21st Century Learning: Shifting Mindsets and Shaping Spaces to Transform Learning Experiences

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Abstract

Increasing evidence points to a relationship between physical space and pedagogical design in increasing student engagement and performance [1]. As our school transitions pedagogical practices (e.g. increasing student-driven, problem-based learning) concurrent to the design of a new facility, we face real challenges where individual teacher instructional preferences converge with design demands meant to enhance the learning experience. We have been working with teachers to modify instructional practices that reflect the direction of the school. At the same time, we have been facilitating conversations with students, parents, and other stakeholders on the overall design of the building as well as the design of individual learning spaces (i.e., classrooms). Thus, began a journey in which it needed to be determined what existing practices reflected the ideals and what practices remained aspirational, about which we still needed to be mindful. Specifically, we needed to overcome the challenge of the teachers waiting for the new building to change practices and determine how to change practices in our currently occupied space. This journey has included bottom-up intervention strategies to engage students, parents and teachers together in professional learning capacities with the intent of expanding opportunities to become active participants in shaping their learning spaces. This session/paper explores the ongoing tension between existing and aspirational practices and expectations, and designing spaces to meet both. Moreover, we will try to understand how space can shape practices and how practices can shape spaces.

Keywords: *Flexible learning environments; professional learning communities; Design thinking; student and parent engagement.*

Introduction

It is widely accepted that public schools were designed and compartmentalized to provide a common set of courses and learning experiences. Similarly, school facilities were built to enable efficient use of space in which a uniform number of students can meet across many different rooms. Still, growing demands to revisit existing models of education and the places where formal instruction occurs have arisen as changes in technologies, industrial globalisation, social turmoil, and political fluctuations converge.

In reimagined learning experiences, teachers/mentors work alongside students to introduce relevant problem-solving tasks that are culturally diverse, technologically complex, and establish a strong foundation of learning agility and adaptability. Transdisciplinary expectations mean students are able to work across people and technologies, apply divergent and agile thinking, and are adaptable to people, problems, and technologies. Moreover, evidence points to a relationship between physical space and pedagogical design in increasing student engagement and performance. "With technology in tow, creative learning spaces help to expand students' minds to imagination and freedom of expression" [2]. Thought leaders in the fields of teaching, research, design and leadership have understood that current school designs impede learning experiences and need to be changed to reflect the values underlying 21st century skills.

New and renovated school designs focus on creating open spaces that are flexible and transparent, supporting collaborative, personalized and diverse learning experiences. While merely changing the design of learning spaces can impact the dynamics in it, research and experience suggest that to implement successful change in learning experiences, the physical changes to learning spaces need to happen in parallel to the changes in mindsets among the different stakeholders involved. This paper explores a single case of a one school (grades 7-12) as it encounters changes in the educational landscape, explores current practices and expectations of a community of learners and teachers, and plans for the development of a new facility.

Reconceptualising the learning experience

Next generation education recognizes that learners evolve to reflect the realities of the times in which they live. Globalisation and technological advances are often acknowledged as two large drivers in this evolution. Evidence suggests that successful learning experiences take shape when the learners' have more control and take more responsibility throughout the process. Thus, trying to create or maintain a one-size-fits-all experience inhibits progress towards students-centered learning. Yet, teachers remain responsible for organizing the learning processes within the boundaries of schools and are held accountable for students' achievements. So, a key step along the path of progression is that teachers understand and adopt new forms of teaching and learning.

Considerations for new space

Schools as places of learning have followed the same general design principles ever since leaving the one-room school-house. The design borrows heavily from the industrialization models used to build toward efficiencies and economies of scale. Classroom space is allocated by government regulations of how much space an individual learner needs. This configuration is further restricted by placement of doors, windows, closets, and plumbing. Even the placement of new technology might shape practices in the classroom (e.g., where a projector is hung shapes how teachers arrange students). In the end, many classrooms continue to have a similar look and feel. While chalkboards of old have been replaced by dry erase boards and/or smart boards, these are still the central focal point of the modern classroom. Yet, there are many promising design practices shaping future school design to better support the 21st century learning principles. These schools typically include more flexible spaces, more social spaces, more productive spaces, more open and outdoor spaces, and more natural light. Most importantly it requires that the space (like the instruction of the future) be flexible, adaptable, and portable. These adaptive spaces can support personalized learning, group instruction, and project-based initiatives.

