complimenting and encouraging.** The word **feedback** refocuses the teacher on the learning process without giving all the credit to the product.

Three ideas to reflect on:

- **thought blocking,**
- **evaluation,**
- **celebration.**

Many traumatic situations harm students when it's time to learn. Strong emotions such as anxiety block their thoughts and lead them to momentary failure. We need to take care of the whole feedback process and keep it in in-depth dialogue **as a constant interaction between students and teachers.**

Also, we should shift our stance on how we react to mistakes. In learning, mistakes should gain more acceptance, as any failure can be a turning point and can unleash unexpected growth. Mistakes are interwoven in the learning process and are essential to gaining new understandings.

Competitive teaching and computational mathematics have ruined the topic of evaluation, causing numerous damages to the way we understand the field of evaluation. To conclude, we invite you to reflect on your own experiences when receiving evaluations, how the particular experience you are remembering affected your desire to learn and even your self- esteem and self- confidence.



This is one more instance where Kinderpedia brings valuable support in the learning journey. The child development module allows every school or nursery to embed the learning goals contained in their curriculum onto the platform. Then, using the mobile app, teachers can make instant observations about children's progress. The observations are then summarised in progress reports which can be easily discussed with other teachers and shared with families. Furthermore, teachers use reports to create personalised learning plans for each student, straight into the app. In other words, they create new learning opportunities to support the areas where they need help.

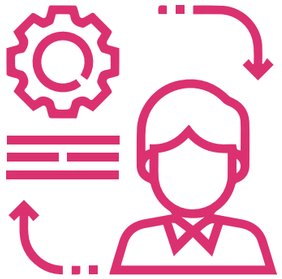
I want to add celebration to this evaluation topic! To evaluate is to observe, register, reflect, plan, share, be, decide, move forward. Right before you move forward, it is important to celebrate. There are many ways of celebrating and I don't mean firework parties, I mean the clarity with which the student and the teacher should enumerate accomplished goals, wins, conquests, and, perhaps unexpectedly, overcome challenges. Students and teachers should cry and laugh together throughout the whole learning process.

Active learning: discussions, games and collaborative projects

Active learning has received considerable attention over the past several years. Often presented or perceived as a radical change from traditional instruction, active learning has attracted strong advocates. - Michael Prince, Bucknell University

Active learning involves collaborative discussions, games, and projects. When the learner actively participates in class, the quality of learning increases. New concepts and theories emerge from the exchange of ideas between all those involved, conclusions emerge naturally, and are more easily understood by the students.

Active learning puts the learner at the center of the teaching process. Active learning is a model where the learner demonstrates a higher level of engagement. Active learning is about activities based on discussion, problem-solving, case studies, role-playing, and other interactive methods. However, instructor guidance is still crucial in the classroom; guidance, feedback, and assessment remain essential elements for academic success. Students' performance improves significantly when they are actively involved.





Active learning is an instructional strategy in which learners take a dynamic role, participate and reflect on their learning.

Unlike passive learning, which consists of simply listening to a lecture, active learning includes short writing exercises, stimulating the articulation of a critical point of view, exercises presenting real-life situations, working individually, in pairs, or collaborative groups.

Learners are more likely to acquire skills when put in collaborative situations and stimulated to reflect. Active learning is more effective than traditional instruction because learners engage mentally with the task, and the experience supports the learner to interact with and reflect on a given topic.

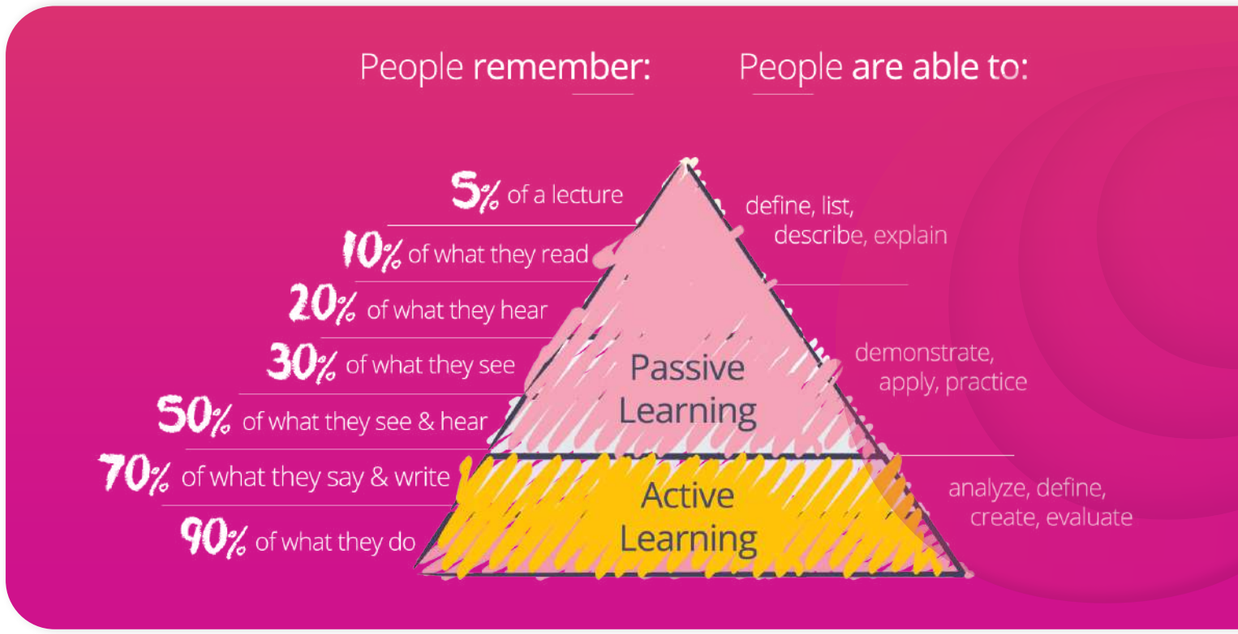
Active learning activities help promote the development of higher order thinking skills such as application of knowledge, analysis, and synthesis.



Active learning activities engage students in deep rather than surface learning, and enable students to apply and transfer knowledge better.

Instruction is most effective when multiple neuronal pathways are stimulated at the same time; the more we can activate learners' brains in different ways, the more they develop.

Engaging as many of the sensory, cognitive, emotional, and social processes of students as possible will increase their learning potential, and this can be achieved through problem-solving activities; tactile stimulation; engaging visual processing; watching films; listening to audio clips, reading, role-playing, drawing, collaborative projects, etc. Active learning is about connecting new information with previous concrete events.



Active learning is generally defined as any instructional method that engages children in the learning process. In short, active learning requires students to do meaningful learning activities and think about what they are doing. While this definition could include traditional activities such as homework, in practice active learning refers to activities that are introduced into the classroom.

The core elements of active learning are student activity and engagement in the learning process. Active learning is often contrasted to the traditional lecture where students passively receive information from the instructor.

Collaborative learning can refer to any instructional method in which students work together in small groups toward a common goal. As such, collaborative learning can be viewed as encompassing all group-based instructional methods, including cooperative learning (Millis, B., and P. Cottell). In contrast, some authors distinguish between collaborative and cooperative learning as having distinct historical developments and different philosophical roots.

Cooperative learning can be defined as a structured form of group work where students pursue common goals while being assessed individually (Millis, B., and P. Cottell, 1998).



The most common model of cooperative learning found in engineering literature is that of Johnson, Johnson and Smith. This model incorporates five specific tenets, which are individual accountability, mutual interdependence, face-to-face promotive interaction, appropriate practice of interpersonal skills, and regular self-assessment of team functioning (Johnson, Johnson, & Smith, 1998). While different cooperative learning models exist, the core element held in common is a focus on cooperative incentives rather than competition to promote learning.

Problem-based learning (PBL) is an instructional method where relevant problems are introduced at the beginning of the instruction cycle and used to provide the context and motivation for the learning that follows. It is always active and usually (but not necessarily) collaborative or cooperative using the above definitions. PBL typically involves significant amounts of self-directed learning on the part of the students.

“Active” vs “passive” learning

The line between ‘active’ and ‘passive’ learning can be blurred. For motivating and guiding students towards learning we need more than a simple one-way transfer of information.

