An interview with Howard Gardner: John H. and Elisabeth A. Hobbs research professor of cognition and education at the Harvard Graduate School of Education

Maria Luisa Marilù Chiofalo [1,2*] iD, Claudia Giudici [3] iD, Howard Gardner [4] iD

[1] Department of Physics "Enrico Fermi", Pisa, University of Pisa, ITALY
[2] INFN–Pisa Section, Pisa, ITALY
[3] Reggio Children, Centro Internazionale Loris Malaguzzi, Reggio Emilia, ITALY
[4] Harvard Graduate School of Education, Cambridge, MA, USA

Abstract

The present interview was realized for the occasion of the panel on "Educating to Scientific Thinking" at the sixth Edition of the General States of Digital School in Bergamo (Italy, 2021). The interview focuses on six topics reflecting on scientific thinking, the forms of creativity and the many intelligences that it hinges on. Introduced by observations on the educational system, each question is asked in the light of the ideas developed in "A Synthesizing Mind", as well as in "Frames of Mind", "The Good Project", and "Five Minds for Future". From the conversation, a consistent picture emerges, which is in fact continuously evolving while artificial intelligence and quantum technologies pervade our everyday lives, and fundamental research questions about the human mind gain the center of the stage.

Keywords: higher education, curriculum and pedagogy, science education, developmental psychology, neuropsychology, aesthetics, ethics, social sciences

INTRODUCTION

The present interview was conceived and realized for the occasion of the panel on Educating to Scientific Thinking, which took place during the sixth Edition of the General States of Digital School, held in Bergamo (Italy) in late November 2021.

Scientific thinking is a powerful two-ways connector between abstraction and reality. Via creativity, experimentation, and symbolic (mathematical) literacies, scientific thinking educates us to the art of constantly solving every time new problems for ourselves and for others, with a critical spirit and the ability to spot and manage errors. Thus, educating citizens of all ages and socio-cultural contexts to scientific thinking would in fact be a revolution for our lives, for the development of smart individuals and communities, and of smart governance.

Inspired by the more recent published book "A Synthesizing Mind", the interview sails out of the harbor of educating to scientific thinking in the digital era, to explore selected observations on the educational system from kindergarten to college, with special attention on the Italian context, and on how communities are smart or not. The reflections on how a synthesizing mind may develop from childhood and evolve over a lifetime, are exploited as a compass for the journey on scientific thinking, also sourcing from "Frames of Mind", "The Good Project", and "Five Minds for Future".

The interview focuses on six topics, each introduced by observations on the educational system. These observations lead to one or more questions, asked in the light of "A Synthesizing Mind", and followed by the answer.

PROFESSOR GARDNER'S VITA

Howard Gardner is Elisabeth A. Hobbs Research Professor of Cognition and Education at the Harvard Graduate School of Education (**Figure 1**). He is also an adjunct professor of psychology at Harvard University and senior director of Harvard Project Zero (Howard Gardner official website https://www.howardgardner.

Figure 1. Howard Gardner (Source: Harvard Graduate School of Education)

com/). Among numerous honors, Gardner received a MacArthur Prize Fellowship and a Fellowship from the John S. Guggenheim Memorial Foundation in 1981 and 2000, respectively. In 2020, he received the Distinguished Contributions to Research in Education Award, the premier honor from the American Educational Research Association. In 1990, he was the first American to receive the University of Louisville's Grawemeyer Award in Education. In recognition of his contributions to both academic theory and public policy, he has received honorary degrees from thirty-one colleges and universities, including institutions in Bulgaria, Canada, Chile, Greece, Ireland, Israel, Italy, South Korea, and Spain. He has twice been selected by Foreign Policy and Prospect magazines as one of 100 most influential public intellectuals in the world. In 2011, Gardner received the Prince of Asturias Award for Social Sciences, and in 2015, he was chosen as the recipient of the Brock International Prize in Education. He has been elected a member of the American Academy of Arts and Sciences, the American Philosophical Society, the National Academy of Education, and the London-based Royal Society for the Encouragement of Arts, Manufactures, and Commerce. He serves on a number of boards, including New York's Museum of Modern Art and the American Philosophical Society.

