



# Designing & Leading "Aula Inteligente" Today

**Carmen Sánchez Ovcharov**  
Camilo José Cela University

**Daniel Gray Wilson**  
Harvard University

*"A school is not a natural fact, but a cultural one and, therefore, it has been established according to objectives, situations and contexts. If situations, objectives and contexts change over time, the school, as an expression of the signs of the times, must adopt formats and models different from those it has maintained for centuries in order to respond to its commitment to its students and society."*

Segovia & Beltrán (1998, p.32)

Almost three decades ago, Felipe Segovia planted the pedagogical flag for the "Aula Inteligente" (Intelligent Classroom) in the shifting sands of Spanish schools. Since then, the world has undergone significant changes, including accelerated globalization, political polarization, global pandemics, climate change, and the rise of artificial intelligence. These forces continue to profoundly transform societies and, consequently, school life. Given these changes, it is imperative to review and update the fundamental principles of the Aula Inteligente. Segovia and Beltrán themselves suggested that educators and communities should continuously evaluate and critically review their practices and guiding principles. While certain key principles of educational ideals strive to endure—such as Dewey's commitment to democracy and research, Piaget's constructivism, and Malaguzzi's emphasis on children's rights and languages—specific historical-cultural moments inevitably trigger paradigm shifts. Therefore, as

educators, we must critically assess and renew our practices and guiding principles as the world evolve, aligning the learning experiences we design to today's pressing needs (not yesterday's).

This article invites the entire educational community, including students, school and university educators, families, and anyone interested in education, to join us in a review and update of the Aula Inteligente pedagogical model that has guided many schools in Spain and Latin America. We will review its core concepts through the lens of new educational research and provide guidelines for designing and leading innovative learning experiences. Our hope is that Segovia's ideas will continue to resonate with students and communities, enabling educators their schools to remain effective for contemporary societal life.

### The Aula Inteligente revised and updated

Disillusioned with the outdated methods of educating and training individuals for society, Felipe Segovia proposed an alternative model for organizing schools and schooling. This model aimed to break free from the traditional power structures, spaces, and roles that dominated the learning process during the 1960s and 1990s. Drawing from his four decades of teaching and leadership at the San Estanislao de Kostka (SEK) schools in Spain, Segovia articulated an approach that

**As the world changes, it is crucial that educators evaluate and critically review not only their practices, but also their guiding principles.**

contrasted sharply with the rigid and impersonal structures prevalent during that era. Segovia firmly believed that schools should reflect the diversity and rhythms of society, not divide students and dictate schedules with bells.

He envisioned schools as flexible and fluid learning environments, centered around the student's learning experience rather than being centrally organized around teaching and the teacher. Beyond imparting facts and transferring knowledge, Segovia emphasized the importance of schools as places where students can practice wonder, engage in inquiry, and discover knowledge. He believed that schools should foster social connection, autonomy, responsible freedom, and ethical development in students. He was deeply influenced by systems thinking and envisioned open classrooms, student-led research, and porous boundaries between students, educators, and their communities. He believed that schools should be integral to their communities, not separate entities.

At the heart of his vision was the concept of the "aula inteligente": a classroom that functions as a receptive learning community and pedagogically prepared spaces for the experiences that foster learning. Within it, students organized themselves into groups based on their needs, concerns, or intellectual curiosity. To achieve this, Segovia presented a new articulation of pedagogical objectives, processes, and learning contexts in schools, guided by a clear vision that the objective of teaching is the intellectual and ethical development of the person.

*"The Smart Classroom is a learning community whose main objective is the development of the intelligence and values of each of the students, who plan, carry out and regulate their own activities, with the mediation of teachers, who use diversified teaching methods and they propose authentic tasks, evaluated by students and teachers, in a multipurpose and technologically equipped space, in which the culture of quality and permanent improvement is lived ." – Segovia & Beltrán (1998, p.217)*





From early childhood education to higher education, the traditional educational approach assumes that learning is a passive process. Individuals accumulate knowledge disconnected from real life, separated into artificial subjects, and abstract concepts. The sole purpose of this learning is memorization and retention. However, schools can and should do much more than this. As Segovia's ideology for education emphasizes, we must educate

**Today's classrooms where students gather to develop competencies are no longer fixed school spaces but are now assemblages of fluid, community-based places.**

students in and for freedom, fostering responsibility, creativity and curiosity. To be effective for contemporary society, education must draw on and honor the individuality and diversity of each student.