Often, passive learning can be used as the foundation for a complex learning process, in which the learner is actively involved. If the learner reads materials without being stimulated to reflect, will only retain 10% of what has been covered.

A presentation will help the learner to integrate the information, and then to define, explain and describe it. When the teacher’s explanations are accompanied by visual support, the learner will be able to remember 50% of what is presented and apply it in practical contexts.

The child’s success in analyzing and evaluating the content, but also in generating new ideas, depends on the variety of contexts that stimulate critical thinking. After reading, listening, and writing, the children must be placed in practical situations, only then the active learning process is complete and they will be able to retain 90% of what they have learned.

Active learning has become an increasingly used concept in education. In active learning the child is completely involved in the process of accumulating information, developing skills, forming critical thinking and making connections between different areas.

Differences between active and passive learning

PASSIVE LEARNING		ACTIVE LEARNING	
Passive learning is teacher- oriented.	Passive learning uses methods where learner involvement is relatively less.	Active learning is learner-oriented, the mentor-learner relationship is not completely removed but is supported through a partnership.	The methods used in active learning are more practical.
Passive learning requires learners to absorb, assimilate, consider, and translate information.	Passive learning provides new information without making additional connections.	Active learning requires students to think, discuss, challenge themselves, and analyze information.	Active learning stimulates individual reflection, building on previous experiences.
In passive learning, on the other hand, it is the teacher who takes responsibility for the learner's progress.	In passive learning, teachers are seen as the primary source of knowledge.	In active learning, responsibility for the learning process is taken by the learner.	In active learning, the teacher plays the role of a facilitator who creates an environment for the learner to acquire knowledge.
In contrast, passive learning promotes convergent thinking.		Active learning promotes divergent thinking, creative and unique ideas.	

Constructivism, the origin of active learning methods

Active learning is based on a theory of learning called constructivism, which emphasizes the fact that learners construct or build their understanding. Jean Piaget (1896–1980), a psychologist and founder of constructivism, researched the cognitive development of children, observing that their knowledge was individually built up, bit by bit. In the process of making meaning, children replace or adapt their existing knowledge and comprehension with deeper levels of understanding.

The theory of social constructivism says that learning happens primarily through social interaction with others, such as a teacher or a learner's peers. One prominent social constructivist, Lev Vygotsky (1896–1934), described the zone of proximal development (ZPD). This is the area where learning activities should be focused, lying between what the learner can achieve independently and what the learner can achieve with expert guidance. The revised Bloom's Taxonomy (Anderson, Krathwohl et al, 2001) offers a classification of the types of knowledge and cognitive processes students use in order to learn. Active learning approaches will help students develop at every stage of Bloom's Taxonomy; it will enable learners to engage with the more complex cognitive processes such as evaluate and create, and build a knowledge base that begins with, but is not limited to, factual knowledge. For example, to develop metacognitive knowledge students need to be actively involved with, and aware of, their own learning.

In their research on educational approaches centered on active learning, Grunert O'Brien, Millis, and Cohen found that students learn more when:

- Discuss a topic with their mentor and peers;
- Are stimulated to build their own beliefs and guided to compare these with observations from practical activities;
- Collaboration and communication are key elements built into the learning process;
- Viewing and reading are accompanied by in-depth conversations and when they apply what they have learned;
- The relevance of new learning is visible and they manage to connect it with learning experiences before this point.
- The teacher does not just deliver theoretical content but supports the learner towards self-learning.

Benefits of active learning

The benefits of active learning are related to developing collaborative skills, building emotional intelligence, and training creative and critical thinking.

- Active learning builds both knowledge and understanding which students can then apply to new contexts and problems. This understanding and problem-solving approach is attractive to employers and universities.
- Active learning fosters students' learning and their autonomy, giving them greater involvement and control over their learning and giving them skills of life-long learning. This will also allow learners to develop their metacognitive thinking
- Active learning does not necessarily require small classes or high resource input. It is tempting to think that active learning cannot take place in schools with large group sizes and in classrooms with relatively limited resources. Learner-focused questioning and instruction with well-focused pair and group discussion can enable active learning in larger groups without high cost.
- High-quality examinations such as those offered by Cambridge Assessment International Education require students to have developed higher-order thinking skills to achieve high grades. Active learning approaches help learners to develop these skills.

Active learning can be a starting point for instructional design as it consists of the problem-solving, exploration of real-life situations, and concrete involvement of learners in the learning process. It is complementary to passive learning, as it stimulates the learner to connect previous information with newly acquired information and leads him/her to find alternative solutions for certain situations and contexts.

What are the benefits of active learning?

1.

Develops collaboration skills

Collaboration is an essential pillar of the active learning approach. By working together in teams, students develop their social and communication skills and understand the need for group work in everyday life and the challenges that accompany these experiences.

When pupils learn to collaborate and work more closely in teams, they find it easier to complete the tasks and projects they are assigned. Teamwork also allows them to gain more knowledge by pooling their ideas.

2.

Encourages risk-taking

Active learning creates an environment that puts learners in a position to take individual or group decisions. Confidence in one's strengths is consolidated as the learner feels comfortable sharing their thoughts and arguing their opinions.

Active learning shows learners that risk is not always a bad thing: it can sometimes bring surprising rewards.

3.

4.

5.

6.

7.

Increases engagement

Active learners demonstrate greater engagement in the learning process and a greater desire to learn new skills. Often in active learning, the concept of the flipped classroom is used, where students learn about a topic and develop a set of questions and curiosities before the teacher's lecture.

This increases student engagement and motivation and creates an environment for an active learning process.

Stimulates critical thinking

In a world where fake news has become part of our daily discourse, the ability to identify a legitimate source or detect a flawed argument becomes increasingly important.

Active learning shifts the focus - from passively (and possibly unquestioningly) digesting information, to being thoughtful about the sources and perspectives you come into contact with. In active learning, learners can construct stronger arguments, challenge assumptions and recognize credible and valid sources of information.

Stimulates creative thinking

Creativity is one of the key skills needed for the workplace of the future and one of the hardest to train through traditional methods.

Active learning helps learners see creativity not as an innate value, but as a tool that we train and develop throughout life. Through active learning, students will understand that they need to work hard to hone their creative thinking skills.

Problem-solving

By fostering problem-solving skills, students learn to look at challenges from a new, more flexible perspective. When children tackle problems on their own or in groups, they become anchored in their tasks.

The stages of problem-solving can be made up of active learning methods, which are: identifying the problem, finding the causes, defining solutions and alternative solutions, implementing them, and evaluating the process.

Developing emotional intelligence

The introduction of active learning methods in applications with students brings with it benefits in the three components of emotional intelligence: understanding emotions, expressing emotions, and emotional self-regulation.

Active learning enables the shaping of an educational environment conducive to the expression of students' opinions, emotions, and feelings.

Active learning positively influences a learner's learning journey. They must take the initiative to be fully engaged in the classroom and be aware of their learning progress. When active learning is practiced, the learner succeeds in developing collaborative, reflective, and problem-solving skills, understands the importance of active engagement in learning, and becomes more motivated to develop their key competences.

Thus, active learning, as the name suggests, is a strategy that involves dynamic role-taking, participation, and reflection on the part of learners. There is a long list of benefits for the introduction of active learning methods; the most important is: stimulating critical and creative thinking, increasing engagement and risk-taking, and developing collaborative and communication skills among students.

The list of suggested activities through which we can implement active learning can be completed. The first step towards bringing a learner-centered process to the fore should be a discussion highlighting the real benefits of active learning for the child. Some learners may find it difficult to participate in a complex active learning activity, therefore it is recommended that the shift from a lecture-only activity to one in which the learner is involved should be gradual

Ways to apply active learning in the classroom

Bonwell and Eison summarize the literature of active learning and conclude that it leads to better student attitudes and improvements in students' thinking and writing. They also cite evidence from McKeachie that discussion, one form of active learning, surpasses traditional lectures for retention of material, motivating students for further study and developing thinking skills.

Applying active learning in the classroom is essential to the success of the teaching process as it stimulates the development of children's emotional intelligence as well as critical and creative thinking.



The literature states that it is important to actively involve students in the learning process, to train critical thinking and collaboration using modern methods and tools. Thus, by promoting learning through play, debate, but also by giving the pupil the chance to be in the role of a teacher, new learning is reinforced faster and more effectively.

