

Retirement Speech
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Creative Intelligence and the Medical Artist

By Dr. Leila Lax

In Biomedical Communications we cultivate a special type of intelligence, *creative intelligence*. As a professional Master of Science program in a distinguished university we teach knowledge, skills, attitudes and values – but we *cultivate creative intelligence*.

For decades we have known about IQ and more recently Daniel Goleman¹ has told us about EQ. My favourite cognitive psychologists, Marlene Scardamalia and Carl Bereiter², have made us aware of the importance of working with ideas in design-mode, not just with knowledge in belief-mode. Nigel Cross³ shed light on design thinking, Roger Martin⁴ applied design thinking to business, and Donald Schon⁵ highlighted the necessity of reflection on design to elevate professional practice. Howard Gardner⁶ talked about multiple intelligences and David Perkins⁷ wrote about “outsmarting IQ”. Recently Blooms Taxonomy⁸ was revised and now “Create” is at the top of the pyramid of educational objectives. Robert Sternberg⁹ said there are 3 types of intelligence: practical, analytical and creative. As David Perkins points out, IQ tests and their higher education standardized equivalents, the GMAT, LSAT, MCAT, and SATs, report one’s intelligent quotient based on literary and analytical scores. But there are no tests for *creative intelligence*. As medical artists, we can easily talk about *creative intelligence* – what lies beyond IQ and being just plain smart.

As medical artists, we are right brain/left brain balanced - creative and analytical. Throughout my career I loved learning new things – gaining new knowledge about the world, particularly in medicine, science, and new technologies. But it is the creative, continually changing, and evolving process that enable me to enjoy a 37 year career, as an Assistant Professor, a teacher and a researcher, in Biomedical Communications.

I began as a fine art artist winning my share of awards, became a medical artist (specializing in medical legal visualization), did an MEd in Health Professions Education at Ontario Institute for Studies in Education and fell in love with educational research, completed a PhD in Higher Education with a minor in Computer Applications and became a “design researcher”.

Now I have to tell you, for me it was a very natural evolution from fine art artist, to medical artist, to educational researcher, to design researcher. These were completely fluid transitions, expanding my competencies and contributions. “How to work creatively with ideas”² was advocated by my mentor, Dr. Marlene Scardamalia – which allowed me to look at the creation of artifacts as the physical representation of the ideas. Working creatively with ideas was something I understood viscerally. This became my mantra and enabled me to collaborate on large research projects focusing on educational design, creative direction of media, and evaluation.

My evolution as an academic in medical art seemed straightforward to me but I noticed, that it was somewhat confusing to others. Many of us in this field are familiar with this confusion condition.

I remember applying to the Art as Applied to Medicine Program and people said “A medical artist - You are going to be a what?” Then the graduate program was created and named “Biomedical Communications”. This new title expanded our definition but confused people even more - “You’re a Biomedical Communicator – so you do what?” I chose to add to the mix “educational researcher” and then to add chaos to the confusion, to become, a Biomedical Communications “design researcher”. My friends and family gave up – so did some of my colleagues.

The bottom line is precisely that - we defy singular definition. In this field, we are continually redefining ourselves driven by creative intelligence and desire to work with new ideas and create novel artifacts. We continue to evolve as a community and a profession, propelled by new technologies and an ever-expanding body of scientific, medical, and multidisciplinary knowledge, transforming information through our lens of visualization (the mind’s eye) that is often leveraged in our co-design processes. We clearly do not fit in any one silo and aptly defy singular definition. We intentionally break boundaries and strive for uniqueness that inherently defines creative intelligence and successfulness.

That is the beauty of our profession. It cannot be contained or narrowly defined. It lives between knowledge silos, in the spaces between and across, above and beyond, and attempts to create bridges to improve thinking and deeper understanding. Our profession is not just interdisciplinary – about art and medicine – it is inherently multidisciplinary, multidimensional, and requires multiple intelligences. It is precisely this latitude and longitude that scaffolds creative flow and continuous evolution, that has allowed me to feel great joy throughout my career. Nothing was ever repetitious. My heart, my mind and my soul were always enriched through my engagement in a process of life-long-learning, interwoven in teaching, supervision of student research, and my co-design research teams.