The author of thirty books translated into thirty-two languages, and several hundred articles, Gardner is best known in educational circles for his theory of multiple intelligences, a critique of the notion that there exists but a single human intelligence that can be assessed by standard psychometric instruments (please see https://www.multipleintelligencesoasis.org/). Since the middle 1990s, Gardner has directed The Good Project, a group of initiatives, founded in collaboration with psychologists Mihaly Csikszentmihalyi and William Damon, that promotes excellence, engagement, and ethics in education, preparing students to become good workers and good citizens who contribute to the overall well-being of society. Through research-based concepts, frameworks, and resources, the Project seeks to help students reflect upon the ethical dilemmas that arise in everyday life and give them the tools to make thoughtful decisions.

His most recent research undertaking, conducted with Wendy Fischman, is a large-scale national study documenting how different groups think about the goals of college and the value of a course of study emphasizing liberal arts and sciences. The study seeks to understand how the chief constituencies on campuses (incoming students, graduating students, faculty, senior administrators, parents, alumni/ae, trustees, and job recruiters) think about these changes and how they may impact the college experience in our time. Ultimately, the study aims to provide valuable suggestions of how best to provide quality, non-professional higher education in the 21st century. In early 2022, MIT Press will publish their book The Real World of College. He is also directing an international study of United World Colleges, a network of secondary schools. In 2020, Gardner's intellectual memoir, A Synthesizing Mind was published by MIT Press.

THE CONVERSATION

MC and CG:

We see over the course of centuries, on a long and large scale, that culture has been artificially split into humanistic and scientific. At the same time, the education in kindergartens, which is centered on a person's intelligences, and therefore his/her uniqueness, progressively gives way in higher grades, and up to college, to instruction centered on and split into disciplines. Often, we end up preparing citizens with highly specialized technical skills based on an evanescent culture.

In "A Synthesizing Mind", which we would like to define as the creative synthesis of a lifetime devoted to creative synthesis, you explain that multiple intelligences (MI) are like a chart which the synthesizing mind can use as sources, in an *a priori* and unpredictable manner (as in the case of

Howard Gardner himself, who took his sources from music and nature, rather than linguistic, logic, and the interpersonal) creating syntheses of existing or new ideas, in any of the many different possible forms (e.g., small- or large-scale synthesis): with an eye to the Good Project, one could also add in ethical and respectful ways.

How can this inspirational viewpoint concretely "change the conversation" (using your very effective expression) on the above point?

Howard:

Yes, I have sought in my own work to respect the disciplines but to strive to make connections, rather than to create barriers or walls between them.

Anyone who enters into public conversation hopes to "change the conversation". But of course, it usually does not work. At its best, a perspective changes the way that the conversation proceeds in the future, and in a desired direction. But of course, sometimes what one says is misinterpreted…and more often than not, it is ignored.

As a scholar and writer, I try to put forth my ideas as clearly as possible and in many different forms and formats as I can. (I do not, however, spend much time on social media). I think of myself as writing for more serious readers, and for 'the long run', rather than for the next few seconds or minutes.

MC and CG:

One more question about disciplines. In drawing the development model of a synthesizing mind from your own life, you list a number of traits, among which you cite: "putting together […] preliminary answers in a non-disciplinary and undisciplined manner, seeing how they work, or do not work, and setting answers down in some kind of symbolic system" (lifted from "A Synthesizing Mind").

Could we say that disciplines correspond to "setting answers down in some kind of symbolic system"?

Would this definition of a discipline be the opposite of ever-rigid compartments, so that every researcher could actually build up his/her own discipline (the way you did in fact)?

Howard:

All human communication involves some kind of a symbolic system. The difference lies in whether one feels bound by the existing symbol systems and disciplines, or whether one seeks the best expression of one's thoughts, whether or not they are—or even can be—expressed in the usual ways.

Nothing begins as a discipline—it starts as thoughts. The most effective means of expression eventually become disciplines—like physics or political science or the calculus.

