

The Road to Harwell Lies through Education

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The long history of utopianism

- Creating ideal societies has been a topic of interest for centuries.
- Plato pursued the twin goals of Harmony and Wellbeing when he lived in 500 BCE.
- Every era has created a utopian vision and attracted followers to that vision.
- The Harwell concepts of Harmony and WellBeing bring a critical modern twist: the use of Artificial Intelligence, with the potential to revitalize the ideas related to a global educational goal.

The focus of the discussion

Most of the AI discussion in education is divided between enthusiastic support for the many opportunities AI may provide our students and concern about the possible harm it portends.

As a researcher in technology and school change, I am interested in understanding how best to prepare our students to use AI wisely and ethically.

How do we prepare our children for Harwell?

Underneath the development of a Harwellian future lies the important assumption -- that our children are currently being educated to be active problem solvers and ethical learners who can contribute to a world of Harmony and Wellness .

Is this true?

Education must be a strong partner in developing the vision

I would argue we have much more work to do.

- To prepare our children, teachers need support in learning to design inquiry-oriented, culturally-relevant projects that teach our students how to wrestle with authentic problems.
- We have found evidence of the mediating effect of technology in our NSF research: technology can help teachers move from traditional teaching approaches to helping students become skilled problem-solvers in STEM

Technology can support traditional approaches or support change

- Without the opportunity to develop creative learning environments for their students, teachers often simply use technology to support traditional pedagogical approaches. Teachers need professional development that shows them how to use technology to support new ways of teaching.
- To use AI effectively, we need to think more deeply about how to structure learning in ways that engage and empower both teachers and students..
- Inquiry learning that utilizes project-based approaches is one promising path.



Learning to harmonize...

- In the world of music and song, harmonization comes naturally for some but not for all.
- “Well-being” is far from universal experience
- How do we build these concepts with our students?
- How do we inspire students, model the concepts for them, teach them to harmonize and seek well-being?

Teaching is key

- At a time when families have been leaving churches, synagogues, mosques and other organizations for young people, (e.g. Boy Scouts, Girl Scouts and 4-H clubs), exposure to ethical education is limited.
- Values are highly politicized-- libraries and even teachers are under attack by parents and others when values seem to differ.
- This may leave schools with the enormous challenge of paving the road to Harwell.

Technology cannot do this for us

- Technology and AI in particular provide powerful new tools.
- But humans must envision the Harwellian future. They must lead it, organize, inspire, and direct it.
- AI must be used in service of new global understandings about the potential for harmony and well-being.

It may be possible...

- There are curriculum guides for ethical development:
- Lawrence Kohlberg's *Program on Moral Development*, for instance, provides an understanding of different moral stages.
- What is needed now is a global commitment to establish a transformative vision, using AI to enhance and expedite the development of “A Shared Global Educational Goal”.

“Magical thinking” about the power of AI will not change society

Some overarching things that are needed:

- Dialogue to create shared meaning,
- Strong support from global leaders
- An understanding of how to use AI tools to accomplish what so many have attempted, lest Harwell becomes another short-lived utopian vision.