Dan Levy, professor at Harvard Kennedy School, says that in addition to the theoretical content we prepare as teachers, it is essential to design practical and engaging activities, as they are essential pillars in creating an innovative teaching process. He also stresses the importance of communicating with students, adopting an open and flexible approach and actively listening to their suggestions to the teacher.

1. Involve all the senses

Research shows that when more than one sense is involved (olfactory, visual, kinaesthetic, etc.) the information is better integrated by the learner. Active discovery learning, using concrete materials, enables the pupil to remember later not only what he has heard from his teacher, but also what he has touched, seen, and experienced.

2. Train critical thinking

Active learning promotes pupils' critical thinking and aims to stimulate it through moments of reflection during activities. Whether we are talking about numbers, geography, art, or literature, the child needs to unravel the mysteries of these areas through a guided process. If information is discovered rather than received as a result of a lecture, the pupil's motivation and willingness to engage in the process will increase. Allowing time for the child to find, outline or express an answer to a given situation is a first step towards shaping a teaching process based on active learning.



3. Encourages collaboration

Among other things, another feature of active learning involves working together with others. If learning time is accompanied by a collaborative activity, learners will not only be genuinely involved in the learning process, but will also develop communication skills, empathy, and confidence in, working together'. According to the subject studied, each working group can be given a situation to solve, argue, and complete. The teacher's role at such times is to guide, support, and ensure that the purpose of the activity is achieved.

4. Uses techniques and tools from management

In the group activities detailed above, you can integrate methods such as brainstorming (stimulates creativity and communication, as students are put in the position of agreeing on the most useful ideas), Bono hats (a method through which the student discovers how to arrive at the best solution to a problem by moving to different perspectives), gallery tour (stimulates critical thinking and underlines the importance of arguing an opinion, but also leads to the formation and reinforcement of active listening skills).

5. Turn children into teachers

Give children the opportunity to experience the role of a teacher and challenge them to prepare presentations for the rest of the class on a particular topic. This suggestion is useful to promote active learning as the pupil is directly involved in the process of discovering new information, understanding the importance of feedback from both the teacher and peers, practicing public speaking skills, and becoming self-taught.

6. Promotes learning through play

Role-play is a great way to develop problem-solving skills, support self-discovery and facilitate group cooperation. In the Cambridge Dictionary, role-playing is presented as a tool through which the learner can practice empathy, creativity, and finding solutions to real-life situations. Active learning takes place through this suggested activity, as the learner can apply and relate theoretical concepts to real-life moments.

7. Encourages debate

Debate is a structured approach that stimulates critical thinking, the power of argumentation of a perspective, and creativity in finding innovative ideas; also, through this suggested active learning activity, the learner understands that in many moments in real life we can have opinions that are even contradictory to those around us. Debates provide students with the necessary context to train or practice their public speaking skills, an important skill for their educational journey and beyond.

The list of suggested activities through which we can implement active learning can be completed. The first step towards bringing a learner-centered process to the fore should be a discussion highlighting the real benefits of active learning for the child. Some learners may find it difficult to participate in a complex active learning activity, therefore it is recommended that the shift from a lecture-only activity to one in which the learner is involved should be gradual.

How can schools make the best use of active learning?

- Prioritize professional development in active learning. Encourage teachers to work together and to share practice that promotes the development of active learning in the classroom. For example, a group could meet regularly to reflect on a reading about active learning or to share their experiences of implementing a new strategy. It is also important to encourage teachers to update their subject knowledge and pedagogical content knowledge as appropriate for the age group(s) they teach (Coe et al, 2014).

- As exams draw nearer it can be tempting to move away from active learning approaches. However, simply transmitting knowledge to learners will not fully prepare them for the demands of their exams. Developing a school ethos which focuses on student learning across a broad curriculum is essential to foster learners' understanding, enjoyment and ownership of their own learning, as well as good examination results.

- Evaluate the impact of new strategies that are implemented, whether these are tried across the whole school or by individual teachers or departments, and share the findings.



How can teachers make the best use of active learning?



MOTIVATION

Learners should see how the content or skills can be applied in everyday lives.
Learners are more likely to attempt tasks that they believe they believe they can accomplish.

ENGAGEMENT

Design learning experiences that are better attuned to learners' needs to engage in meaningful work and solve problems that are relevant to their lives.

GROWTH MINDSET

Active learning culture that values growth mindset will teach learners that patience, perseverance and strategy are more important than innate intelligence.

OWNERSHIP

Learners are allowed to design challenging tasks and are given the opportunity to define a pathway to accomplish that task.

INDEPENDENCE

Transforms learners from compliant consumers of other others' content and concepts to committed creators of knowledge, insight, and new learning.

Active learning: techniques and tools for online courses

Education literature recognizes teaching practices that involve technology as a current trend of increasing the effectiveness of students' education (Eastman, Iyer, & Eastman, 2011). Researchers examined how technologies have affected learning. For example, Ghosh and Renna (2009) reported that using a technology-enhanced teaching pedagogy would help improve students' cognitive skills and motivate students to major in economics.

After almost two years into the pandemic, we would have thought that technology holds no secrets for teachers. Yet many of its tools remain unexplored in the virtual classroom. Online lessons can be turned into truly interactive sessions, for teachers, students, even parents. When used effectively, digital techniques and tools offer many benefits to instructors and learners. When teachers integrate a range of specific techniques such as flipped classrooms, polls, learning journals, guided reflection, learning online becomes attractive and effective.

Passive learning puts students in the role of "receptacles of knowledge„ ; they do not participate directly in the learning process. Active learning happens when students are aware of their development, look, touch, reflect and debate. We cannot eliminate passive learning from students' lives- this is neither realistic nor necessary. But we can complement every educational experience with engaging and interactive elements, teamwork, and practice.

The University of Arizona (2013) points out that active learning doesn't just happen in face-to-face learning, but can also take place in large-enrollment courses, hybrid courses, and online courses through the intentional use of cost-effective technology.

The most effective online sessions are those that offer students more opportunities for active engagement and interaction.

The online environment fosters the development of many types of activities, tasks, and ways to encourage students to make meaningful connections between their lives and interests and the course material.

When developing a classroom activity for an online course, take special care to include opportunities for reflection on the purpose of the activity.

One of the most important elements for online learning is finding a way to unlock students' creativity while encouraging them to become more than just passive consumers of information.

As teachers, we want students in our courses to actively appreciate, evaluate and respond to the ideas and concepts, make connections to other ideas, and demonstrate their understanding by using their new knowledge outside of our classroom.

We want to cultivate critical thinking and help students to develop active listening and reading skills. Here are some specific tips to help achieve this goal.

Here are a few examples of how you can bring active learning to your class through technology:

1. Allows students to access reading-materials in advance

The concept of the flipped classroom means that the student becomes responsible for integrating content before the teacher-guided discussion. Allow students to download lectures or reading notes, and encourage them to read or listen carefully, fleshing out and completing these advance notes.

When students access materials in advance, the online course becomes more interactive. Each participant can have the opportunity to present their individually formed conclusions and share information with the group.

2. Learning journal - an active learning technique in an online environment

Ask students to keep a regular learning journal in which they respond to a set of basic questions about their progress. These questions can be used to make learners more aware of their development and skills training. They will know what their strengths are, where they can improve, what opportunities exist and how to organize themselves better.

3. Questions - key elements in active learning

Pose regular discussion questions that require students to respond to course ideas and each other in a meaningful ways. The most engaging questions are often focused on the intersection of the course's core content with current events. Questions such as: why, how, should we..., what would happen if... or discussion prompts that include action words: compare, plan, exemplify, etc.)

4. Polling

Polling is a quick, easy way to check the opinions or thought processes of your students by posing a statement or question and gathering their responses in real time. Zoom's Polling feature allows for simple multiple-choice polls, questions that ask your students to state their level of agreement with a statement, assessing the level of student interest on a list of topics, or yes/no or true/false questions. Simple polls can be used at the start, end, or at any moment during an online class session to engage students.

Create the Zoom poll (see **Zoom Help Center** to learn how) and determine how much time your students will need to respond to it. Make sure the question title and prompt is clearly worded and not open to misinterpretation.