Segovia's vision requires educators and schools to engage in constant adaptation to fulfill its mission. In today's context, two aspects of his thinking invite brief updating: the changing conception of a **classroom** and the evolving notions of **intelligence**.

### **Learning communities as today's 'classrooms'**

Segovia's vision disrupts the traditional notions of places where students (and teachers) nurture their intelligences and values. Classrooms are transformed into learning communities, transcending the confines of traditional school settings. Recent research supports his belief that learning is not simply paying attention to lectures while seated silently in rows of desks. On the contrary, learning emerges through countless social and environmental interactions situated in authentic contexts of practice. Therefore, classrooms can be almost anywhere, such as playgrounds, kitchens, workshops, neighborhood parks, local businesses, and online digital spaces. These spaces facilitate social and environmental interactions that foster the development of knowledge, skills, and values.

Today's classrooms where students gather to develop competencies are no longer fixed school spaces but are now assemblages of fluid, community-based places. Participants in these learning communities include classmates, tutors, informal experts, teachers, and others,

creating a rich and inclusive tapestry of interactions that goes beyond the traditional teacher-student dynamic found in schools. These communities come together locally and globally to develop their knowledge, skills, and values, making classrooms contemporary settings where communities engage in collaborative learning. Many students already participate in such learning communities in their daily lives, whether through clubs, teams, online groups, workplaces, or other settings. These environments can serve as allies to schools, providing resources and inspiration to enhance the overall learning experience.

### **New conceptions of intelligences**

At the end of the twentieth century, Segovia was inspired by various studies that critiqued the classical conceptions of intelligence, which viewed it as a singular ability or a fixed mathematical or linguistic trait of an individual. In the 1980s, Howard Gardner's iconoclastic theories introduced the concept of intelligence as the human ability to solve problems and create products using symbol systems, which are valued in one or more cultural environments. Segovia emphasized the importance of a classroom providing a diverse, adaptable, technologically rich, and culturally relevant context for the flourishing of intelligence and values. Since Segovia expressed these reflections, research by Gardner (1983) and others has solidified this conception of intelligence in the field of social psychology. This research has demonstrated that intelligence manifests in multiple forms, is learnable, and is culturally rooted.

These updated conceptions of the classroom and intelligences subtly refresh Segovia's model and vision, though they imply changes in the underlying structure of what, where and how we learn as well as who assumes the different roles in the pedagogical process.

### **Designing an Aula Inteligente today**

Felipe Segovia established several elements to organize an Aula Inteligente learning community: we must have goals, tasks, methods, sequence, teacher role, student role, evaluation, context and culture, and quality strategies. To aid educators, the co-authors of this paper have grouped these into a simpler structure. We hope it provides coherence by addressing four fundamental questions of pedagogical design: *what, where, how, and who*.



### What – Set Learning Goals

In a learning community, a student's learning processes are more varied than in a traditional formal classroom. In community they engage in richer experiences that develop values, skills and attitudes both formally and informally. That is why we must ask ourselves: what do we want our students to learn during the learning experience we are designing? The answer to this question encompasses four broad types of goals to consider, which may (or may not) be interconnected:

- What concepts, theories, or ideas do we want them to understand? This is the explicit **knowledge** that the learning experiences aim to develop, such as knowledge of history, mathematics, music, or other fields that have meaning in the learners and their local communities.
- What **competencies** or skills will be important for their lives? This question invites educators to consider what students will need to act effectively in the world. Emotional regulation, experimentation or collaboration are fundamental needs in today's world. These skills reflect the contemporary competencies one needs to effectively participate in one's local community within a globally connected world.
- What **attitudes**, mindsets, or dispositions are important to cultivate? Lifelong learners need to develop lifelong learning mindsets, such as open to take risks, be curious, and be open to feedback.
- What **values** or beliefs should they acquire? Segovia was clear that ethical and moral principles must guide our educational experiences. The commitment to justice, empathy, honesty or personal growth are some of the values that must be developed.

Once the learning goals have been established, we must orient our reflection towards the environment or place that can contextualize and give meaning to that learning and, therefore, support the achievement of our goals: the *where*.