With every medical legal visualization class we worked to improve ideas and artifacts, to enhance visual representation of complex ideas of traumatic injuries and stories of surgical situations to clarify information and effect better judgements. With every research endeavour we focussed on visual knowledge building and ways to use media to improve knowledge translation to practice.

I am enormously grateful to be able live life this way, in a community that enculturates creative intelligence, as a way of being.

I want to add a few words of special thanks to some special people:

First and foremost – the BMC students (some of whom are BMC Faculty today). Across the years I can confidently say that you are the best students a professor could hope for. Teaching and supervising research is a reciprocal gift. I am so grateful to have had this opportunity. I ran my medical legal visualization class like an innovation lab – continually challenging you to improve on previous ideas.¹⁰ My colleagues, Prof. Meaghan Brierley and Prof. Michael Corrin,

contributed enormously to technical aspects and collaboratively, students and Faculty, together, elevated ideas.^{10,11} I am proud to say that many of our innovations have become standards in practice, like the “visualization slider”.¹⁰ In 2006 the students and I (this was Michael’s year) did a presentation at the Association of Medical Illustrators annual conference called “From the Classroom to the Courtroom”.¹²

My parting words to our BMC students are two-fold: (1) Continue to advocate for scholarly recognition of our field, do design research, talk about your work, reflect and write about it. You deserve recognition not just for your talent but for your knowledge and creative intelligence. (2) Take the lead! The motto of Art as Applied to Medicine used to be “art in service of science and medicine” (creating illustrations to support text explanations). In the world today biomedical visualization, multimedia storytelling, and visual explanations are the primary agents for communicating complex ideas to enhance understanding. So I say our new motto should be: “Lead a team, co-design, and create biomedical educational media with explanatory visualizations that enrich minds.”

Margot, you hold a special place in my heart– you were my surgical illustration professor and have always been my mentor. **Linda, Nick and Jodie**, you provided me with the continued privilege of teaching in BMC and Linda you inspired me to pursue an MEd and PhD. **Derek**, I greatly appreciate your contributions to the creation of the Online Psychiatric Education Network¹³ for Women’s College Hospital (Dr. Valerie Taylor) that provided BMC students with MRP opportunities. **BMC Faculty** thank you for your sponsorship and support of the Neuberger Holocaust Education Week 2019 Pernkopf Symposium^{14,15} that I was honoured to co-ordinate. **Margot, Linda, Nick, Jodie, Marc, Michael, Derek, Dave, Shelley, Brian, and Maeve** you are all brilliant and shine in your own unique ways. I can confidently say that your vision and creative intelligence distinguish our program. I consider myself fortunate to have had such exceptional colleagues.

Over the years, much of my design research work was with interdisciplinary teams throughout the Health Sciences at UofT. These were all large projects with good budgets that offered tremendous potential for creativity and co-design. The scale of these projects is only dwarfed by the magnitude of respect, gratitude and adoration I have for all my research colleagues. It has been truly joyful to work together:

- Dr. Marlene Scardamalia, Dr. Carl Bereiter, Susana La Rosa and the IKIT Team, at the Institute for Knowledge Innovation and Technology at OISE. I am hugely grateful to Marlene, my doctoral supervisor who changed my thinking forever as a knowledge builder and validated my intuition for working in design-mode.¹⁶ It has been a tremendous honour to be mentored by you and learn from you and Carl. It is through you that I was inspired to create the Visual Knowledge Building & Translation Lab in BMC.¹⁷ I look forward to continuing to work with you and IKIT.
- Judy Watt-Watson, Michael McGillion, and University of Toronto Centre for the Study of Pain Colleagues, we were an amazing design research team and created so many successful programs including the Interprofessional Pain Education Curriculum^{18,19} and the Pain Interprofessional Education Resource.²⁰ I had the privilege of working with a fantastic team of web designers Meaghan Brierley, Michelle Lui, Tabby Lulham Rose and programmers Jeff Rose, Ju Ho Park, and

Brian Sutherland, as well as, Cameron MacLennan, Diana Tabak, and Kerry Knickle from the Standardized Patient Program.

