Re-Imaging Learning Environments
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ADAPTED LEARNING ENVIRONMENT IN FUTURE EDUCATION

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In 20 years from now, today's children will meet a world where working environment will certainly be different. The learning environment, pedagogy and technology that will have to prepare them to that world are still unknown. The necessary knowledge, skills and abilities are starting to be clear to educators that will have to form future citizens and skilled manpower.

However, into the 21st century, most schools are still using traditional and outdated teaching methods where the teacher is the main source of knowledge and learning is based on memorization of facts. Most learning environments remind old factories or classrooms taken from Charles Dickens stories.

On the other hand, modern working places are equipped with the latest technology. The work is based on cooperation, collaboration and teamwork. The highly competitive working environments create high level of uncertainty and demand adaptive thinking skills and creativity.

This reality creates a wide gap between the level of educational system graduates and the level of employees that are demanded in today's economy. In other words, most education systems provide incomplete products to the working places, requiring them to invest time and money to improve their training to adapt their skills and abilities.

The 21st century provides information that is available and can be found and learned anytime and anywhere, while skills and abilities cannot be learned only in a classroom. Therefore the role and purpose of schools, learning spaces and teachers has to be changed. The situation as described undoubtedly creates a huge but built in (not to say predictable) gap between the education system and the expectations from the workers within the actual economy and the competitive expectations of the global labour market.

These and other insights led the college think tank to suggest a multi-step model that can be applied not only in innovative learning environments, but also in classical ones and within different and diverse disciplines.

The first pedagogical model was introduced at the end of the 2012 school-year, and was given the name *P2PBE* – Problem to Project Based Education. This eight-step model combines well-known and familiar learning and working processes. The model includes movement on two main axes: the horizontal axis where the student moves from self-work to teamwork and the vertical axis where the student is requested to move within the framework of his learning from

individual outcomes to shared outcomes. This model re-defines the role of the teacher and adapts it to the reality of the 21st century.

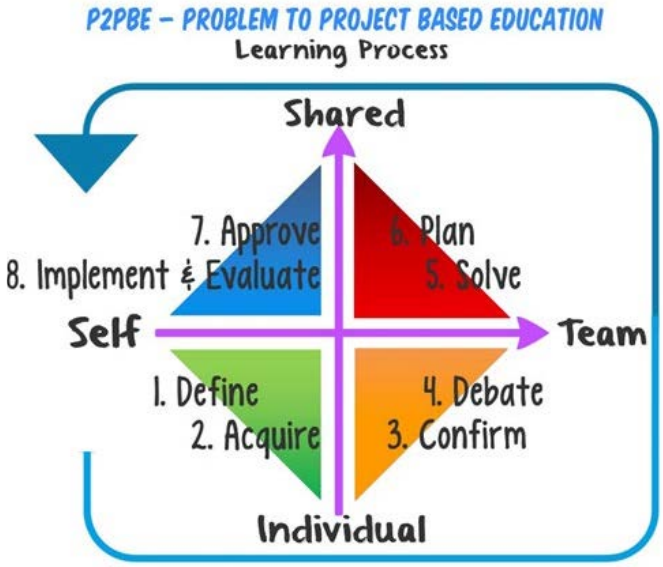

Figure 1. Model of P2BE – Problem to Project Based Education

The described model caused the pedagogical thinking team to examine the classroom space appropriate for the model. The immediate and obvious conclusion is that the classic classroom must change its designation and become a dedicated and dynamic learning space adapted for the different stages of the model. In order to be effective, any learning cannot exist in isolated space and therefore additional spaces are required that allow mobility between the stages of the model.

Adapted Learning Spaces

The implementation of the described dynamic learning model requires a redesign of the learning spaces, which were planned and processed together with Steelcase Education (Grand-Rapids, Michigan, USA). The new spaces provide our teachers the tools to motivate their students through dynamic and engaging learning experience.

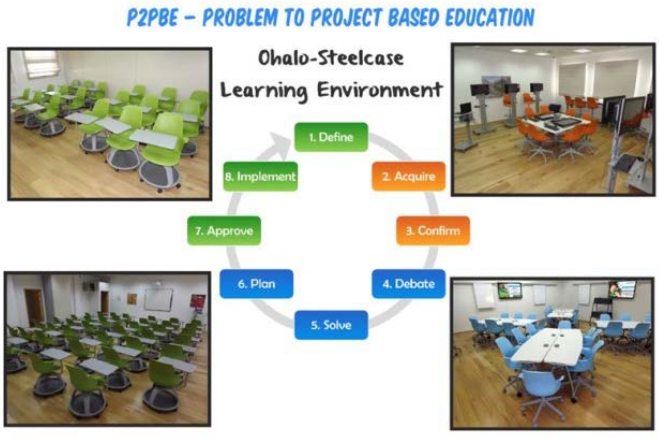

Figure 2.