I would not say that I built up my own discipline—my work can be adequately described as qualitative social science, in the spirit of my own teachers (who are described in detail in A Synthesizing Mind. But you are right that my work is often critiqued or ignored by STRICT disciplinarians, who wants always to 'go by the book'… and who pounce on anyone who wants to test the boundaries.

Accordingly, my writings are most likely to be appreciated by readers who have a broader perspective, and are not 'keeping score'.

MC and CG:

Pedagogical competences and disciplinary (or non-pedagogical) competences suffer from not easily getting along together. For example, educators in K6 often feel uncomfortable in conceiving and doing scientific-like educational activities (we wonder why this is not also true for arts-like activities?), while university professors can easily fail in making students talents emerge, especially when for whatever reason these talents are not expressed in conventional manners. While contemporary focus is being devoted to re-thinking the process of education, professional development, school and academic recruitment, along with the corresponding systems for the teacher's assessment of competences, we seem to have a long road ahead of us.

Your personal story stands as an example of how many conventional disciplines can be unconventionally crossed (let us call them "undisciplines") in a lifetime (even physics pops up at one point, though only as a possibility).

How could the ideas developed in "A Synthesizing Mind" be implemented in order to synthesize pedagogical and non-pedagogical competences?

Could your ideas support education to scientific thinking (and any other kinds) from the age of 0-6, and how?

We would like to ask the same question for pedagogical thinking in college contexts, for example.

Howard:

In my memoir, I have told my own story, as best I can, and have tried to draw lessons from it. But autobiographers are not necessarily the best qualified to describe their subjects (we are NOT neutral!!): and in any case, one's person's biography should never be taken as a recipe for other persons.

Very briefly, the educational approaches that I favor take advantage of children's natural curiosity and help children to make sense of the world in various ways. That is what I love about the Reggio Emilia approach and the 'hundred languages of children'.

I am not opposed to disciplinary learning—indeed I am an enthusiastic advocate. Any person would be a fool to try to create physics or psychology or political science from the start. But if we want to have scholars or professionals who are innovative, creative—and innovation is not something that we can afford to marginalize—then they cannot and should not be slaves of any single discipline or methodology.

In that sense, we need to keep alive the spirit of Reggio Emilia—and such early educational progressive milieus have disproportionate large effect on the creative ambitions and achievements of their graduates.

MC and CG:

Science is often story-told for its rigorous and, for many people, abstruse formal toolbox, or else for its celebrated discoveries. It is rarely story-told for the creative synthesis that takes place every day, and which, besides being creative, often shapes the paths that lead to famous discoveries. As a result, scientific careers are not as popular, even when science becomes popular (which does not happen at all times if we consider the latest anti-science movements).

Art and science share experimentation, creativity, and expression in some formal/symbolic language. In "A Synthesizing Mind" you express the idea that "arts competence is not the same as academic schoolwork", that "IQ is different from AQ", and that "the arts are a privileged home for creativity with their different symbolic language".

Could you further elaborate on these statements, and on the differences between art and science?

Howard:

Most scholars and observers like to emphasize the similarities between the arts and the sciences, and that is fine.

But the goals of the two enterprises are different. Science seeks an accurate and well supported description of the world. The arts seek to capture and convey various aspects of experience; and they have no obligation other than to capture the interest and attention of those who participate in them.

Of course, there are some individuals who excel in both science and art (Leonardo is everyone's favorite example). But most artists—great or not—would not know their way around a scientific laboratory. And most scientists—even if they like to play the violin or to draw caricatures or to dance the tango—would not make works of art or performances that would interest others.

MC and CG:

Again, on creativity, you say the creative mind solves problems and introduces novel if not unprecedented ideas, but that these must be recognized by others, and that in any case they need disciplinary mastery and some prior synthesis.

Does this mean synthesis is one of the routes, or perhaps the privileged route, to creativity?

Howard:

Good question. Synthesis covers a very wide terrain. A textbook is a synthesis—but so is Darwin's masterwork "The Origin of Species". Some syntheses are ambitious and fail; others may be modest but are successful.