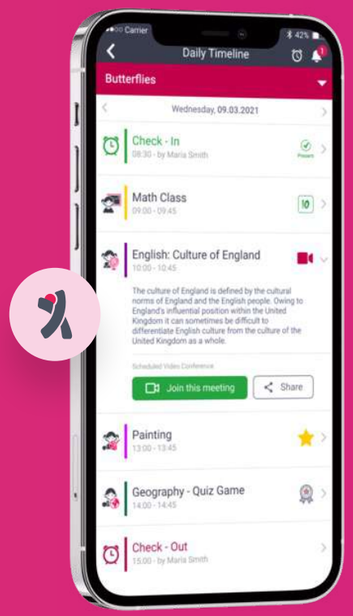
For polling you can use as well Mentimeter and Kinderpedia.

5. Kinderpedia

A complete communication and management solution for education. Kinderpedia allows teachers to communicate in real time with students and their families.

In the mobile app, teachers easily organize their schedules, take attendance, grade students. They can schedule personalized assignments for students or groups, give feedback on assignments from their smartphone and provide real-time feedback.

In the case of online or hybrid learning, Zoom conferences can be started with a click from the Kinderpedia app.





6. Wordwall

A fun, friendly, colorful and interactive active learning technique for the online environment.

The Wordwall platform provides several templates that can be customized according to the needs of learners, their availability and openness, and the subject matter of the online course.

7. Wooclap

Wooclap is an interactive electronic platform used to create polls and questionnaires.

The users answer questions anonymously through technology devices such as smartphones or laptops.



8. ClassFlow

A platform that allows teachers to design different interactive games for any subject in online courses. An active learning technique for the online environment that students will love immediately.





9. Kahoot

A useful tool to test students' attention, to evaluate, to give a dynamic to the online course and to recapitulate previously discussed concepts. A dynamic and interactive game, enjoyable for both students and teachers.

Active online learning requires patience. Start with simple, low-stakes activities. Online courses are incredibly rewarding, fun and engaging. First of all establish a trusting relationship between you and your students. Form an open, flexible environment where both you and your students have an overall sense of well-being.

> "Don't learn to do, **but learn by doing.**"
>
> Samuel Butler

Feedback: an essential tool for shaping the educational direction

The literature consistently ranks feedback as one of the most powerful interventions teachers can integrate into the classroom. Feedback is a complex construct that integrates three distinct components, which we call **feed up, feedback, and feedforward.**

To fully implement a feedback system, teachers need to use all three. In this article we present essential information you need to know about feedback and why it is an essential tool for shaping the educational direction.

Purpose of feedback

Effective feedback is designed to determine a learner's level of understanding and skill development to plan the next steps towards achieving the learning intentions or goals.

As mentioned earlier, feedback has three distinct components:

The three instances of feedback

Feed Up

The first component of an effective feedback system involves establishing a clear purpose. When students understand the final goal, they are more likely to focus on the learning tasks.

Establishing a purpose is crucial to a feedback system because when teachers have a clear overall goal, they can align their expectations.

The teacher can plan readings, collaborative projects, investigations, and assessments to ensure that students focus on content related to the set goal.

Feed Back

The best feedback is one that gives students information about their progress, but also about those areas they need to improve. To reach the set target, the teacher should provide support and outline actions for the pupil to take to move closer to the expected standard.

Ideally, teachers provide feedback gradually at the end of each stage completed, so that at the end, the broad work task has the desirable outcome.

The feedback students receive is made up of suggestions and guidance to improve performance.

The teacher must celebrate the small moments of success with the students, but at the same time be honest about all the steps they still need to take to reach the final goal.

Feed Forward

This formative aspect of a feedback system is often left out. In an effective feedback system, teachers use assessment data to plan future instruction; hence the term feed "forward".

In an effective feedback system, teachers use assessment data to plan future instruction; hence the term "feed forward". As teachers analyze student work, whether it's a comprehension check assignment or a formative assessment, they use what they learn to modify their subsequent teaching.

Teachers need to show flexibility, understanding, and openness, and they need to see the feedback process as a two-way street. Once assessment takes place, we not only find out what the students' level is and give them directions for improvement, but as teachers, we also discover things that we could do differently next time in our instruction.

We can either talk about a whole class intervention or additional instruction for students who have a greater need to close a gap.

Feedback is a key element of the continuous learning and evaluation process. Providing frequent, continuous and relevant feedback is a significant means of improving learning outcomes.

Effective feedback helps the learner to reflect on the learning process and their learning strategies, so that they can make adjustments to make further progress.

In 2011, John Hattie contributed to a publication by Sutton, Hornsey & Douglas about **Feedback: The communication of praise, criticism, and advice** with an article about **'Feedback in schools'.**

This short text is definitely a must-read for everybody trying to learn more about the feedback model behind the Visible Learning research. John Hattie provides some interesting clarifications and explanations to his previous articles about feedback in schools:

1. Errors need to be welcomed. Exposure to errors in a safe environment can lead to better performance. Students fear mistakes because they fail to understand their true value, a failure should not be seen as irreparable, but as a first step to do better next time.
2. Feedback should be provided in a differentiated way and accompanied by a set of explanations so that, depending on the case, the individual learner or the working group can understand and integrate what they hear properly.

3. The feedback can go in the following directions: teacher-student, teacher-pupil group, pupil, pupil-teacher, pupil-pupil. Interventions are needed to encourage fair feedback from peers. Often, these situations can help the school community to look objectively at a given situation, to argue and to think critically.

4. As mentioned above, the feedback moment also provides teachers opportunities to further improve their teaching, to make it more effective and appropriate to the needs of the group of pupils.

5. Researchers point to several strategies to maximize the power of feedback. Here are three guidelines for using feedback to improve learning:

   - Focus your attention on the process and how a task was performed, not on the person who performed it;
   - Elaborate, detailed, specific, clear, unbiased and objective feedback;
   - It promotes focus on learning objectives, and strategies to achieve them;

> "Feedback is a **powerful way to influence** student outcomes.„
>
> Hattie & Timperley



