The Richard C. Vari, PhD Endowed Lecture

October 30th 2023

The changing role of teachers and students of the future

Ronald M Harden
OBE MD FRCP(Glas) FRCS(Ed) FRCPC
Editor-in-Chief Medical Teacher
Emeritus Professor of Medical Education,
University of Dundee, UK
• Played a pivotal role as Founding Curriculum Dean of Virginia Tech Carilion School of Medicine in the development of the School

• Professor Emeritus of Basic Science Education

• Influenced medical education around the globe and received numerous awards recognizing his contributions

• Formerly President of The International Association of Medical Science Educators (IAMSE)
“We’re all in this together”
High School Musical 1 (2006) – Walt Disney Studios
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CURRICULUM

- Learning outcomes
- Content
- Sequence
- Teaching & learning methods
- Assessment

Commonplaces:
- Teachers
- Students
The Future of Medical Education in Scotland
“It is important to remember that the actual details of the curriculum matter little in comparison to the selection of students and teachers.

If these are good any system will work pretty well; if they are indifferent the most perfect curriculum will fail to produce results.”

Sir Derrick Dunlop in the *Future of Medical Education in Scotland*, February 1963
“It is important to remember that the actual details of the curriculum matter little in comparison to the selection of students and teachers.

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Sir Derrick Dunlop in the *Future of Medical Education in Scotland*, February 1963
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The changing role of teachers and students of the future

The most important development in health professions education in the next decade

Ronald M Harden
OBE MD FRCP(Glas) FRCS(Ed) FRCPC
Editor-in-Chief Medical Teacher
Emeritus Professor of Medical Education,
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Teachers and students working in partnership to enhance learning and teaching in higher education

“A shared responsibility”
THE ROLES OF THE STUDENT

- Teacher
- Scholar
- Professional
- Facilitator of Learning
- Information Processor
- Curriculum Collaborator
- Assessor
THE ROLES OF THE TEACHER

- Scholar
- Manager
- Professional
- Information Provider
- Facilitator
- Curriculum Developer
- Assessor
- Role Model
MEDICAL EDUCATION

THE TEACHER
THE STUDENT
Challenges in health professions education

- FUTURE - PROOFING STUDENT
- AN AUTHENTIC CURRICULUM
- AUTHENTIC ASSESSMENT
- SCHOLARSHIP IN EDUCATION
- INFORMATION OVERLOAD
Challenges in health professions education
INFORMATION OVERLOAD
> 60,000 DIAGNOSES in Medicine

> 6,000 INTERVENTIONS in Medicine
The literature in medicine contains about 24 million records.

And expands at a rate of 2,100 articles a day.
A PROBLEM

- Huge expansion of knowledge
- Time for training is not increased
- All the information required by a doctor cannot be covered in the curriculum
- Implications for teachers and students
THE ROLES OF THE TEACHER

- SCHOLAR
- PROFESSIONAL
- MANAGER
- ROLE MODEL
- ASSESSOR
- CURRICULUM DEVELOPER
- INFORMATION PROVIDER
- FACILITATOR
The teacher as a transmitter of information

The teacher as a curator of information
Teachers as curators

John Cookson

Faculty of Science and Health, University of Portsmouth, Portsmouth, UK

There have been a number of papers and books describing the role of medical teachers, most notably by Harden and Lilley (2018) but I want to describe another: although rather, to use a word that sums up a number of other roles but perhaps from a slightly different viewpoint.

That word is ‘curator’, or perhaps more fully, ‘curator of knowledge’.

So what do curators normally do? Definitions vary a little, but they usually feature in theatres, often over. This is because the curators do not own anything themselves; the exhibits are an expression of mankind’s creative genius; they belong to everyone and to no one. No one can take a picture home to hang on the wall or position an object on the hall table, keeping them for their delight alone.