I am personally attracted to the works of synthesizers who create works of wide interest—for example, in our time, the biologist Jared Diamond, the commentator Yuval Harari, the political theorists Hannah Arendt and Danielle Allen. But there are excellent synthesizers who have no pretense to be creative; and there individuals who are highly creative but do not have the inclination or the capacity to synthesize, or who can only do it orally but not in writing.

MC and CG:

Typically, women and men, undertake scientific or pedagogical studies and then enter corresponding careers in very different quantities and at very different rates. The quantity and the

rates also depend on the career stage. For genders, this would appear to be a large form of unused intelligences, both quantitatively and qualitatively. A number of society-driven factors certainly favor this outcome in a vicious cycle, including stereotypes, the way formal learning and research environments are organized and what they value most, especially in the academy, and also role models.

One of the beauties we see in "Frames of Mind", in "Five Minds for the Future", and "A Synthesizing Mind", is how uniqueness emerges from differences and diversities. In "A Synthesizing Mind" you occasionally touch on the topic of gender differences and introduce the female figures that have been important for you.

This question is for both Howard Gardner the writer of memoirs, and Howard Gardner of the synthesizing mind. Do you think there might be gender differences in the way the MIs and/or the synthesizing mind work?

Howard:

We do not know the answer to this question—and even if we did, we would not know the reason for it. For example, decades ago, there were no women biologists on the faculties of major universities—now no university of quality would have an all-male faculty. The brains/minds have not changed—it is the goals, the opportunities, and the hiring system.

Similarly, as a youth, I collected all sorts of useless information—and carried it around with me like snowflakes or grains of sand. That included baseball scores, stock prices, television ratings, political votes. That inclination was much more common in males than in females. But perhaps the 'girls' in my age cohort were collecting information about different topics—art, clothing, style, food, novels, 'boys', etc.

The synthesizer finds the way to put apparently useless information together. I have no doubt that women can do so as well as men. And perhaps both our politics and our journalism would be better if more women with synthesizing inclinations were placed in key positions in these sectors.

MC and CG:

In "A Synthesizing Mind", you heartily write about the importance of role models in your academic (and somehow also personal) life, like in the case of Jerry Bruner and Nelson Goodman, as well as in your life, as with your uncle Fritz. It is crystal clear how important these figures have been for you.

How important do you think it could be for women to have other women as role models?

Howard:

I think it is very important. We tend to be attracted to individuals with whom we sense some similarity—and, as a mentor (and even, now, a grand-mentor), there is no question that I resonate with individuals (of whatever demography) who are like me in one way or another.

Research many years ago showed that women in the US were more likely to go on to graduate study in the sciences if they attended an all-women's college. And also there were some male teachers who encouraged women scholars and did not prey on them. The same holds, by the way, for individuals who come from different racial and ethnic groups.

If I had another life to live, I would strive to broaden the group to which I might serve as a role model. Fortunately, (for that purpose), I have worked for 54 years at a graduate school of education, and most of my students and colleagues have been women. I hope that, despite the gender difference, I have been a decent role model for these young women.

MC and CG:

Inter, multi, and cross-disciplinary approaches to research are now considered a must if we wish to explore the epic questions of humankind, and even citizen science approaches are steadily entering research work. The question this time is quite straightforward.

Could you outline the traits of an inter/cross-disciplinary researcher from the perspective of "A Synthesizing Mind"?

How could the training and recruitment system of researchers in academic institutions be designed to favor a diffused and massive presence of researchers with the ability to master these traits?

Howard:

As I said earlier, we need to develop and nurture disciplinary skills but NOT at the expense of approaching problems, challenges, tasks in ways that are most appropriate—even if they do not follow strict disciplinary rules, norms, and boundaries.

Having interdisciplinary role models, giving assignments (and rewards) for work that cuts across the disciplines, and making such hires and promotions is crucial.

Of course, we need role models who exemplify this trait. In my memoir, I describe a dozen persons who were outstanding interdisciplinary synthesizers—each of whom had great influence of me.