Feedback

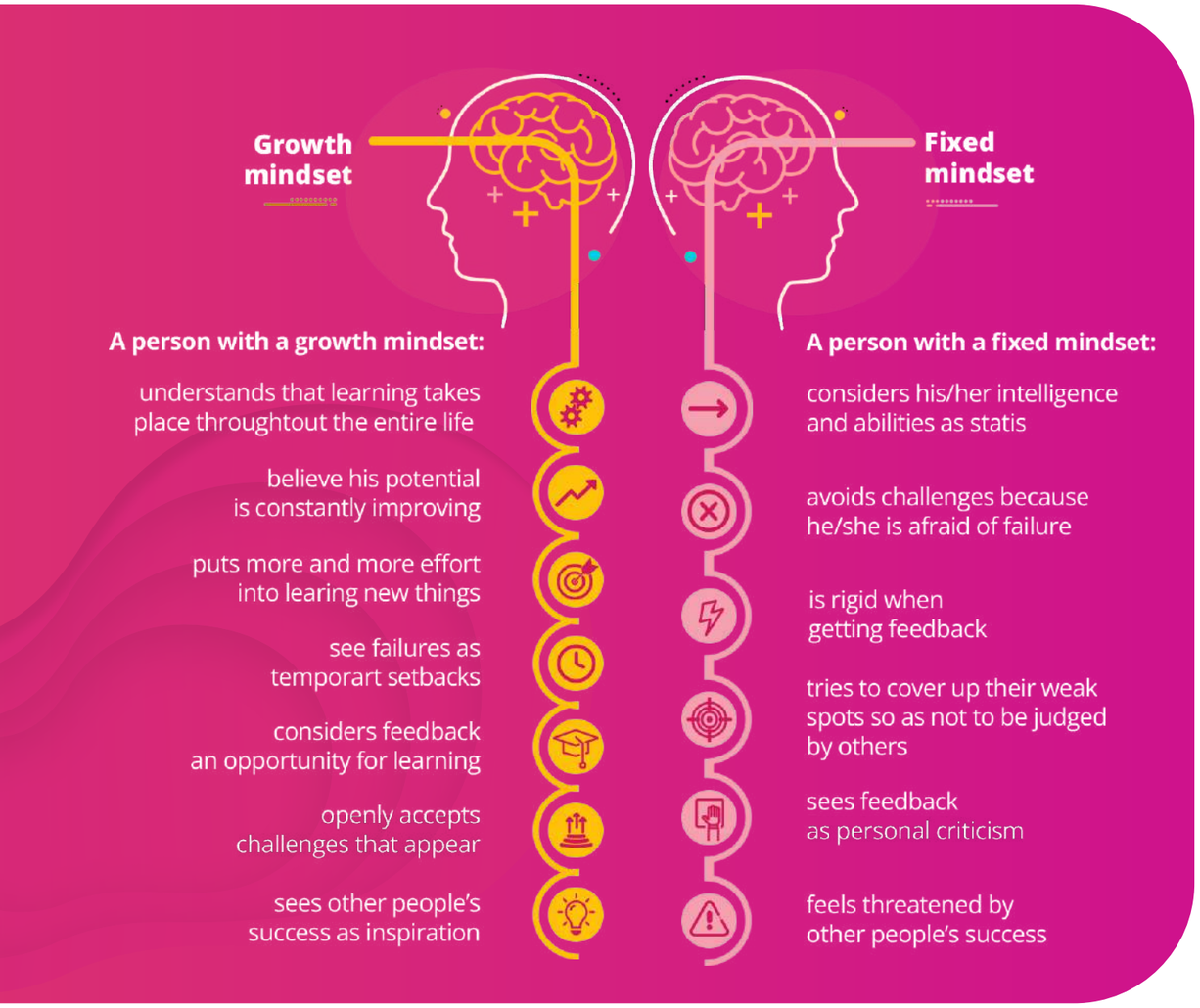
- is about encouragement, feedback is about directions we can take to achieve goals, flexibility, and openness. When teachers give feedback, they need to ensure that students are ready to receive it and integrate it appropriately. They need to be there for them and support them in the process. Feedback is an essential tool for the teaching process that helps us to shape and improve the educational trajectory.
- is a powerful tool when it is given, received, and integrated effectively with a flexible mindset. We need to look at feedback from the perspective of a flexible mindset, not only to improve the skills of students and teachers but also to motivate and increase the productivity of the school community.
- is effective when it focuses on the skill development process, conveys the importance of effort, and motivates students to persist in learning. When they cultivate a flexible mindset, students understand that their skills can be developed through practice and dedication.
- provides information about current knowledge but also about further skill development. Understanding progress and level of achievement enable both teacher and child to make decisions about the next steps to be planned in the learning program, and this understanding can only take place through a flexible mindset. The learner is stimulated to actively engage with their learning strategies to make changes to improve learning.

In the following, we will discover together what a flexible mindset is, why it is important, and especially how it helps us when giving and receiving feedback.

Feedback and a growth mindset go hand in hand

The flexible mindset is one of the best-known theories in modern psychology, which argues that the way a child approaches learning can have a significant impact on their ability to understand the material, learn valuable lessons, and solve real-world problems in the future.





Feedback and a flexible mindset influence each other

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Carol Dweck (Professor of Psychology, Stanford University) addressed the concept of flexible mindset when she examined the learning behaviors of a group of students and their attitudes toward failure in the 1970s.

In her research, Carol Dweck (2015) made a distinction and classified the participants into two categories: **fixed-minded and flexible-minded.**

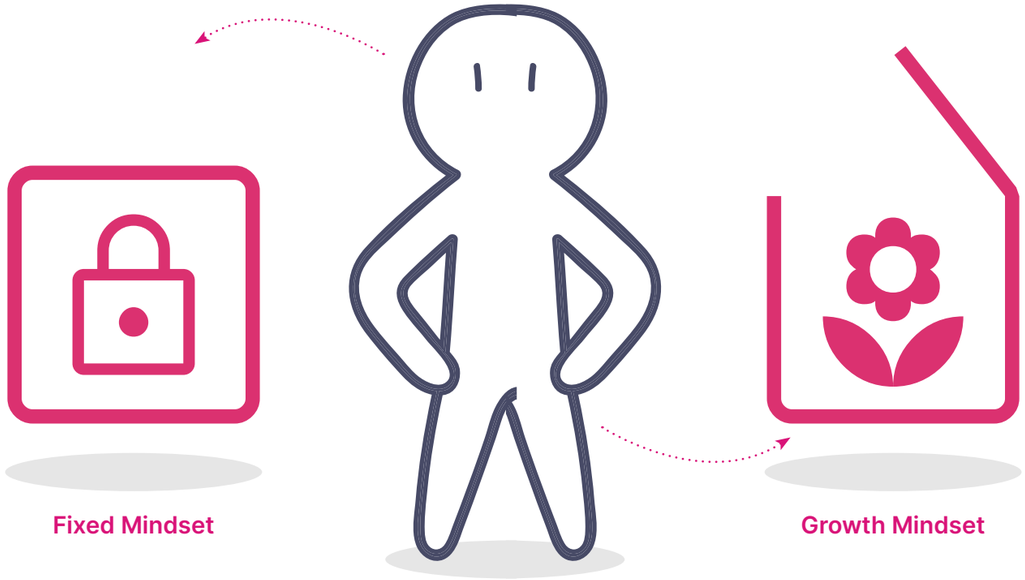
The author of the research noted that students with a fixed mindset gave up more quickly when faced with a challenge, feedback was not accepted, and failure was seen as a stopping point.

Students with a flexible mindset believed that their intelligence and abilities were a direct result of effort, strived for more ambitious goals, put more effort into their studies, understood the role of mistakes as well as feedback, and ultimately had higher performance levels.

Practicing a flexible mindset early on helps create the perfect context for receiving and giving feedback in the future.

As children learn new concepts and move through different learning units, the flexible mindset allows them to understand that feedback is a tool that supports learning and drives growth.

By fostering a flexible mindset, children are more likely to be motivated to learn, to be actively engaged, and to be responsible for their journey.



Carol Dweck, interviewed in Education World, says that success in school does not depend heavily on innate talents, mastery, or intelligence, but that a right mindset adds to all of these. Having an open and flexible mindset will help students become more aware of their potential.

To encourage open and flexible mindsets, feedback needs to move away from praising ‚natural aptitude' over hard work and effort. The flexible mindset theory is based on the belief that any child, regardless of ability, can excel at school. Giving effective feedback to a child for putting in effort or working hard is much more encouraging than praising them for being clever. While it is important to receive recognition for achievement, focusing on qualities such as intelligence can be less beneficial, as children begin to value talent over effort.

The feedback we give children is beneficial when it focuses on the idea that every mistake we make is a vital part of the learning process and an opportunity to learn. It's not about celebrating the mistakes, it's about understanding their role and value.

In Dweck's theory, the focus is on encouraging children to improve their strategy for identifying answers, rather than simply telling them they got it wrong.

As a teacher or an adult in a child's life, you are in an incredible position to instill in them a set of values about the importance of effort in their learning process. It is essential to give your students regular feedback and intervene if necessary to make sure they are on track.

A person with a flexible mindset openly accepts feedback as well as challenges, persists in the face of failure, and sees the effort as a natural path to success. Feedback received and given with a flexible mindset is a truly effective tool for school systems around the world and can guarantee the performance of the school community.



Final challenges on the search for structure

Right now, your attention must have made you skip a few lines or maybe pages, and the search for solutions is starting to have some answers and still a certain restlessness. Here, you also have to make your own knowledge construction, to understand where you are and where you want to go at this point. If you are still looking for an organizing structure, something that gives you safety and coherence and that creates a rationale to act, follow the next piece of this document, where I introduce the HighScope approach.

The HighScope approach is an Active Learning approach with over 50 years of research and practical implantation in several countries of the world, different socio-cultural environments, and different educational programs. In it, children learn by doing, act on materials and situations, interact with others, and build their own knowledge. The teacher has a fundamental and irreplaceable role.

To create a rationale and orientation in this entire process, HighScope came up with a structural element – the HighScope Learning Wheel. (Epstein & Hohmann, 2012). A similar wheel exists for more advanced learning levels, where content is introduced as a fifth component (Buckleitner & Hohmann, 1992).

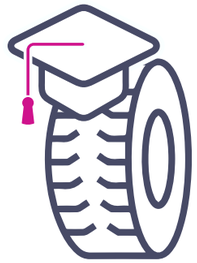
HighScope's Wheel of Learning

HighScope's Wheel of Learning allows you to look at this whole process and integrate each piece, understand how, where, and when to introduce each change in the educational process.