The curator will be disappointed if people come in, look around a few rooms and walk out again. They will want to

“A curator of knowledge”

John Cookson, Medical Teacher Medical Teacher, 45(4), pp. 442–443
THE ROLES OF THE STUDENT

- Teacher
- Scholar
- Professional
- Facilitator of Learning
- Information Processor
- Curriculum Collaborator
- Assessor
THE STUDENT AS INFORMATION PROCESSOR

Strategies to improve information processing:

- Input
- Sensory Memory
- Working Memory
- Long-term Memory
- Output
THE STUDENT AS INFORMATION PROCESSOR

The student as a recipient of information → The student as an information seeker
Medical education in an era of ubiquitous information

J. Patton, C. P. Friedman

Data, information, knowledge

Understanding the distinction between data, information, and knowledge allows us to develop different strategies to teach learners to interact in the digital healthcare environment. "Information" is typically used as an umbrella term for the continuum of data to knowledge, and we follow suit in this chapter. Anchoring the continuum on the data side are the strings of symbols that we are familiar with as raw data. Anchoring the continuum on the knowledge side are rules and hypotheses that help us analyze complex situations. In our current environment it has all become ubiquitous as it is increasingly stored in a digital format.

More and more in digital form, via the Internet is making point-of-care decision support a reality, making healthcare more accessible and reducing quality improvement needs. A wealth of information is being generated and is available to those who can make sense of it when making decisions, designing and delivering care.

Perhaps more than any other recent advance, health information technology (HIT) is rapidly becoming a key foundation for all aspects of patient care. As the complexity of healthcare increases, electronic health records (EHR) are the only way to provide the information needed to help healthcare professionals make informed decisions to improve and extend the life of patients. However, a major barrier to widespread use of EHR is the lack of a shared vision of how the data should be used.

Data is information about information. Data is the raw material, a term that is often used to describe the collection of raw data that is stored in a database or spreadsheet. The term "information" is used to describe the meaningful content that is derived from the raw data. Information is a key component of any decision-making process, and it is the primary currency in the digital economy. Information is often stored in a database or database system, which is a collection of data that is organized in a way that allows it to be accessed and manipulated. Information is also a key component of any decision-making process, and it is the primary currency in the digital economy.
INFORMATION OVERLOAD

Challenges in health professions education
Challenges in health professions education
2028 Medical School
2033 Postgraduate
2039 Practice Medicine
2074
How to future-proof Rory for practice in 2050 and beyond
Preparing for life long learning

THE ROLES OF THE TEACHER
SELF-DIRECTED LEARNING

DIRECTED SELF-LEARNING
Stepping Stones
Preparing for life-long learning
Students take control of their own learning

Develop self-regulated learning
STUDENT CHOICES

- Learn individually or in pairs?
- Use ‘self-assessment’ at beginning or at end of programme?
- Read text or listen to audio commentary?
- When to study and for how long?
- Depth of study?

PERSONALISED LEARNING
Challenges in health professions education

FUTURE-PROOFING STUDENT

Preparation for life-long learning

INFORMATION OVERLOAD
Challenges in health professions education

- Information Overload
- Future-Proofing Student
- An Authentic Curriculum
Professional education has not kept pace with these challenges, largely because of fragmented, outdated, and static curricula that produce ill-equipped graduates.

Learners develop the ability to perform in the workplace as a doctor.
“Ivory Tower”
Van Morrison (1986)
MEDICAL SCHOOL
Ivory Tower

MEDICAL PRACTICE
Real World
MEDICAL SCHOOL
Ivory Tower

MEDICAL PRACTICE
Real World

LEAP OF FAITH

AUTHENTIC CURRICULUM
THE ROLES OF THE TEACHER

AUTHENTIC CURRICULUM

- Manager
- Scholar
- Professional
- Information Provider
- Facilitator
- Curriculum Developer
- Assessor
- Role Model
THE ROLES OF THE STUDENT

THE CHANGING ROLE OF MEDICAL STUDENTS

CURRICULUM COLLABORATOR
INFORMATION PROCESSOR
FACILITATOR OF LEARNING
PROFESSIONAL
SCHOLAR
TEACHER
ASSESSOR
“Students as partners? This might raise some eyebrows! After all, aren’t teachers there to teach, and students there to learn?”