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At the end of 2014, we developed with Steelcase Education a unique learning space, which was given the working title *the future compound*. In this 350 square-meters complex that includes in a single large space a number of learning spaces, the pedagogical model P2PBE is implemented with all its stages and extensions for ongoing and continuous learning. The complex is virtually divided into areas with varying functionality, where instructors can decide in advance the nature of the activities that they wish to hold in parallel or by cooperation.

Figure 3.

1. Frontal area (1) – for defining the problem, preliminary discussion and presentation of the project.
2. Technological area (2) – for acquiring knowledge in immediate or continuous manner.
3. Discussion area (3) – for rhetoric and discussions, as well as for offering solutions and project planning.
4. Guiding and directing area (4) – for approval and qualification with guidance in small and heterogeneous groups.
5. Imparting areas (5) – for teams whom the instructor is interested to provide enrichment.
6. Quiet region (6) – for a short-term and timed recess for instructors or students, for conducting short meetings or personal conversations with the students.

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The space operates in two main scenarios:

- The same course for several groups – In this mode the instructors divide the work between them when each instructor is responsible for a different aspect of learning; technological expertise, leading discussions, leading and training small groups, imparting etc.
- Various overlapping courses – In this mode the instructors coordinate between them which parts of the lesson or the course are conducted together and which separately, as the outcomes of learning can be common to the students from different grades or disciplines.

Figure 4.

Summary of Findings

Published in 2016, our study (Nissim, Weissblueth, Scott-Webber, & Amar, 2016) investigated the effect of our newly developed innovative technology-supported learning environment on pre-service teachers' motivation and 21st century skills.

Over eighty percent of students and lecturers reported more than a moderate increase in creativity, motivation, ability to get higher grades, and engagement in class while studying in the new learning environment. Students gave statistically significant higher evaluations for practices and solutions in the new classrooms than in traditional classrooms. Significant findings were found in the way students perceived working adequately, or better than adequately, on many of the 21st century skills in the new environment as opposed to the old one.

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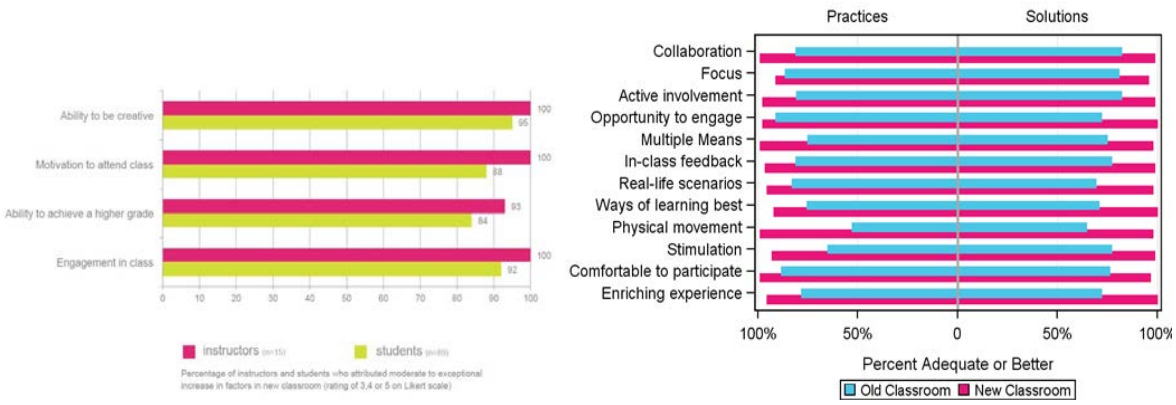

Figure 5.

Conclusion

The 21st century necessitates the design of a special learning environment that facilitates the acquisition of the skills that the education system would like to develop among its learners as part of their preparation for "real life" in a dynamic, rapidly changing environment full of uncertainty. Throughout the world, educators, educational scholars, philosophers, opinion-makers and laymen have tried to come up with suitable pedagogic solutions for the modern era. Questions such as: how to increase motivation and encourage commitment to learning have occupied the best of minds. We believe the present research to illuminate potential solutions that are supported by empirical research relating to a large proportion of the core issues of innovative education, and that indicate possible directions for the future. Moreover, the significant processes highlighted here are extremely important for the training of future teachers in a changing world. The present research sheds light on the role of learning environments in the preparing and training of future teachers in a changing world. It suggests that student teachers can be better prepared for their future educational tasks when their learning environment fits more to the characteristics of the technologically changing world.