This change cannot be done at a single rhythm; each teacher is in a different and unique situation and in this uniqueness lies the educational process richness.

In the Wheel of Learning, you will find Active Learning in the center, which requires 5 ingredients for implementation:

- Materials,
- Manipulation,
- Choice,
- Child Language and Thought,
- Adult Scaffolding.

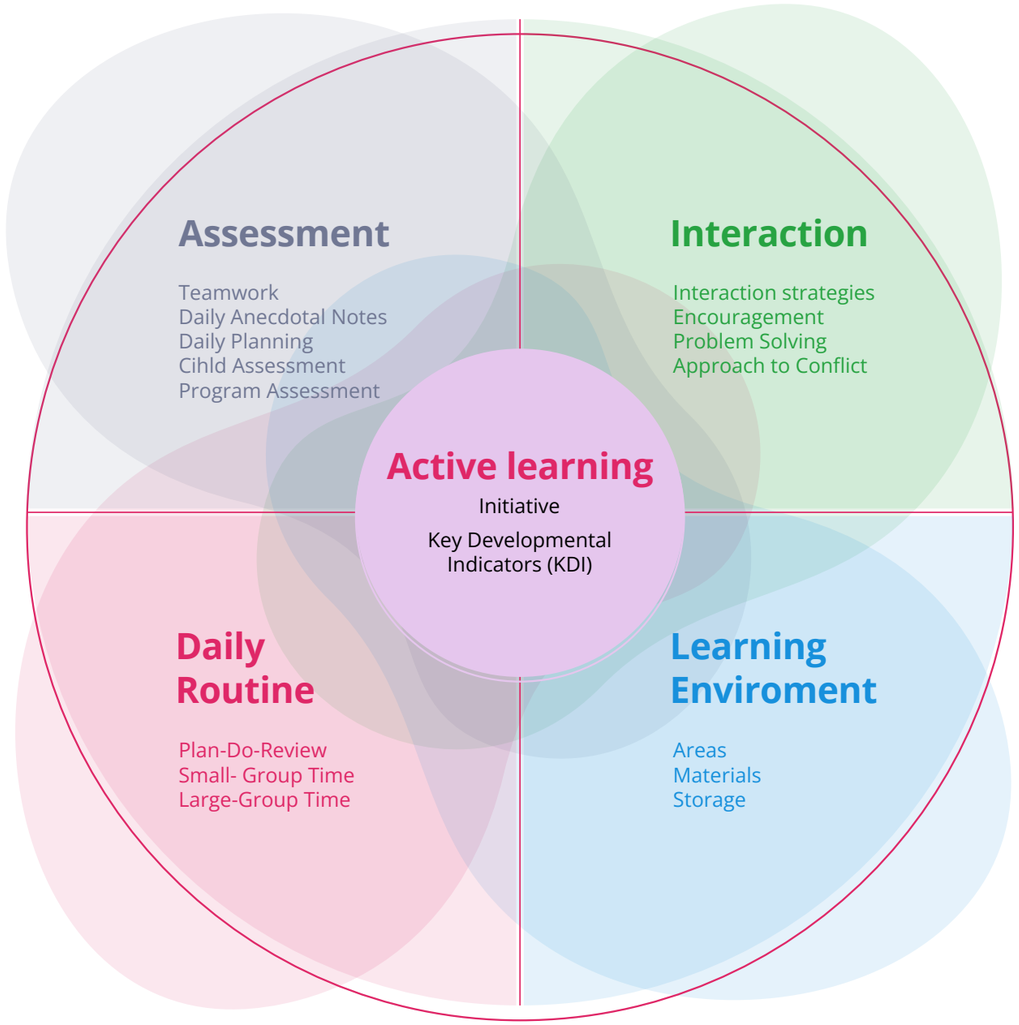


You will also find four main intervention, training, and implementation areas:

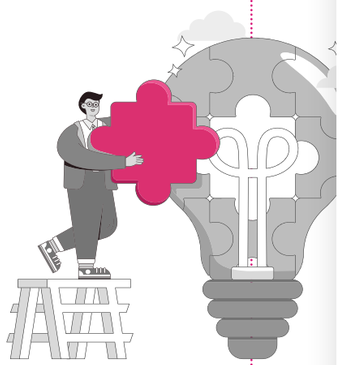
- Interaction,
- Learning Environment,
- Routine,
- Evaluation.

These become crucial in teachers plans, acting as a filter which transforms their thoughts, simplifies them and hence, the learning process takes place. I suggest you look carefully at HighScope's Wheel of Learning and notice what draws your attention.

Where do your eyes stop?



The HighScope Preschool Wheel of Learning



Active learning's 5 ingredients:

- Materials

A large amount of open-ended materials which must be appropriate to students' age and may be used in multiple ways. The direct interaction with the materials leads to insights and knowledge construction.

- Manipulation

The student has the opportunity to explore materials with time, in their own way, and with their own intentionality.

- Choice

The student makes choices in the process. The opportunity to choose materials, activities, and ways of learning is essential.

- Child Language and Thought

The student talks about their experiences and about what is happening, they share questions and conquests, describe the action, and reflect.

- Scaffolding

The adult recognizes and encourages intentions, conquest, conflict resolution, creative processes, and intentions. They create partnerships and the conversation flows naturally in an environment of cooperation and autonomy.

We also briefly introduce here each of the Wheel's components:

If you begin the Learning Environment, you can promote a significant transformation: intervening in the space, focusing on how it is structured and how it can promote autonomy, choice, sociability, and the emotional, empathetic, and creative expression. A classroom where chairs and tables are turned in the same direction, everyone giving each other their backs, and avoiding any interaction automatically leaves out several key active learning elements.

When a classroom lacks materials or the space allocated to them is a single corner near the window, we know this is an area that needs intervention. Space pedagogy has shown us how it can strongly support teachers' and students' action. We do not need expensive materials, million-euro chairs and tables, or an interactive board. What we need is a rationale that promotes space in active learning! If space and the active learning environment are already your allies, you have three more components to focus your attention on. Perhaps, the interaction area holds the greatest secret, the turning point!

When adults accept to become partners, to have time, and to be present, they accept that conflicts with others, with situations, and with materials are part of learning and that the teacher can have a fundamental role. All of this goes further when the teacher allows themselves to be transformed, to start to recognize and name their feelings, to look for alternatives to solve conflicts, and see in them great learning opportunities.

6 steps for conflict RESOLUTION

Notice HighScope's 6 steps for conflict resolution image is explained in detail in You Can't Come To My Birthday Party! Conflict Resolution With Young Children (Evans, 2002).

Here, a problem becomes an important learning, sharing, and communication opportunity. To facilitate its implementation, I suggest you go through specific training so you can practice the skills needed and feel comfortable in the social skill teaching-learning process.

1. Approach, calmy, stopping any hurtful actions

a. Place yourself between the children, at their level.
b. Use a calm voice and gentle touch
c. Remain neutral rather than take sides.

2. Acknowledge children's feelings

a. "You look really upset"
b. Let children know you need to hold any object in question.

3. Gather information

a. "What's the problem?"

4. Restate the problem.

a. "so, the problem is..."

5. Ask for ideas for solutions and choose one together

a. "What can we do to solve this problem?"
b. Encourage children to think of a solution.

6. Be prepared to give follow-up support.

a. "You solved the problem!"
b. Stay near the children.

On the other hand, the evaluation component has several divisive issues in today's education. Think about the importance of registering and the way teachers and (older) students do it, the teacher-student feedback done both ways, the teamwork, teacher's self and other-evaluation practices, and planning reflections. Lastly, we have the daily routine component, with different shapes according to students' ages and the number of curricular hours they are subjected to. However old students may be, the routine introduces three essential moments:

Large-Group Time **Small-Group Time** **Plan-Do-Review**

Each one of these times has a rationale and a cadence that facillitates focus times, brain oxygenation, promotes individual action moments, as well as small and large group moments, and creates a sense of community which is fundamental to any team!