## Where – situated learning

The answer to this question we must focus on the dimension that Segovia calls context, breaking the traditional hierarchical structure of the classroom and situating the student at the center of learning processes. Segovia abandons the traditional grouping, which "obeys administrative, not educational, criteria" (1998, p.186) and "has little to do with life", that is, with real situations and experiences that always occur within a community. On the contrary, it presents a conception of the classroom as an open and flexible space, which offers enriching environments, capable of hosting learning experiences related to life. Segovia invites us to situate learning in a meaningful way in our local environments. We can extend our reflection to our communities, asking where in our surroundings can we best support the development and achievement of our pedagogical objectives. The extension of the concept of the classroom broadens the range of answers to the question of where to situate learning experiences. When we design learning experiences with topics and goals in mind, we must ask ourselves where in our community might students best develop deep and lasting learning. Or, independent of goals and topics, we might also consider culturally special or unique places in our community and design experience around them. To aid or designing, we should think about:

- Which areas or spaces offer unique moments for learning? Whether it's a quiet corner in a room or a sunlit atrium, these **spaces** are locations that have objects, materials and other qualities that can support learning.
- Where are there representative or significant places in our community? Maybe it's a memorial to fallen soldiers, our homes, or an open-air theater for local performances. These **places** evoke emotional connections, spark personal bonds, and have cultural significance in our communities.
- What events, activities or processes in our community offer ideal scenarios for learning? Maybe it's an annual festival of artists or the daily routine of local farmers. Such culturally meaningful **contexts** can situate learning culturally and socially, historically and politically.

**The extension of the concept of the classroom broadens the range of answers to the question of where to situate learning experiences.**

- What parts of our landscape or **environment** offer powerful opportunities for learning? Maybe it's a nearby garden, an urban graffiti wall, or a neighborhood square. These environments make up our surroundings, both natural and man-made, in which learning takes place.

Segovia's invitation to us is clear: let us pedagogically break with the traditional location of learning in the four-walled classroom. Situating learning in the best place, space, context, or environment will accelerate the development of real and meaningful knowledge, skills, values and attitudes of our students. The question that arises now is, how can we do this? Undoubtedly, our design must move towards the processes involved in learning experiences: the *how*.

## How – create learning support processes

The Aula Inteligente focuses on students learning, not on teaching. Much of schooling, Segovia notes, is often organized around ensuring that teachers lead students through an already full, and too often overflowing, curriculum. Of course, curricular content is important, and direct instruction has its place. However, impactful education should be organized around supporting the students' learning experiences, which are often emergent and unpredictable. Thus, the role of the teacher is not simply to definitively plan and deliver lectures, worksheets and exams, but to design and facilitate the process of development and achievement of objectives of the learning community.

Support processes include designing motivating and iterative experiences. Students are not passive vessels into which curricular objectives are poured. On the contrary, students actively build their learning by engaging in cycles of actions connected to their interests, the needs of their community, and the lives they will live. This meaningful learning comes over time, through trial and error, community feedback, personal reflection, and review. While some experiences may be highly planned, others may be more exploratory, flexible, and open. Establishing supportive processes invites educators to keep an eye on the entirety of the community's experiences, in the long term, while being aware of the daily opportunities students have to test, share, and engage others in their learning.

Tasks, methods, sequence and evaluation are the elements with which Segovia represents the processes that support student learning in the community and that are focused on developing the goals (what) in the appropriate contexts (where). To understand how to design experiences, we can ask ourselves the following:





- What will students do to develop the objectives? Segovia urges us to create actively engaging and authentic **tasks**: they are the true learning experiences. For example, students could apply math by helping a local bakery with their inventory. Or interview families and develop plans for routes safer cyclists in the neighborhood. These assignments invite students to explore problems and create valuable solutions to real community challenges.
- What strategies will be used? **Methods** are the pedagogical strategies that the learning community uses to achieve its objectives. Project-based learning, role-playing, the discussion of cases or Socratic dialogue. Segovia, breaking with traditional one-way instruction, directs our attention to employing these and other constructivist methods that support action, reflection, and feedback.
- How will the learning experiences connected? Deep, enduring learning develops over time. It does not occur quickly and easily, but rather, through cycles of performances: opportunities that invite students to use and develop flexibly their knowledge, skills and abilities and attitudes. The

**sequences** invite educators to consider all links in the learning chain, including ways to spark curiosity, to create moments for exploration and inquiry, and to help students synthesize their learning into final products.

- How will we and our students know that they are learning? Too much emphasis is placed on judging learning through test scores, which are weak indicators of the lasting learning of knowledge, skills, values and attitudes. Segovia invites us to consider the innumerable **evaluation** of the evidence of learning that students create during conversations, performances, personal journals, and elaborated products. These emerge throughout the process, not just at the end of the experience. Evaluation is not a singular and final event. Rather, as Segovia points out, it is continuous and based on evidence that teachers, students, parents, and other community members use to make claims about learning.