Most important, we need to resist the temptation to make hires who are outstanding in only one discipline and to ignore those whose strengths are in interdisciplinary or synthesizing thinking. I was fortunate enough to slip through the system in the United States some decades ago but I am not pleased with the current trends---more and more specialization, even hyper-specialization.

Perhaps AI (artificial intelligence) will shake up the whole hiring and promotional system—we will see!

MC and CG:

Artificial intelligence is pervading our everyday life and characterizes research methods, especially in the hard sciences. In this advancing era of quantum computers, fundamental research questions are again returning to center stage, and in different ways than before. For example, questions such as whether a computer might one day replace the human mind, provided it is powerful enough. This whole topic corresponds

to one of the questions explicitly left open at the end of "A Synthesizing Mind".

Could you elaborate this further?

You have changed the world's conversation about the meaning of intelligence. What would you say about consciousness and its relationship to intelligence, if any?

What does the concept of "Mind and Matter" mean to you, if anything?

Howard:

I think of each intelligence as a separate computer. Clearly, computing can take place whether or not you have a conscious entity. I think that consciousness is a biological process that exists in some animals—obviously it is more central for human beings than for horses, dogs, or even dolphins.

Consciousness is a property of our mental capacities, our brain—everything that we perceive or feel.

But I have not studied consciousness—perhaps I'll do that in another life! Of course, my consciousness will be different then!!

APPENDIX

Howard Gardner Selected Publications

Books

Fischman, W., & Gardner, H. (in press). *The real world of college*. MIT Press.

Gardner, H. (1973a). *The quest for mind: Jean Piaget, Claude Levi-Strauss, and the structuralist movement*. Knopf [Vintage Paperback, 1974; Coventure publication in England, 1975. Second Edition, 1981, University of Chicago Press. Translated into Italian and Japanese. Published online as an e-book, 2015, https://www.freepsychotherapybooks.org/].

Gardner, H. (1973b). *The arts and human development*. Wiley [Translated into Chinese and Portuguese. Second Edition, 1994, Basic Books].

Gardner, H. (1975). *The shattered mind*. Knopf [Main Selection, Psychology Today Book Club, Jan. 1974; Vintage Paperback, 1976. Quality Paperback Book Club Selection. Routledge and Kegan Paul, British Edition. Translated into Japanese].

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. Basic Books [Selected by five book clubs. British Edition, W. Heinemann. Basic Books Paperback, 1985. Tenth Anniversary Edition with new introduction, Basic Books, 1993. Twentieth Anniversary Edition with new introduction. Basic Books, 2004. Twenty-Fifth Anniversary Edition with new introduction. Basic Books, 2011. Translated into Arabic, Chinese (Taiwan), Czech, French, German, Georgian, Hebrew, Italian, Korean, Norwegian, Portuguese, Slovenian, Spanish, Swedish, and Vietnamese. Selected by three book clubs. Selected by the Museum of Education for Books of the Century exhibit, Columbia, SC, 1999. Tenth Anniversary British Edition, HarperCollins (Fontana Press), 1993. Second Edition, Fondo de Cultura Economica, 2005. Translated into Chinese, French, German, Hebrew, Italian, Japanese, Russian, and Spanish].

Gardner, H. (1991). *The unschooled mind: How children think and how schools should teach*. Basic Books [Tenth Anniversary Edition. Basic Books, 2004. Twentieth Anniversary Edition with new introduction. Basic Books, 2011. Adopted by the Reader's Subscription Book Club. British Edition, Harper Collins (Fontana Press), 1993. Translated into Arabic, Chinese (R.C.), Chinese (Taiwan), Croatian, Danish, French, German, Greek, Italian, Korean, Norwegian, Portuguese, Russian, Spanish, Swedish, Turkish, Ukrainian, and Vietnamese].

