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Please enjoy this complimentary excerpt from *The School in the Cloud* by Sugata Mitra. This foreword from education researcher John Hattie discusses how, with Sugata Mitra's model of schooling in the cloud, we can use the technologies that are now available to conceive of a totally different type of schooling.

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FOREWORD

ut a dot on a piece of paper, make some simple rules, and from this you have a whole new education model that truly makes the difference to children in any situation. If you think it's not possible, then you need to open your mind before you read this book. Rather than re-create what we know about schooling to adapt to the Indian slums and indeed to all schooling, we need to think again, starting with a simple idea—a dot—and working forward from it. This remarkable journey of a dot to an innovation about the School in the Cloud could apply anywhere in the world, for rich and poor, but it needs an open mind and a sense of wonder.

In the Western world, there is a grammar of schooling (Tyack & Cuban, 1995; Tyack & Tobin, 1994): one teacher talking and talking; 20-30+ students, clustered by age; self-contained classrooms; textbooks; testing; and grades. There is also a grammar of learning with facts, knowledge, and surface ideas being privileged and lots of doing and hoping thence for learning, a focus on interesting and engaging activities to keep students busy—and rarely is there teaching of alternative strategies such that if students do not learn they can have backup strategies. As Jenkins (2008) shows, while 97 percent or more of 5-year-olds want to come to school to learn, this drops to 30-40 percent at the end of elementary school, and slightly rises in high school—meaning about five to seven high school students per class come to school wanting to learn. Despite this, Western schools have performed well on national and international tests (which favor "knowing lots"), and there is much evidence that many teachers develop deeper learning, foster curiosity, and make classes inviting places for students to want to come and learn (Hattie, 2009). This model is expensive not only in dollars but also in the development of the needed expertise of teachers and school leaders to run these schools. So what chance do students have in countries without these resources and this long history of providing school systems? Can we wait until we build these schools before we improve the achievements of these students?

Along comes Sugata Mitra who asks not how to replicate the successes (or otherwise) of the Western world but how we can use the technologies that are now available to conceive of a totally different type of schooling. He started with an idea, moved to a "Hole in the Wall," and now to the School in the Cloud. He had a vision for what this hole and cloud would achieve: It was not "let's hope and see what happens"—it was a deliberate move to teach both the facts and knowledge needed to then problem solve, create, and relate ideas. There was no mission to make students "know lots"; they were to know enough to then relate, extend, discover, and create. This balance was so important to the vision.

Recently, we synthesized many learning strategies trying to ascertain which were most effective, when, and why (Hattie & Donoghue, 2016). We found that some strategies worked effectively toward certain ends: they enabled people either to learn the bits of knowledge but not the relations between those bits knowledge—or vice versa. This balance of surface and deep knowing is core—and we noted that so many (almost all) teaching methods were either effective for surface or for deep learning. An exception was the "jigsaw method" whereby a teacher introduces a main topic and several subtopics. Students are broken into home groups, and each member of the home group is assigned a subtopic. Then, students form expert groups to study their assigned subtopic through research and discussion. After the students have mastered the subtopic in question, they return to their home group to report on their findings. At the conclusion of the exercise, each home group member has learned about each subtopic from a member of the relevant expert group or through her or his own investigation with an expert group. Often the "jigsaw" concludes with a unifying activity or task. The power comes from balancing the surface and deep learning, ensuring students have the knowledge before asking them to use this knowledge, and making every student responsible, a learner and a key part in the learning of the whole group.

How different is this from providing students with access to the internet (to gain the surface knowledge) and then asking them to engage in tasks that use this knowledge? (Many Western teachers who overemphasize knowing lots might flinch to hear they would be replaced by the internet in this scenario!) The internet teaches students language and questioning and search methods, and it demands that they learn to distinguish between opinions, indoctrination, and propaganda. At the same time, it offers students access over these computers to "English Grannies" who read them stories (not teaching, just stories); the students hear the English, enjoy the stories, and become engaged in conversations with the Grannies. With these skills, children are more than ready to move from knowledge, to topics, to problems. To be curious, to explore, to see relations between ideas, to want to know more—this is what we want for all our students.

The "Visible Learning" messages resonate throughout this book, starting with getting the right balance between the surface and the deep aspects of knowing. The students are asked to evaluate their learning continually, to develop high expectations about what they can learn, and to focus on what they are going to learn and not what they are going to do, to use the Goldilocks principles of challenge—not too hard, not too boring (note the excellent six levels of cognitive complexity in Chapter 2). They are encouraged to welcome errors and misconceptions as opportunities to learn and to maximize opportunities to seek and receive feedback about where to venture next in their learning. These strategies all maximize the chance of learning, put the power of learning into the students' hands, and, most of all, epitomize the aim to "make students see themselves as their own teachers."

There is no shying away from evidence about the effectiveness of this model—and a major theme is asking how we should measure students' learning and depth of understanding. Where should we go next? How can we draw out learning to create new, stimulating, open, and engaging questions for subsequent sessions? And how can we prevent boredom and engage in appropriately challenging learning?

While many of the messages seem to relate to India and places with fewer resources, there are many examples of the School in the Cloud working everywhere. But it will require a transfer of power and centrality—teachers will have to learn to talk less, to accept the internet as a primary resource ("on the internet you know before you learn"), to evaluate learning in terms of both knowing lots *and* understanding deeply, to give up much of the current crowded curriculum, to get used to moving bodies in the school and not fixed classrooms, and to appreciate the vast reservoir of untapped excitement and potential that every student can use if not constrained to straight rows, bells, teacher talk, and too much doing.

Recall the story of the learned professor who went to a School in the Cloud and during the sessions was amazed and impressed—but, at the end of the day, proclaimed, "Now I need to go back to my office to see if this will work in theory." Yes, there is a lot to do, but this book screams success, breaks artificial ceilings of low expectations, and shows that what works brilliantly for poor students can also work for rich students (so often what works in rich nations may not work in poor nations).

Sugata is a person with a dangerous idea—and it just might work. He powerfully joins the dots. Enjoy the thrill of being on the edge with him, because at the edge of chaos anything might happen.

—John Hattie Graduate School of Education University of Melbourne, Australia