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## Reframing Teacher Education for Learning Equity

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### ABSTRACT

The current models of teacher education in the Western world are still largely based upon the building of students' knowledge and skills using approaches similar to those designed for the assembly lines of the past. The prevailing model of schooling is still centered around the notion that schools are places young people go to watch their teacher work. In the advent of the innovation age, teacher education requires reinvention around the emerging knowledge base about learning and the key role teachers play in addressing issues of equity and student success in this rapidly changing and complex world.

A panel of eminent international scholars, from a range of fields, formulated evidence-based frameworks to guide future teacher education models globally. The frameworks focus on "learning equity." In addition, the team launched a cloud-based Learning Equity Research and Resource Center, hosting some of the planet's best scholarly and applied research on learning sciences and equity-based practices. The team's research agenda is grounded in learning theory, cognitive science, technology, social justice, and an equity mission to provide learning environments and quality teachers that enable the potential of all children.

The Global Learning Equity Network (GLEN) challenges the preparation of a new kind of teacher for a new kind of school, one built on a learning center rather than a testing center model. GLEN's research, resources, and frameworks are designed to assist new teachers to enable all children to discover their passion(s), grow their talents, and be inspired to lead healthy, happy, and productive lives.

The Global Learning Equity Network has been established by the School of Education at the University of Newcastle (Australia) to reinvent teacher education around the emerging knowledge bases about learning and the profound role teachers play in addressing issues of equity and student success in a rapidly changing world. Most current models of teacher education in the Western world have served well to build a highly skilled workforce that has driven the rise of the middle class through the Industrial Age. With the advent of the Innovation Age, new internationally based and research-grounded models of teacher education are needed to prepare teachers to guide all their learners to be successful students, passionate citizens, and locally based global leaders. Unless we revamp teacher education, teacher preparation, and schooling as we know it, opportunity gaps created by the automation of trade and service-sector jobs will continue to displace workers, exaggerate income gaps, and create a wide schism of "haves" and "have-nots" in our society. The increase in people underprepared for the global economy and the Innovation Age leaves huge pressures on the education sector, particularly classroom teachers, to bring an equity-based, highly proficient approach to teaching all children.

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A panel of eminent international scholars from a range of fields such as creativity, neuroscience, child development, psychology, equity, indigenous education, and culturally responsive education, along with representatives from international teacher accreditation bodies, have been convened by the School of Education to formulate a set of evidence-based frameworks to guide future teacher education globally for learning, equity, and the common good. These frameworks are guided by an equity mission to provide learning to leaders who inspire and enable the potential of all children. We have developed learning education frameworks that are being used to backward-map the design of our current models of teacher education and to launch an international research team to study the changes made to teacher education in the short and long term.

And, we have launched a cloud-based Learning Equity Research and Resource Center to host the best scholarly and applied research on learning, teaching, equity, and social justice (<http://www.newcastle.edu.au/glen>).

## Background

He must, if he is an educator, be able to judge what attitudes are actually conducive to continued growth and what are detrimental. He must, in addition, have that sympathetic understanding of individuals as individuals which gives him an idea of what is actually going on in the minds of those who are learning. (Dewey, 1938, p. 39).

Why don't many students consistently use effective techniques? One possibility is that students are not instructed which techniques are effective or how to use them effectively during formal schooling. Part of the problem may be that teachers themselves are not told about the efficacy of various learning techniques. (Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013, p. 46)

The need to improve the educational system has never been greater. People . . . argue for expensive technological applications to improve education despite a lack of empirical evidence for their efficacy . . . Cognitive and educational psychologists have identified strategies that greatly improve learning and retention of information, and yet these techniques are not generally applied in education nor taught in education schools. In fact, teachers often use instructional practices known to be wrong. (Roediger & Pyc, 2012, p. 242)

Current models of teacher education in the Western world have done an effective job of preparing candidates with the knowledge, skills, and dispositions needed to be successful as early career educators. The rise of educational attainment as measured by standardized tests, as well as the improved productivity, health, and overall graduation and literacy rates of society in general over the past 30 years are impressive. However, we face a different future and a dynamic global economy very different than when the current teacher preparation models were evolved in the Industrial Age. Achievement gaps between wealthy and poor students are increasing, just at the time the economy cannot afford to pay for the ills of poverty and the lack of educational attainment that stagnates human capacity and innovation. And the moral costs of an undereducated population are staggering. In spite of increased educational standards and a state and federal emphasis on equity agendas, too many people from low-income backgrounds and from underrepresented populations around the world are still marginalized. It is time to reinvent teacher education around emerging knowledge about learning and a recognition of the profound role of teachers in addressing issues of equity and student success for a rapidly changing world.

The philosophical framework and research base for the prevailing models of teacher education in the United States, Europe, Canada, and Australia are typically organized around teacher behaviors rather than promoting a dynamic understanding of what constitutes student learning and the simultaneous priority on equity. The current model of teacher education served us well until the advent of the Innovation Age, but it has underserved those who learn differently or who have a special need. The Global Learning Equity Network will facilitate the evolution of international frameworks to guide teacher education forward to *learning education*, built upon a research agenda grounded in learning theory, cognitive science, technology, social justice, and an equity mission, providing learning environments and quality teachers that enable the potential of all children.