What about sciences? We will know soon…

In the Fall of 2016 we will open the new Biophilic Learning Environment for teacher cadets specializing in science education. This space includes different aspects of nature, such as fish ponds, trees, a greenhouse, an area to grow insects and reptiles, and a stream which runs through it. All this happens inside an ecological, transparent building, which has temperature and humidity control systems. Learners are able to experience the different natural processes in real time and during long periods, instead of just reading about them from a book, or listening to a 60 minute presentation. Technology is applied to measure and monitor natural processes and relationships, and students are able to follow the changes that occur during the four seasons, to measure processes and compare them with those of previous years.

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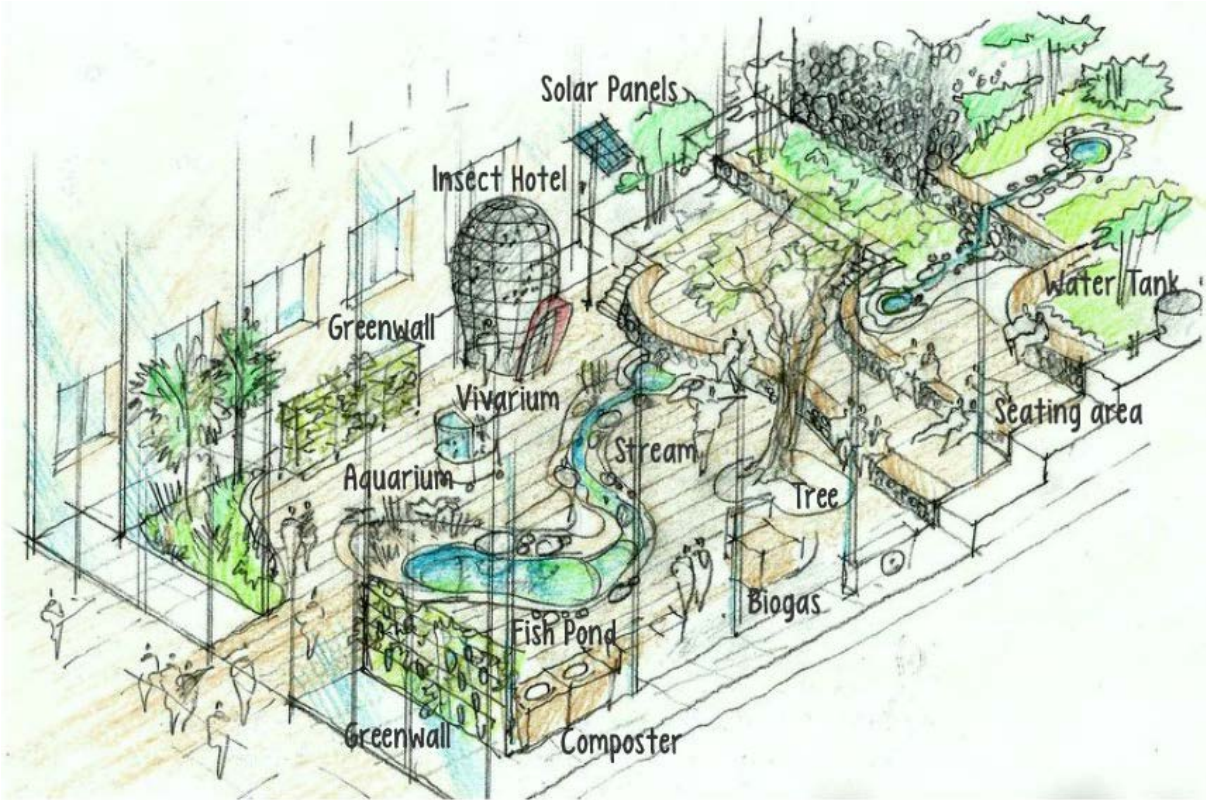

Figure 7.

References

1. Nissim, Y., Weissblueth, E., Scott-Webber, L., & Amar, S. (2016). The Effect of a Stimulating Learning Environment on Pre-Service Teachers' Motivation and 21st Century Skills. *Journal of Education and Learning, 5*(3), 29-39. Retrieved from http://www.ccsenet.org/journal/index.php/jel/article/viewFile/58002/31703

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