Addressing practices

The incremental changes that are essential for transforming learning have more to do with changing the mindsets of all stakeholders than with any physical change of space or the theoretical principles published in the journals and presented at conferences. According to the Mckinsey report [3], "The quality of an education system cannot exceed the quality of its teachers," which in our context means that the education system cannot advance beyond the boundaries of where a teacher is willing to take it. It is therefore evident that the teacher should be central to the process of change implementation in the learning experience. The objective of collaborative processes is to ensure that the teachers are active participants in shaping the future of practices and physical spaces that reflect the values and principles of the community. Still, humans are creatures of habit, who dislike change immensely. Gallimore and Santagata [4] point out there is gap between intent of a change and operationalizing that change, which is often lost when the agents of change (teachers) are too far from the planning and deep understanding. While educators may understand and agree that instruction needs to evolve, the process for this change is often overlooked and teachers are expected to intuitively adapt to changing expectations of their students, parents, and leadership. Teachers' professional development experiences need to reflect society's changing expectations for learning experiences and 21st century skills in spite of and because of static educational standards. The cultural stagnation, however, is not limited to teachers. Parents and students and members of the community are similarly entrenched in their thinking of what makes good schools.

Case study

Founded in 2002 in Israel, the grade 7-12 School has grown over to over 300 students, 25 teachers, and 15 support staff. At its inception, the school was already considered progressive by Israel standards and pursued pedagogical and organizational innovation attracting high performing staff. As the school grows, physical limitations prevent it from accepting the numbers of students wanting to enroll. Beneath this backdrop, a process began of planning for new facilities, connecting the school values to a vision for change. In partnership with the design firm Fielding Nair, constituents explored design possibilities for a new school that would reflect innovative learning. This process began with the engagement of students, parents, and staff in a series of brainstorming sessions. During this initial reflection, we identified a need to change practices in advance of designing facilities that would support those changes. As a result of these meetings we were able to move forward with the following goals:

- Introduction to the pedagogical rationale behind the new school design plans;

- Transparency across many different constituents with a view into different modalities of learning that these new spaces enable;
- Establishment of a pedagogy team charged with exploring innovative pedagogy that will lay the foundation for the design plans;

With the help of Fielding Nair, Pathfinder Spaces were implemented as part of action research in which we modeled learning experiences in the existing, but modified, learning environment. [5]

Developing a professional development program

With the spaces modified, teachers still lacked clarity regarding their use. Thus, we embarked on an in-house and staff led training program which concentrated on 1) establishing PLCs and trusting relationships, 2) creating a shared language based on our school values and vision, and 3) focusing on the implementation of one principle (Authentic Learning) and creating opportunities for experimenting, risk-taking, and learning from best practice. [6]

Shifting mindsets - pilot

Although opened to all staff, only a handful stepped up to the challenge and began experimenting with different learning modalities. Most staff did their best to recreate a closed classroom experience in terms of use of space and teaching methodology when experimenting in new spaces. These teachers would complain regularly about the inconvenience of the change, with regards to noise and classroom management. It would be common to hear a teacher state the following after being allocated one of the renovated spaces: "Oh, I got this space, there goes my lesson…"

In the first year, the "pathfinders" who had self-selected were not managed or monitored, and were not working together or in any capacity with pedagogical support staff. In the second year, informal collaboration between the pathfinders increased, and they became more adept at using these spaces. The students were also getting accustomed to the space and developing their own preferred learning styles.

Challenges and Lessons Learned

As expected in any change, our process could be described as messy and accompanied by many challenges, uncertainty and resistance. Our main challenge has been encouraging all teachers to change their practice and experiment with new learning modalities, especially in the high school, in light of the pressure to prepare students for the standardized state exams. In order to encourage staff buy-in and risk taking in the pilot programs, our process remained informal and lacked a management and monitoring system. As a result, the teachers who did experiment with new learning modalities were not supported or connected, therefore there was little collaboration and evaluation.

As part of our own continuous improvement and growth, we made the following changes to our process:

- We decided that our staff development program should focus on one principle rather than all of our eight pedagogical principles. This helped us create concrete objectives and plan projects based on one principle: *Authentic Learning*.
- We decided that instead of trying to lure the entire staff towards a change in pedagogical practice, we would work more intensively with a select few who expressed interest - *our Pathfinders*.
- We learned not to be afraid of putting management and monitoring systems in place; to trust that the learning that will come of evaluation, feedback and shared practice will prove more valuable and supportive than lack of intervention.
- We put plans in place to increase student and parental involvement in the change and design thinking process

Conclusions

In the end, it is important to strike the balance between design and pedagogy – the message clearly being that open, transparent, and flexible design enables the use of multiple pedagogical methods to suit different learners, educators and learning goals. Courage is needed not only to embrace the uncertainty, trust the process and jump in the deep end; it is also needed for putting systems in place to monitor and evaluate the progress of the change process. Our journey began with a group of committed individuals (parents, teachers, and school administrators) who embraced a strong belief in the need for educational change. They began with clear purpose of reshaping learning experiences and designing new instructional spaces to ensure that students are prepared for the growing

complexity of the world. While we were uncertain about what the process would entail, our school community moved forward undeterred by fear of failure. We continue to learn from these experiences as a community and make the course corrections as we move forward. As we reflect on our work to date, we will examine how mindsets, behaviors, and practices are shifting to include a broader range of learning experiences and the impact that these changes are having on students. We move forward remembering that "success is not final, failure is not fatal: it is our courage to continue to grow that counts" _Churchill.

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