Gardner, H. (1993a). *Multiple intelligences: The theory in practice*. Basic Books [Selected by three book clubs. Excerpted in the magazine Behinderte in Familie, Schule und Gesellschaft, vol. 2, 1997. Abridged, Danish translation, 1997, Glydendal Undervisning. Translated into Spanish, Portuguese, Italian, French, Chinese (Taiwan), Hebrew, Korean, Polish, Chinese (R.C.), Danish, Ukrainian, Japanese, Norwegian, Indonesian, Arabic, and Turkish].

Gardner, H. (1993b). *Creating minds: An anatomy of creativity seen through the lives of Freud, Einstein, Picasso, Stravinsky, Eliot, Graham, and Gandhi*. Basic Books [Quality Paperback Book Club. Translated into Chinese (Taiwan), Chinese (simplified), French, German, Italian, Korean, Polish, Portuguese, Slovenian, Spanish, Swedish, Turkish, and Vietnamese. 2011 Edition with updated preface and bibliography: Basic Books].

Gardner, H. (1999). *The disciplined mind: What all students should understand*. Simon and Schuster [Excerpted in *The Futurist, 34*(2), 30-32, (Mar/Apr, 2000). Paperback edition with new afterword "A Tale of Two Barns": New York, NY. Penguin Putnam. Translated into Portuguese, German, Spanish, Chinese (Taiwan), Italian, Swedish, Korean, Hebrew, Danish, Turkish, Romanian, and Croatian].

Gardner, H. (2007). *Five minds for the future*. Harvard Business School Press [Translated into Arabic, Korean, Italian, Japanese, Danish, Chinese (CC), Chinese (SC), Norwegian, Portuguese, Polish, Russian, Spanish, Swedish, Turkish, Romanian, French, Indonesian, Thai, Vietnamese, Georgian, and Persian]. https://doi.org/10.2514/4.478765

Gardner, H. (2011a). *Truth, beauty, and goodness reframed: Educating for the virtues in the 21st century*. Basic Books [Translated into Chinese (simple characters), French, Italian, Korean, Portuguese, Romanian, Spanish, and Turkish].

Gardner, H. (2011b). *Truth, beauty, and goodness reframed: Educating for the virtues in the era of truthiness and twitter* (Paperback edition, with new preface). Basic Books.

Gardner, H. (2020). *A synthesizing mind: An intellectual memoir*. MIT Press. https://doi.org/10.7551/mitpress/12405.001.0001

Gardner, H., & Davis, K. (2013). *The app generation: How today's youth navigate identity, intimacy, and imagination in a digital world.* Yale University Press [Translated into Italian, Korean, Spanish, Romanian, and Chinese (simple characters)].

Book chapters

Chen, J., & Gardner, H. (2011). Assessment of intellectual profiles: A perspective from multiple intelligences theory. In D. Flanagan, & C. Graham (Eds.), *Contemporary intellectual assessment* (pp. 145-155). Guilford Press.

Gardner, H. (2007). A multiplicity of intelligences: In tribute to Professor Luigi Vignolo. In P. Marien, & J. Abutalebi (Eds.), *Neuropsychological research: A review*. Psychology Press.

Gardner, H. (2008). Multiple lenses on the mind. In C. M. Huat, & T. Kerry (Eds.), *International perspectives on education* (pp. 7-27). Continuum International Publishing. https://doi.org/10.5040/9781350091320.ch-001

Gardner, H. (2015). 10 reclaiming disinterestedness in the digital era. In D. Allen, & J. S. Light (Eds.), *From voice to influence: Understanding citizenship in a digital era* (pp. 232-252). University of Chicago Press. https://doi.org/10.7208/9780226262437-012

Gardner, H. (in press). Of human potential: A forty year saga. In D. Y. Dai, & R. J. Sternberg (Eds.), *Scientific inquiry into human potential: Historical and contemporary perspectives across disciplines*. Routledge.

Gardner, H., & Fischman, W. (2019). Towards quality higher education: Barriers and enablers. In O. Zlatkin-Troitschanskaia, (Ed.), *Frontiers and advances in positive learning in the age of InformaTiOn (PLATO)* (pp. 8-20). Springer. https://doi.org/10.1007/978-3-030-26578-6_2

Krechevsky, M., Mardell, B., Filippini, T., & Gardner, H. (2011). Creating powerful learning experiences in early childhood: Lessons from good teaching. In B. Falk (Ed.), *In defense of childhood*. Teachers College Press.