HighScope has conducted research for over 50 years on the learning process and specifically on teacher training and implementation. It guarantees that teachers do not implement fads or impulses but that they follow their own rhythms, their learning ability, their current situation, their energy, and their profile. In HighScope, we care for the adult's learning process just as we care for the child's learning process. This provides adults with a great advantage at adhering to the process and succeeding.



Fewson (2008) introduces a few particularities of implementing active learning in elementary and middle school, and specifically of implementing the HighScope approach. Here, we can see how the rationale "children learn by doing" introduces great intentionality in the teaching-learning process, moving along with children and adolescents throughout their entire journeys. If you look at the child, adolescent, and adult as "active learners", their approach and your view gain a new perspective and the way you act as a teacher definitely gains another shape.

The intentional teacher is an expression that can be found in some documents and that sometimes goes unnoticed (Epstein, 2007).

- **What intentionality do I place in the way my classroom's space is organized?**
- **What intentionality do I place in the support I provide students, in the way we talk, and in the time I allocate to each activity?**
- **Being intentional in your practice is the most complex challenge we leave you with today.**

Conclusion

The teacher is invited to be creative, to be bold, to envision a process that requires interacting with materials, with other people, and with content. While implementing this approach, the teacher acquires a prominent role, a unique role, by using technology at its best and thus, gaining time to reflect, to evaluate, to plan, and to be with their student.

To be with the student is perhaps the most disruptive expression introduced in this white paper. With time, our fast-paced life, endless curricular programs, and exams and tests, teachers enter survival mode and lose some of their most noble and irreplaceable roles – the art of being, of reflecting, and of planning.

> "Finally, artificial intelligence and active learning have given their **noble role in education** and society back to teachers.
> Active learning was missing an ally and this came through technology."



Margarida Silveira Rodrigues

Whitepaper Coordinator, Education Consultant, Psychologist, Pedagogue



How Kinderpedia supports active learning and the transition to a modern classroom

Kinderpedia supports active learning by making it easy for teachers to provide students with a variety of interactive and engaging resources that encourage them to take an active role in their own learning. Also, it keeps parents connected and engaged in students' education. It allows schools to gather and analyse data at different levels, with the purpose of improving learning, as well as the overall teaching practice.



Some of the ways Kinderpedia supports active learning include:

1. BLENDED LEARNING

Blended settings can provide interesting opportunities to support differentiated and personalised learning. The teacher can teach the same content to all students but give differentiated tasks or support individual students, for instance as part of extra-curricular settings or additional meetings between peers or with the teacher.

Technology can help to assess where students are at different stages. The teacher becomes a guide on the side.

2. REAL-TIME FEEDBACK

Kinderpedia allows teachers to provide real-time feedback to students on their assignments, helping to keep students engaged and motivated.

The app supports video and audio feedback, enabling teachers to provide more personal and detailed feedback on student work.

3. PERSONALISED PROGRESS TRACKING

Kinderpedia enables teachers to observe and monitor student's progress, as it happens. The platform allows schools to integrate their curriculum or personalise one from the public library. This way, teachers are better aligned with learning goals. They can share them with students and families and can collect evidence of each child's progress in the classroom. With just a few taps on the screen, they can record any relevant action. **At the end of a specific timeline, all observations are collected into a report and offer a coherent mapping of the student's achievements, as well as struggles, in the given interval.** Reports are designed to be discussed with other teachers, as well as with students and family.

4. INDIVIDUAL LESSON PLANNING

Kinderpedia enables teachers to create customised learning plans for each student, based on their individual needs, interests, and abilities. Each lesson plan maps out new learning opportunities for students, precisely where they struggle or where they show exceptional skills.

This ensures that students are getting the support they need to succeed and promotes a more inclusive and equitable learning environment.



5. INTERACTIVE RESOURCES

On Kinderpedia, teachers may upload and students may find a range of multimedia content and interactive resources, such as standardised tests.

This helps to keep students engaged and interested in their learning and encourages them to take an active role in their own education.

6. COLLABORATIVE LEARNING

Kinderpedia encourages students to work together on projects, helping them build their social skills, problem-solving abilities, and teamwork.

By making it easy to communicate with the teachers, as well as between each other, and share their progress, the app fosters a dynamic classroom environment, facilitates feedback, and speeds progress.

7. DATA AND ANALYTICS

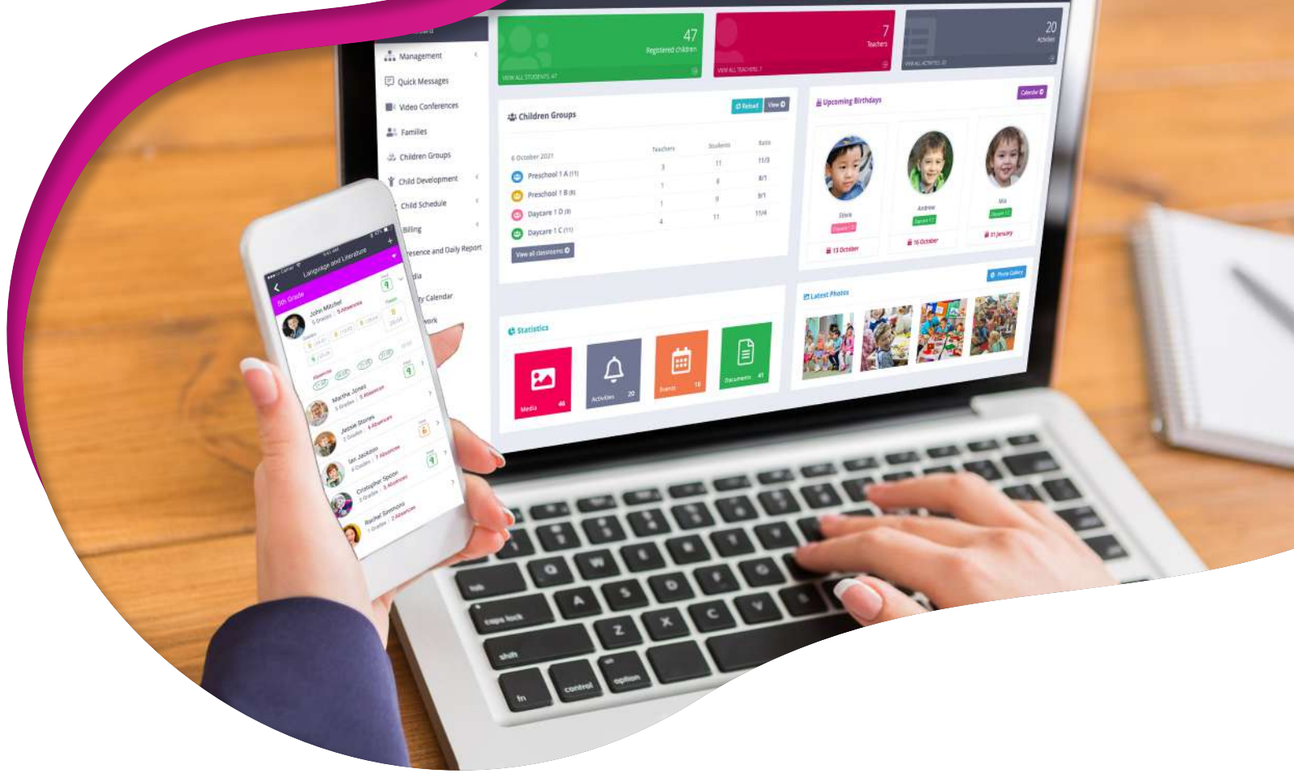
Kinderpedia provides teachers with access to data and analytics on student, classroom, and school-level performance. Customised reporting helps teachers and school leaders identify areas where students may need additional support.

The data generated through observation and student progress tracking can inform data-driven decision making. It also helps educators make informed decisions about program and curriculum design, instructional strategies, and resource allocation.

8. INCREASED PARENT INVOLVEMENT

By providing parents with access to student progress data and information, observation and student progress tracking can increase parent engagement and involvement in their child's education.

Family engagement lies at the foundation of a healthy school community, because it builds trust and it fosters thriving relationships between all stakeholder education. Parental guidance and support impact both academic outcome and the overall wellbeing of students.



9. STUDENT SELF-REFLECTION

Kinderpedia encourages students to engage in self-reflection and take greater control over their own learning. **The app provides students with direct access to their learning goals, resources, assignments, and deadlines, which can help to keep them organised and on track.** Also, it builds a sense of autonomy and responsibility that is essential for success in the classroom and beyond.