- Dr. Lynn Russell in association with the Medical Council of Canada, LJ Nelles and Cathy Smith from the Standardized Patient Program, Meaghan Brierley and Ju Ho Park, who at the time worked with the Discovery Commons at Faculty of Medicine – it was an honour and a pleasure to co-design the Communication and Cultural Competence Program for International Medical Graduates²¹ with you.
- Last but certainly not least, Dr. Anita Singh has been an exceptional co-design partner; together we created the End-of-Life Care Distance Education^{22,23} Program for family physicians. Larry Librach, from the Temmy Latner Centre was our visionary; we started working together in 2003, designed and ran the first program online in 2004. My doctoral thesis was based on the 5-year evaluation of this program. Various iterations over the last 16 years were created by Meaghan Brierley, Ju Ho Park, Jenn Tse, and most recently by Tabby Lulham Rose and Jeff Rose. I adored working with you all; you are outrageously talented, creative, and beyond smart. Along the way, Anita has become a treasured friend. We thought we would close the program after 10 years, in 2014, but the Ontario Ministry of Health thought otherwise. Last year, after substantive revisions, and certification by the College of Family Physicians, we reopened this course with the help of our competent program manager, Nancy Bush, in CPD office of the Faculty of Medicine at UofT, as the Palliative Care eLearning Program.²⁴ Anita and I currently work with two dedicated Palliative Care physicians from the Temmy Latner Centre, Dr. Paolo Mazzotta and Dr. Jamie Meuser and others in the past. I look forward to many more successful and delightful years working together, as the design researcher and coordinator of this outstanding program.

Most importantly, I want to thank my beautiful family. I am so fortunate to have three amazing children who are now young adults and accomplished professionals in their own right, Ryan, Ilyse who is married to Jonah, and Isaac. I especially want to thank the love of my life, my husband, Gary, who has understood my endless energy, my desire to continually create, and allowed me to pursue my dreams.

I am 5 feet tall but my wing-span is very wide. I like a big canvas and my conceptual frame is broad and inclusive, as evidenced by my definition of what is a medical artist or biomedical communicator. *Creative intelligence* and processes of design thinking, artifact creation, and co-design work need space and time. Progressive emergence of ideas and artifacts, critique, reflection, and iterative evolution are essential parts of these processes, that are aimed at scaffolding creativity and innovation. As medical artists, I know that *this* is easy for you to understand and I know that you know exactly what I am talking about. Not everyone does.

My parting words to all of you are: **As medical artists, your *creative intelligence* is palpable and immeasurable. Your *creative intelligence* goes far beyond your IQ. Be confident in your knowledge and dedicated to continual improvement of your creativity.** I hope you enjoy your creative journey, as I continue to do. I look forward to following all of you and our profession in your creative evolution and celebrate your accomplishments.

To all BMC Faculty, Students and my Colleagues, thank you for the joyous, creative life I have lived as a Faculty member at UofT. No matter what title I wear, I will always be first and foremost a medical artist – and a celebrator of *creative intelligence*.

I entered UofT as an undergraduate student in 1976 when I was 19 years old and Art as Applied to Medicine in 1980. For 44 years, 4 degrees, and an extremely rewarding career as an Assistant Professor and part-time faculty member, UofT has been my home away from home. I love it here; it would not be possible for me to leave – only to retire! I will carry years of memories of each and every one of you and all our shared experiences in my heart forever!

Thank you BMC! Leila

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