Sheridan, K., & Gardner, H. (2012), Artistic development: The three essential spheres. In A. Shimamura (Ed.), *Aesthetic science: Connecting minds, brains, and experience* (pp. 276-296). Oxford College Press. https://doi.org/10.1093/acprof:oso/9780199732142.003.0063

Straughn, C., & Gardner, H. (2011). GoodWork in museums today…and tomorrow. In J. Marstine (Ed.), *The Routledge companion to museum ethics*. Routledge.

Research articles

Gardner, H. (2002). The three faces of intelligence. *Daedalus*, 139-142.

Gardner, H. (2008). The 25th anniversary of the publication of Howard Gardner's frames of mind: The theory of multiple intelligences. https://howardgardner01.files.wordpress.com/2012/06/mi-at-251.pdf

Gardner, H. (2011a). Multiple intelligences: Reflections after thirty years. *National Association of Gifted Children Parent and Community Network Newsletter*, 3-4. https://howardgardner01.files.wordpress.com/2016/04/472-multiple-intelligences-reflections-after-30-years.pdf

Gardner, H. (2011b). The theory of multiple intelligences: As psychology, as education, as social science. *Harvard Graduate School of Education*. http://www.pz.harvard.edu/resources/the-theory-of-multiple-intelligences-as-psychology-as-education-as-social-science

Gardner, H. (2013a). Harvard project zero: A personal history. *Harvard Graduate School of Education*. https://howardgardner01.files.wordpress.com/2012/06/pz-history-9-10-13.pdf

Gardner, H. (2013b). Reestablishing the commons for the common good. *Daedalus, 142*(2), 199-208. https://doi.org/10.1162/DAED_a_00213

Gardner, H. (2019a). "Neuromyths": A critical consideration. *Mind, Brain, and Education, 14*(1), 2-4. https://doi.org/10.1111/mbe.12229

Gardner, H. (2019b). Ellen Winner Festschrift. *Empirical Studies of the Arts, 38*(1), 128-130. https://doi.org/10.1177/0276237419868942

Gardner, H. (2020). Of human potential: A forty year saga. *Journal for the Education of the Gifted, 43*(1), 12-18. https://doi.org/10.1177/0162353219894406

Mucinskas, D., & Gardner, H. (2013). Educating for good work: From research to practice. *British Journal of Educational Studies, 61*(4), 453-470. https://doi.org/10.1080/00071005.2013.829210

Redding, A. B., James, C., & Gardner, H. (2016). Nurturing ethical collaboration. *Independent School, 75*(2), 58-64.

Rundle, M., Weinstein, E., Gardner, H., & James, C. (2015). Doing civics in the digital age: Casual, purposeful, and strategic approaches to participatory politics. *YPP Research Network Working Paper Series No. 2*. https://clalliance.org/publications/civics-digital-age-casual-purposeful-strategic-approaches-participatory-politics/

Conference papers

Gardner, H. (2005, May). Multiple lenses on the mind [Paper presentation]. Expo-Gestion. Bogota, Colombia. http://howardgardner.com

Gardner, H. (2008, January 12). *Five minds for the future* [Paper presentation]. The Ecolint Meeting in Geneva: Schools Facing the Challenges of the Contemporary World. International School of Geneva.

Others

Gardner, H. (2002, Spring). *Interview with Steen Larsen. Education and humanism*. Padaogiske Universitet, Denmark.

Gardner, H. (2019). *Creativity and creativities: The challenges ahead: In tribute to Teresa Amabile*. https://static1.squarespace.com/static/600727b753a1396eba98dd48/t/60299f2fe5d7be134f0fc546/1613340464394/festschrift-for-teresa-amabile.pdf

Gardner, H. (2019). In J. Brockman (Ed.), *The last unknowns* (p. 89). Harper Collins.

https://www.ejmste.com