Now knowing the *what*, *how* and *where* of learning experiences, our design of an Aula Inteligente must answer one last question related to agents and their functions: *who*.

## Who – determine key agents and roles

Who participates in community learning experiences may seem obvious: students and teachers. However, Segovia's vision of the learning community is broader. Since it is significantly located in community contexts, the Smart Classroom can (and should) involve other colleagues, students, parents, and other people in the community that have knowledge, skills and values to share. Segovia points out that "in a true learning community, parents can and should collaborate in teaching tasks: giving talks to students, facilitating visits to their workplaces, meeting with teachers to exchange criteria and experiences, attending seminars that improve their knowledge as educators of their children." Segovia (1998, p.103). In short, "The Aula Inteligente [...] it aims to improve all its members: students, teachers and parents. This common goal creates the true educational community." Segovia (1998, p. 104).

The expansion of the number of members, beyond the traditional walls of a school, allows a social system of learning to emerge. It also creates the need to be clear about roles and expectations. To fully activate the relationships in a learning community, we must consider:

- What are the roles of **students**? The Aula Inteligente is based on the conviction that students are the protagonists of their learning. This disrupts traditional roles of students. Instead of following rules and dictated schedules, students assume leadership roles over their aims, approach, and outcomes of their own learning, self-evaluating and sharing their ideas with other members of the community.
- What is the role of the **teacher**? As already mentioned, the teacher is, above all, the one orchestrating the learning experiences. As teachers, we develop goals, ideally with student input and in connection with the needs of our community. We search for and select contexts, environments, spaces and places in which learning can take best emerge. And we design experiences such as those described in the tasks, methods, sequences and evaluation. While our subject matter knowledge is important, we must also take on an important relational role in supporting students and connecting with others in our local environments.
- And what other roles should be considered? As Segovia said, other peers, **parents, or local community members** can play important roles based on learning goals, processes, and locations. For example, older students can participate as tutors or give feedback to younger students. Parents can

and could also learn alongside their children as they explore topics. And community members can be invited to share their knowledge, collaborate and give their opinion.

In essence, an update of Segovia's model in relation to its components, results in the proposal of four new pillars for designing an Aula Inteligente for today's world. As educators we must consider our goals, the knowledge, competencies, attitudes and values we aspire to foster in our students. We must locate the learning in spaces, places, contexts and environments in which these goals are authentically rooted. Students should be actively engaged in tasks, scaffolded by pedagogical strategies, through sequences of iterative performances and continual evaluation. And the community comprises of a diversity of facilitative roles that teachers, students, peers, families and community members can assume. These questions and related elements provide us with a framework to create learning experiences that resonate with the complex, socially connected world of today's and tomorrow's learners.

**This tool provides us with the opportunity and means to shift our pedagogical focus from "teaching" to "designing learning."**

## Conclusions

This tool provides us with the opportunity and means to shift our pedagogical focus from "teaching" to "designing learning." Teaching, often associated with a static and timeless pedagogical mechanism, involves transferring pre-established content and problem-solving skills through strategies like showing, explaining, and telling. We teach students what they need to know and how to do it, often through exercises, examples, or "type" experiments. While this mechanism is effective, what if we aim for broader and more ambitious learning goals that include creation, reflection, criticism, and complex problem-solving? In such cases, designing learning experiences becomes crucial.

Designing involves proposing a specific and concrete structure based on certain parameters and oriented towards specific learning goals. The Aula Inteligente provides the elements while this document offers the necessary updates and questions for its pedagogical design. As Segovia suggests, these steps must be articulated to achieve an efficient and adequate structure, known as an intelligent structure.

So, where do we begin designing goal-oriented learning experiences? Let's consider the future: what knowledge, values, skills, or attitudes would we like to see in our

students at the end of a course, subject, or even a single class session? By designing experiences that accompany their learning process, we can help them achieve these goals.

## References

Segovia Olmo, F. (1997). *The smart classroom: design and evaluation of an innovative educational experience*. Doctoral Thesis, Complutense University of Madrid.

Segovia Olmo, F., & Beltrán Llera, J. (1998). *The smart classroom: New educational horizon*.

Gardner, H. (1993). *Multiple intelligences: The theory in practice*. New York: Basic Books