Many factors contribute to a student's academic performance, including individual characteristics and family and neighborhood experiences. But research[ers] suggest that, among school-related factors, teachers matter most . . . a teacher is estimated to have two to three times the impact of any other school factor, including services, facilities, and even leadership. (Rand, 2012)

We know that the most important school-related variable in the academic success of a student is the quality of the teacher. Thus, the primary mission of schools of education must be the preparation of teachers to be the learning facilitators who are passionate about and skilled in the priority of equity. Current models of teacher education are still primarily focused on preparing young people for a narrowly tested set of skills that have been displaced by innovation and a global economy that has exaggerated equity issues across the planet.

The advances in research on cognition, memory, and learning have not been adopted by most mainstream teacher education programs, with a divide emerging between prestige institutions with dynamic adaptive models and those lacking the resources to innovate and integrate research gains into their teacher preparation programs. Ansari, Coch, and De Smedt (2011) contend:

. . . without concerted thinking about how to build bridges and maintain them, the very idea that cognitive neuroscience and education can interact to improve education will become just another educational fad, a footnote in the history of the movement towards research-based education. 2011, (p. 38)

In attempting to bridge the gap between learning and educational practice, Roediger (2013) has advocated for the development of a “translational education science to rival medical science” in which “research about learning and memory, thinking and reasoning, and related topics . . . are introduced into broad educational practice” (p. 1). Harvard Graduate School of Education's postgraduate Mind, Brain and Education program integrates the study of learning through education and neuroscience, while Dartmouth has transformed its undergraduate teacher preparation around these ideas. Stanford University is a global leader in brain-focused interdisciplinary approaches in their Neurosciences Institute. A network of interdisciplinary international scholars and leaders communicating current and future innovation in learning-centered, equity-focused, and brain-based research and practice would allow the current pioneers of *learning education* to contribute to a total rethink about teacher education.

## Frameworks

Education is about enhancing learning, and neuroscience is about understanding the mental processes involved in learning. This common ground suggests a future in which educational practice can be transformed by science, just as medical practice was transformed by science about a century ago. (The Royal Society, 2011)

The conceptual framework for this project is focused on embedding the best research on learning equity from the emerging knowledge base in psychology, neuroscience, cognitive science, technology, equity, and education. The positioning of learning and equity is deliberate. Most teacher education programs in the world have two major emphases: learning to teach young people (pedagogy, curriculum, etc.) and understanding the historical, social, political, and economic contexts in which educators find themselves in schools. Although these two parts make sense, most education students report that the most important learning they take from their programs is the practical experience they gain in internships. The theory is not well integrated into the practical components of teaching. The vital role of equity as the conduit to fairness in society is often diffused. Meanwhile, the gaps in society grow larger between those who are well educated and those who are undereducated. Thus, equity or fairness is intertwined with the opportunities to provide rich learning spaces for children. The frameworks themselves are based on a synthesis of the major domains in the field. They will serve as a guide for teacher education programs around the world to recalibrate their current models in light of new evidence around:

### **Where do children live?**

- Family
- Community
- Society

- Culture(s)
- Global citizens

### **How and when do children learn?**

- Learning theory
- Indigenous perspectives
- Developmental psychology
- Neuroscience
- Ability
- Health and wellness
- Formal and informal environments

### **What should children know and be able to do as a result of schooling?**

- Content/Curriculum/Syllabus
  - Indigenous knowledge
  - Other knowledge
  - Skills
  - Processes/Applications
  - Inquiry/Critical thinking
  - Dispositions
- Instruction/Pedagogy
- Assessment as learning
- Tools and technologies
- Intercultural awareness
- Health and wellness

### **Why is equity so vital for the common good?**

- Empowerment
- Decision-making
- Social justice
- Societal cohesion/Civic engagement
- Work and leisure
- Living standards
- Schools as reflections of society
- Local impact and global influence

### **Who am I as a learning and equity leader?**

- Affirming diversity
- Modeling equity
- Facilitating inquiry and creativity
- Leading for learning
- Inspiring hope
- Practicing lifelong learning
- Possessing self-awareness
- Displaying caring
- Promoting collaboration
- Exhibiting resilience
- Maintaining health and wellness

Teacher education, and any attempts at educational reform, should be grounded in the premise that understanding the ways in which students learn, what motivates them to learn, and how teachers can best enhance this learning is the core business of schools everywhere. In this way, all children will have an equal opportunity to receive quality education from a generation of teachers who are driven by student learning in a dynamic evolving sense, and not strictly by test scores. This implies a new kind of teacher for the new kinds of schools that are evolving everywhere and that are built on the needs of learners. Our goal as educators is to provide environments where all children can discover their passion(s), grow their talents, and build their abilities to lead great lives. We are on the verge of a fundamental shift in

the paradigm that governs schooling, teaching, and learning to teach. In the past, we have asked young people to comply to a set curriculum based on a set syllabus that has very few variations embedded based on who you are as a learner. The transformation in the learning sciences and instructional technologies now allows us to vary our approaches to accommodate every child's unique needs in the order and ways that work for them as individuals. Every child deserves the education that is right for him or her. That is learning equity.

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