

Book Review

Stratosphere: Integrating Technology, Pedagogy, and Change Knowledge

Michael Fullan

Toronto, Pearson, 2013

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In his book *Stratosphere: Integrating Technology, Pedagogy, and Change Knowledge*, Michael Fullan suggests a framework for approaching education in the 21st century. *Stratosphere* exists at the intersection of three elements: technology, pedagogy, and change knowledge. In the text, Fullan provides a detailed description of the *Stratosphere's* complex nature and interconnected components. *Stratosphere* is Fullan's response to the static state of schooling and the disconnect between educational practices and the ever-changing needs of society. Fullan expresses discouragement with today's educational system. He writes that current educational reforms have fallen short of making progress and that they focus on the wrong part of learning. Educational reforms are concentrated on standards and assessment and neglect to teach students how to learn or to foster love for learning. This leads to diminished enthusiasm and engagement. In early childhood, students are naturally excited and interested in learning but by the time they reach high school, this drive is almost gone. Fullan contends that both students and teachers are bored, and instructional practices are limited by the larger structure of schools. This is the impetus for *Stratosphere*, which focuses on creating highly engaging, technologically driven, and learner-centered environments.

In contrast to current educational trends that stress testing and content, *Stratosphere* is driven by pedagogy. The pedagogical approach in *Stratosphere* emphasizes student engagement, strong teacher-student relationships, and teaching that is tied to constructivist theory. Students determine their own passions, address real-life problems, work collaboratively to find solutions, and push through challenges with the aid of constructive feedback. This pedagogy is closely tied to learner-centered instruction (Weimer, 2013). Learner-centered instruction deliberately includes students in the process of creating their knowledge and empowers the students with control over their learning. It embraces creativity and encourages the development of a classroom community through collaborative learning experiences. Fullan writes that "the magic of *Stratosphere* is that students and teachers are conjointly stimulated to engage in the pursuit of deeper learning: it is fueled by their passions and purposes. Both students and their teachers are turned on" (p. 22, emphasis in original). In *Stratosphere*, teachers and students search for knowledge together. The teacher is no longer the distributor of information but a facilitator of learning. In this setting, curriculum shifts away from focusing on set answers and tasks involving lower levels of cognitive demands. Instead, learning becomes an intricate journey or a "complicated conversation" (Reeder, 2005, p. 248) with teachers and

students. This allows for students to think creatively and ask critical questions instead of being limited by the concepts of right or wrong.

Technology also plays a key role in *Stratosphere* and the learner-centered environment. Technology can support the shifting away from the traditional hierarchical relationship between teacher and student. Due to the availability of large amounts of information from the Internet and other sources, the teacher is no longer fully responsible for distributing knowledge to the class. Instead, the teacher's role becomes guiding students as they shift through resources and assisting them in navigating the vast amount of information. *Stratosphere* is also about using technology to give students a voice and a platform for expressing their ideas. It is becoming increasingly simple for students to share their ideas through websites or blogs and create digital stories and to connect with other students and professionals working in a field related to the students' studies. Through the use of technology, students are able to share their work and projects with a real audience. This can contribute to the development of student voice and a sense of empowerment.

While Fullan strongly advocates for the integration of technology into classrooms, he also recognizes some of the complexities and drawbacks of using technology. *Stratosphere* involves "opening our eyes to both the dark side of technology and to its virtually unlimited enlightenment side" (p. 7). This critical perspective is one of the strengths of the book. Drawing on the work of Morozov (2011), Fullan contends that technology is far from being a neutral tool and that there are negative aspects of using technology in education. Feenberg (2002) suggests that modern technology is not neutral and therefore embodies a particular set of values:

Modern technology as we know it is no more neutral than medieval cathedrals or the Great Wall of China: it embodies the values of a particular industrial civilization and especially those of elites that rest their claims to hegemony on technical mastery. (p. v)

Fullan argues that it is sometimes wrongly assumed that the nature of technology is liberatory because of its ability to connect people with information from a variety of perspectives. Although it does have liberatory properties, technology is not designed to favour oppressed or struggling populations. In contrast, it is often designed for capitalistic endeavours, and it is more commonly used by consumers for entertainment purposes than for pursuit of liberatory knowledge.

After recognizing the problems with technology, Fullan still suggests that educators fully embrace technology and deliberately use it to create radically new learning environments. Pedagogy informs the use of technology, and technology is to be integrated into curriculum in a meaningful way. The focus remains on the purpose of using technology and not on a technical or how-to approach to using the tool.

The third element of *Stratosphere* is change knowledge. Change knowledge is about the implementation of a theoretical frame. It involves putting ideas into place for the purpose of making positive changes. There are eight aspects to change knowledge: focus, innovation, empathy, capacity building, contagion, transparency, elimination of non-essentials, and leadership. These aspects are woven together for educators to move in the direction of creating engaging learning environments that foster higher order and complex thinking. Change knowledge involves teachers becoming change agents committed to educating with a learner-centered pedagogy. This element requires teachers to be flexible, reflective, and responsive in their teaching and curriculum. *Stratosphere* is inherently in a constant state of change because

it is based on the students and the context of the learning. These factors are never the same, which makes *Stratosphere* fairly elusive and difficult to grasp. In order to understand it, educators must fully embrace the unknown.

Student motivation is a prominent theme throughout the text. Fullan contends that students are disengaged in learning because they are bored. The idea of boredom is used several times in the text, and Fullan argues that technology will engage students because it is not as boring as other modes of instruction. *Stratosphere* is one remedy for this boredom, as it provides students with opportunities to participate in meaningful learning in a stimulating and technologically rich environment. However, the term “boredom” fits with a traditional frame of teaching and learning and becomes irrelevant in the content of a learner-centered environment such as *Stratosphere*. With boredom, the locus of control remains with the teacher, and it is the teacher’s responsibility to entertain the students. The students will be bored if the teacher does not provide interesting instruction. In a learner-centered environment, the locus of control is with the students, and a learner-centered curriculum allows students to engage with their learning, express their ideas, and experience voice. While students can still experience boredom from time to time, they are in control of their experience. Instead of questioning whether the students are bored, a learner-centered environment invites educators to question whether the students are given the opportunity to engage in their learning and with the content.

The book falls short of embracing the concept of social justice in education. Ideas related to social justice such as democracy, global change, and student empowerment are peppered throughout the text, but the author never fully commits to this purpose. The goal of *Stratosphere* is to create schools that foster a love of learning and allow students to construct their own knowledge. These concepts have strong implications for society and existing structures of power, as students are empowered and encouraged to think critically. Without fully articulating the impact of *Stratosphere* on democratic participation and student voice, the driving force of the text is weakened. The text also neglects to interrogate the underlying assumptions that inform current school practices and contribute to the narrow curriculum that currently exists in education. In order to develop a new and radically different approach, it is important to recognize the driving forces behind the current system, as changing the system requires disrupting these ideas.

Despite the shortcomings of the book, this text provides readers with valuable themes to explore and discuss in relationship to educational change. The text is recommended for educators and teacher-educators who are interested in moving away from traditional modes of teaching and learning. It is also of interest to those who want to advance their classroom instruction by integrating technology and shifting into learner-centered pedagogy.

References

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