By having this information readily available, students can more easily identify their progress and take steps to address any areas where they may be struggling. When students are encouraged to reflect on their own learning and progress, they are more likely to view challenges and setbacks as opportunities for growth and improvement, rather than as indications of failure.

10. IMPROVED TEACHER PRACTICE

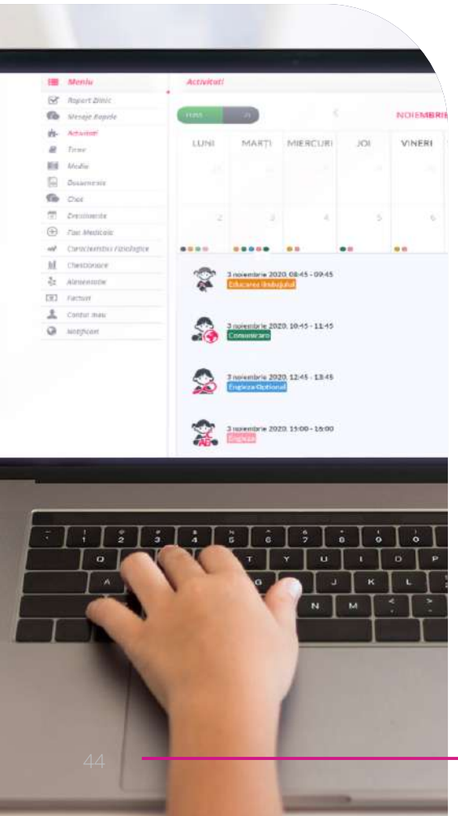
Kinderpedia allows teachers to make evidence-based decisions about how to better support student learning. **By regularly observing and tracking student progress, teachers can identify areas for improvement in their own teaching practices.**

Additionally, the app's built-in assessment and grading tools can streamline the evaluation process and free up more time for teachers to focus on lesson planning and instructional design. By enabling teachers to make data-driven decisions about their teaching practices, Kinderpedia can help to promote continuous improvement and more effective teaching strategies.



"The spectacular rise of AI technologies brings significant disruption for education ecosystems across the world. The industrial era is history. And so is preparing students for compliance in repetitive tasks. All these will be automated and streamlined by machines. However, it is more important than ever to see and to value each individual's unique potential."

Evelina Necula, co-founder of Kinderpedia



"Tomorrow's adults need creativity, collaborative skills, global citizenship, and a responsible attitude towards the environment. Last, but definitely not least, they need digital skills.

The way we use technology in classrooms today will model the way our children will perceive it in the future. And this is precisely why, at Kinderpedia, we are committed to designing and promoting technology which empowers teachers and brings education communities together.

So that our children will use digital tools with ease and confidence to stay connected, to simplify their work and to meet their day-to-day goals." concluded Evelina.

ACTIVE LEARNING AND TECHNOLOGY. PRACTICAL EXAMPLES

We now introduce two real examples of how Kinderpedia supports active learning in the school community, collected from the teachers' and parents' feedback. In these examples, the professionals and parents involved are part of an active learning school.

Their experience illustrates how technology may greatly facilitate the educational process and save valuable time for teachers who want to innovate, share insights, and support students and their families. We chose several examples related to the family-school communication dimension, as well as to school administration.

#Boosting Communication and Engagement in the School Community

António is an Elementary School teacher. His goal is to achieve a closer communication between school and families. He works a lot to make parents feel present in the school's daily routine. For this purpose, he and his pedagogical team rely on several tactics. Parents are invited to visit the school and classroom.

They participate in workshops to get familiar with the pedagogical approach implemented. They even organise weekend events with families. Their school provides pre-established schedules for informal communication during students' arrival and departure. There are also events that parents are invited to participate in and help with.

Throughout time, António's school employed digital solutions such as a weekly newsletter through a digital platform, presentations via a link on a different platform, news feed and quick messages, classroom emails, a reserved area for parents in the school's website etc.

With the pandemic, António's team looked for more efficient solutions where, through a single platform, they could connect better with parents and make communication even more attractive. It was around this time that his team chose Kinderpedia as their digital solution for school management and parent engagement. The mobile app made access to information much easier.

Here are some of the practical examples that illustrate the solution's current impact on communication and parent engagement:

#1

Quick Messages and **Live Chat** functionalities make it easy for small notes or updates to be transmitted to the whole classroom or to specific parents, for instance:

"We have arrived at our field trip destination and the trip went smoothly!"



#2

Teachers' observations and anecdotes throughout the day are easily shared with parents. For instance: "Manuel made a castle in the block area today" **with pictures illustrating and describing the situation,** "and recognised the geometric solids he used and their characteristics."

#3

Parents also refer to the platform to provide information: "Manuel spent the night with a headache" and to comment on classroom and school experiences: "He was excited about the field trip". **These messages are daily and recurring and they boost interaction and engagement in the school community.**

#Making Learning Visible

The classroom has a "mural" on Kinderpedia where teachers and students post pictures, videos and brief descriptions of students' schoolwork. In this active learning school, the process is fundamental. Parents get a clearer idea about their children's experiences and learning development.

Teacher António posts at least once a day and his updates are highly valued by families. Some of the comments teacher António has received are: **"Oh, now I get why she is so interested in learning more about fossils". "Thank you for the information. This weekend we are going to see a themed exhibition close to our home."**



#Simplifying School Administration

Another great advantage of Kinderpedia is the ability **to safely collect and store in one single platform children's full information, such as their date of birth, family contacts, school authorisations etc.** This has allowed António to let go of physical notes and archives and to access information from anywhere, in a safe and secure environment.

Another thing António explored more recently was sharing folders with parents or colleagues. In these folders, António shared information with whoever he wanted, thus creating a safe area to share, for instance, the school's internal regulation.

While sharing information for this paper, António added that he feels his exploration of Kinderpedia is a "work in progress"; he explores as much as he needs and whenever he has more free time. His colleagues do the same and sharing between them has increased the discoveries accomplished.

#Making Parents Part of Their Children's Day and Strengthening School-Family Partnership

We also interviewed a pre-school parent, at António's school, who had recently arrived from Brazil. At his new school, in Portugal, this parent started using Kinderpedia.

The parent told us he uses the app daily to keep up with his daughter's school activity, with just a few taps. He also uses it to talk to his daughter's teacher. He reported several advantages such as better interactions with the school, speedy access to information and sharing, and communication security with "everything on time and thoroughly detailed".

He provided examples: "By knowing what happened during the day, we may continue it at home, and even try to find out more information about certain activities or projects.

We can dive deeper into how our daughter felt and whether she liked them or not."

"We have such busy lives that, sometimes, valuable details get lost along the way. Being able to have this interaction allows us to be closer to our kids and what they live while at school. Their time in school is huge, it's almost like a second life, and Kinderpedia allows us to be part of their daily routine."



We believe the education of tomorrow relies on visionary schools and childcare centres, with inspiring and empowered teachers using innovative technology, relevant, interactive content and real-time communication to shape the minds and hearts of today's digital-native children.

We built Kinderpedia, the complete communication and management solution dedicated to education, with the aim of using technology to transform the way schools work, on one side, by optimising the administrative processes and, on the other, by placing student-teacher-parent collaboration right at the core of the learning act.





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It improves parent engagement in education through a secure and easy-to-use interface.

Helps the staff of schools and kindergartens save 6 to 9 hours a week of their administrative time and to focus their efforts on the teaching act.

It tracks school progress, with a completely configurable observation and evaluation module.

It offers complete class management functionalities: daily schedule, attendance, grade book, homework module, remote video teaching, documents storing and distribution - which make it the optimal solution for schools.

It offers managers a complete perspective on all activities and communication in school or kindergarten.

Built to aid education institutions across the world, Kinderpedia is securely hosted in cloud, on Amazon Web Services, it is multi-language and multi-currency and it works as a native mobile app on Android and iOS for both teachers and families.

More than 2,000 schools and kindergartens are registered on Kinderpedia today, from 25 countries on 5 continents.

The prestigious education franchise Maple Bear Global Schools chose Kinderpedia as the unique operating system in all units in their network.

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