Sharon Kapadia, Personal View, Medical Teacher. Perspectives of a Second Year Medical Student.
STUDENTS AS CURRICULUM COLLABORATORS

- Evaluation of the curriculum
- Membership of the curriculum committee
- Curriculum co-producer
Teaching Matters blog

A student partnership project to enhance curriculum development in medical education

Collaboration between teachers & students in developments of:

- Course content
- Learning resources
- Learning approaches
Staff-student partnership to develop authentic PBL case - Keele University

- Two undergraduate students with lived experience of sickle cell joined a multi-disciplinary faculty team
- Created a 4-part PBL case on sickle cell (covering pre-conception to age 20)

Fejiro Okagbare, Year 4 Keele medic
Alexandra Ashaye, Year 3 Keele medic
Karen Adams and Audrey Skidmore (faculty)
Challenges in health professions education
Challenges in health professions education

- Information Overload
- Future Proofing Student
- An Authentic Curriculum
- Authentic Assessment
THE ROLES OF THE TEACHER

- Scholar
- Professional
- Information Provider
- Facilitator
- Curriculum Developer
- Assessor
- Role Model
- Manager
“The curriculum instructs teachers what to teach; The exam instructs students what to learn.”

Donald Melnick, 1991
THE ROLES OF THE STUDENT
STUDENTS AS ASSESSORS OF COMPETENCE

- Checking authenticity of assessment
- Self assessment
“We must constantly remind ourselves that the ultimate purpose of evaluation is to have students become self-evaluating.

If students graduate from our schools still dependent upon others to tell them when they are adequate, good or excellent, then we’ve missed the whole point of what education is about.”

Costa and Kallick (1992)
Reassessing assessment.
In A.L. Costa, J.A. Bellanca, & R. Fogarty (Eds.),
If minds matter: A foreword to the future, Volume II (pp275-280)
STUDENTS AS ASSESSORS OF COMPETENCE

- Checking authenticity of assessment
- Self assessment
- Peer assessment
Challenges in health professions education

- Information Overload
- Future Proofing Student
- Authentic Assessment
- An Authentic Curriculum
Challenges in health professions education

- Information Overload
- Scholarship in Education
- Future-Proofing Student
- An Authentic Curriculum
- Authentic Assessment
THE ROLES OF THE TEACHER

- Role Model
- Assembler
- Curriculum Developer
- Professional
- Information Provider
- Facilitator
- Scholar
- Manager
THE TEACHER AS A SCHOLAR

- Reflect on teaching
- Review evidence
- Research
- Innovate
- Communicate
THE ROLES OF THE STUDENT

- Professional Facilitator of Learning
- Information Processor
- Curriculum Collaborator
- Assessor
- Teacher
- Scholar

[Pie chart showing the roles of a student]
THE STUDENT AS A SCHOLAR

- Reflect on teaching
- Review evidence
- Research
- Innovate
- Communicate
Papers published in Medical Teacher with a student as co-author

Student as co-author over the years:
- 2000: 18%
- 2010: 12%
- 2017: 8%
- 2020: 4%
- 2025: 0%
Challenges in health professions education

FUTURE - PROOFING STUDENT

AN AUTHENTIC CURRICULUM

INFORMATION OVERLOAD

SCHOLARSHIP IN EDUCATION

AUTHENTIC ASSESSMENT

IMPLICATIONS FOR TEACHERS & STUDENTS

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The student as a partner

A THRESHOLD CONCEPT IN MEDICAL EDUCATION
The student participation ladder
1. Involvement of students
2. Shared decision-making
3. Equality between teachers & students
THANK YOU FOR BEING LATE
AN OPTIMIST’S GUIDE TO THRIVING IN THE AGE OF ACCELERATIONS
Thomas L. Friedman

‘A master class’
THE NEW YORK TIMES
The Richard C. Vari, PhD Endowed Lecture

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Thank you!