

SPRINGER BRIEFS IN EDUCATION

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# Education Skills for 21st Century Teachers

Voices From a  
Global Online  
Educators' Forum



Springer

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## *Welcome to our Chrestomathy<sup>1</sup>*

*We are like flower gatherers and butterfly collectors, curating and cataloguing our delicate collection, always looking for new species and new trends. The butterfly has an uncertain future. It does not know about its future job as a chrysalis. Nevertheless it builds up its strength for that unknown role. As long as butterflies learn to adapt to change, the species will survive.*



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<sup>1</sup>A collection of choice literary passages, used especially as an aid in learning a subject.

Ian G. Kennedy · Gloria Latham · Hélia Jacinto

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Voices From a Global Online  
Educators' Forum



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# Foreword

As a long serving (32 years) practicing secondary school science teacher, a question about what the 21st century teacher needed to know and be able to do fascinated me. In my professional position, I hear many complaints about the “students of today” and it worries me. Is it the students, is it the system, is it us, or a combination? In the responses to this question, I was hoping for some answers.

This seemingly a straightforward question on ResearchGate raised several side issues and started me speculating along a number of different avenues. From a sociological perspective, how is the complex task of teaching done under different social conditions across the world? Philosophically, are teachers really supposed to be the “bandaids for the ills of society”? And the key frame of the question is, what should we be doing to effectively prepare students for a future we have not yet experienced and have difficulty imagining?

The question also clearly speaks to the issue of professional renewal. Teachers always have been good learners. Perhaps to prepare for the 21st century, we need to be the best of learners, ready to adopt and adapt as needs arise. As the authors themselves admit, to help teachers in the complex process of personal renewal “was our vision for compiling this monograph”. This theme of professional responsibility appeared throughout the thread, recognising that teachers work with their students in classrooms around the world, doing their absolute best to ensure that each and every student is successful and ready for whatever the future may hold.

At a base level, one could ask, “Does the 21st century teacher need to have different skills from a teacher at any other time?” Superficially, the answer is obviously yes. At the very least, information technology is advancing at such a pace that teachers need to be skilled to at least a level where they can converse meaningfully with the “digital natives” that they are beginning to encounter. What became apparent though, was that many of those who responded restated those characteristics that we know have been important to teaching at any time in the past, while others hinted at a desire to rethink old paradigms in the hope of creating a new order. Karl Popper would be pleased with the possibility of paradigm

shifts inferred in many posts, as demonstrated by one of the authors, who, while developing a social network site with her students recognised a need to reconsider the meaning of communication skills.

It has been said that the future is unknowable, and this is the key to understanding many of the responses to the question. Considering the apparently increasing pace of change as technologies shrink the world, the future is becoming even less predictable. An awareness of this problem was evident in the number of responses describing those characteristics that could be termed metacognitive or learning how to learn. This raised the issue of an appropriate model for teaching. Many posts recommend that teachers become a “guide on the side” rather than a “sage on the stage”, now that Google is the preferred source of all information for modern students. The advent of MOOCs as a preferred distribution strategy for higher education makes the sage on the stage a difficult model to sustain anyway.

Educational research is tied into such long-term outcomes that by the time hypotheses are meaningfully tested, society has moved on and the conclusion may or may not remain valid. Consequently, research in educational arenas is doomed to chase its own tail. The authors of this monograph recognised an opportunity to tap into a different, readily accessible source of data, a type of collective wisdom at a moment in time to see whether it could shed light on an issue of importance. There were 386 contributors to this forum<sup>2</sup> by September 2014. Some were experts in the field, some at the very least, experts in thinking, but all have had access to a great store of research evidence: the students themselves. Such student behaviours are valuable indicators of the effects of their societies and the educational systems in which they developed. By drawing together the thoughtful opinions of the contributors, the authors build a valuable springboard for future research. Surely, this process of attempting to gather meaningful data from responses to a question on a specialised social media site is novel, with the potential to inform education researchers meaningfully.

As a mere poster, who dipped in and out at random intervals, the thread gave the appearance of an interminable soap opera, where the narrative took seemingly random twists and turns, and yet the authors have successfully abstracted a set of thematic ideas that should provide fascinating reading for the intending and continuing teacher, the researcher into teaching and education, and the educational futurist.

2014

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<sup>2</sup>Available at [https://www.researchgate.net/post/Which\\_skills\\_must\\_21st\\_century\\_teachers\\_have\\_to\\_promote\\_high\\_quality\\_learning](https://www.researchgate.net/post/Which_skills_must_21st_century_teachers_have_to_promote_high_quality_learning).

# Preface

Unlike most professions, teaching comes packaged with a blueprint, or an embedded chip that tells us how to “do school” no matter what the sector or context. As we have all been students, we have learned how teachers are “expected to” teach. Much time, energy and money goes into replicating the past through teacher training, induction and professional development. This means that teaching and education generally are the hardest to change in society. Yet Fullan (1993) and many other theorists believe that change is a journey not a blueprint. And it is this journey of needed change that this monograph reports on. Our findings are from ResearchGate, an online forum where educators and researchers frame and answer questions and globally connect with each other. Our question was to identify the skills that 21st century teachers must have to ensure that high-quality learning takes place. This topic thread was created by one of the three authors (Hélia Jacinto) with well over a thousand responses posted from participants in 26 countries from a wide variety of disciplines, sectors and contexts. The Appendix summarises them.

To try to capture the essence of their posts, this monograph exposes the ways that the research data were gathered and analysed, the themes that arose from the discussion thread and a direction forward for current and in-service teachers/researchers.

ResearchGate is a networking site for scientists and researchers to ask and respond to questions, learn more about teaching, find research collaborators and to share research results. Every day of the week, around the clock, ResearchGate posters reply speedily to even the most specialised and arcane questions. Some of the posters are novices, just entering the field of teaching, while others are experienced teachers and researchers. A critical review of their posts yields a collective wisdom seldom heard from the teachers on the ground.

This monograph project came about because a couple of ResearchGate posters recommended that a summary be made of what had been discussed. We put up our hands, because we also wanted to better understand the ideas being expressed. Our hope is that teachers and researchers can learn from these posts and produce



high-quality learning for the 21st century. We generated a list of 23 categories of skills that are arranged alphabetically by first letter in an acrostic table to help the reader internalise our classification.

As intimated above, the following question is the focus of our attention. In the next paragraph appears the full question as posted on ResearchGate.

*The industrial revolution is long gone, as well as teaching to follow a certain routine, procedure or task. Today's world is changing by the minute, and we "all" have access to such changes almost immediately. So teachers, today, have to prepare students for a world that is totally unknown, for jobs that do not exist yet, and hopefully, those future men/women will be able to create those innovative jobs. Are teachers, in your countries, being prepared for these responsibilities and challenges? How?*

## Reference

Fullan, M. (1993). *Change forces: Probing the depths of educational reform*. London: RoutledgeFalmer.

# Acknowledgments

We would like to thank ResearchGate and all the posters for their posts, and Mark Gould (one of the posters) for the Foreword. Thanks go also to the referees of this monograph.

The small delicate butterfly shown in the frontispiece and illuminations was photographed by the author (Ian Kennedy) in the Kuranda Butterfly Farm in Australia, March 2003. It hints at the small, delicate steps required to implement our vision for transformational change.

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