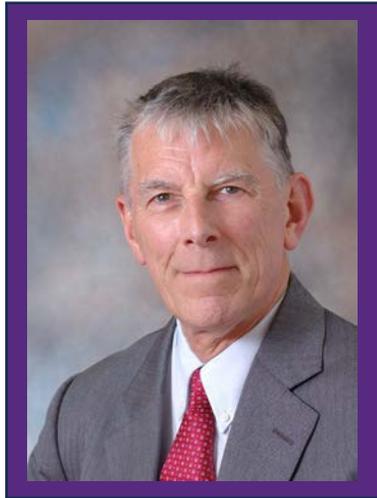




*Teaching Excellence Academy for
Collaborative Healthcare*



Ronald M Harden

**OBE MD FRCP(Glas) FRCS(Ed) FRCPC
Editor-in-Chief Medical Teacher
Emeritus Professor of Medical Education,
University of Dundee, UK**

The Richard C. Vari, PhD Endowed Lecture

October 30th 2023

**The changing role of
teachers and students
of the future**

- **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)**



Richard C. Vari, PhD

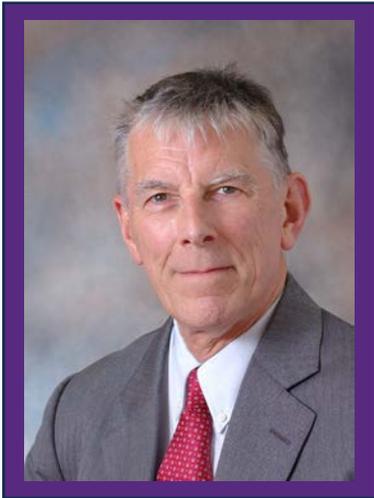


“We’re all in this together”

High School Musical 1 (2006) – Walt Disney Studios



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**The changing role of
teachers and students
of the future**

CURRICULUM



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



The Practical: A Language for Curriculum¹

JOSEPH J. SCHWAB
University of Chicago

I shall have three points. The first is this: that the field of curriculum is moribund, unable by its present methods and principles to continue its work and desperately in search of new and more effective principles and methods.

The second... curriculum field has reached this unbar-

Commonplaces:

- Teachers
- Students

The Future
of
Medical Education
in Scotland

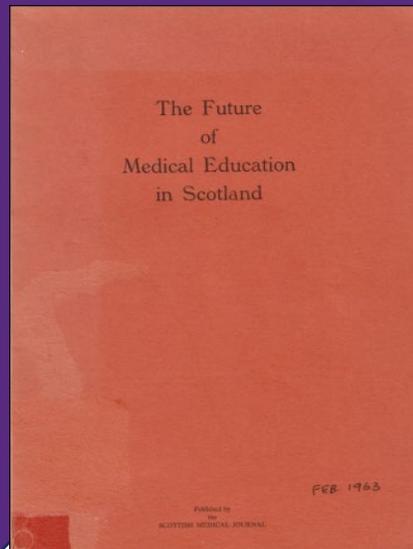
FEB. 1963

Published by
the
SCOTTISH MEDICAL JOURNAL

“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.”

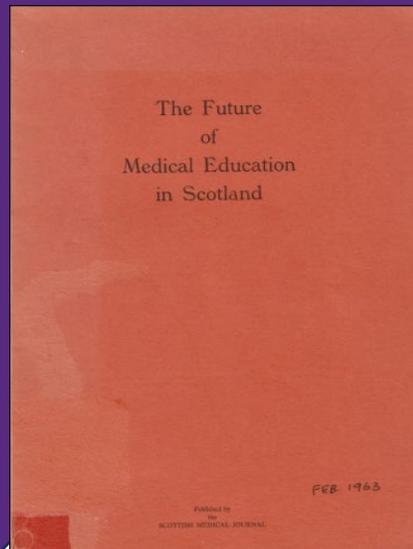
Sir Derrick Dunlop in the *Future of Medical Education in Scotland*, February 1963



“It is important to remember that the actual details of the curriculum matter little in comparison to the selection of **students and teachers.**

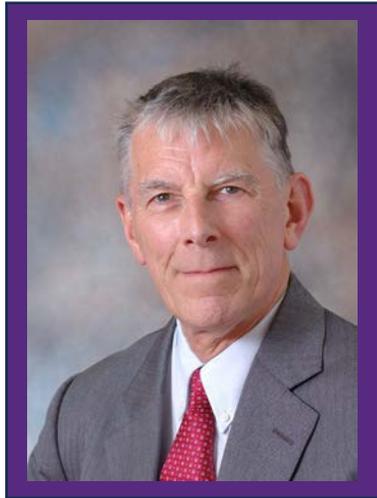
If these are good any system will work pretty well; if they are indifferent the most perfect curriculum will fail to produce results.”

Sir Derrick Dunlop in the *Future of Medical Education in Scotland*, February 1963





*Teaching Excellence Academy for
Collaborative Healthcare*



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,
University of Dundee, UK

The Richard C. Vari, PhD Endowed Lecture

October 30th 2023

**The changing role of
teachers and students
of the future**



International Journal for Students as Partners

- **Teachers and students working in partnership to enhance learning and teaching in higher education**
- **“A shared responsibility”**



Harden
Harden

THE CHANGING ROLE OF MEDICAL STUDENTS

ELSEVIER



Enhanced
DIGITAL
VERSION
included

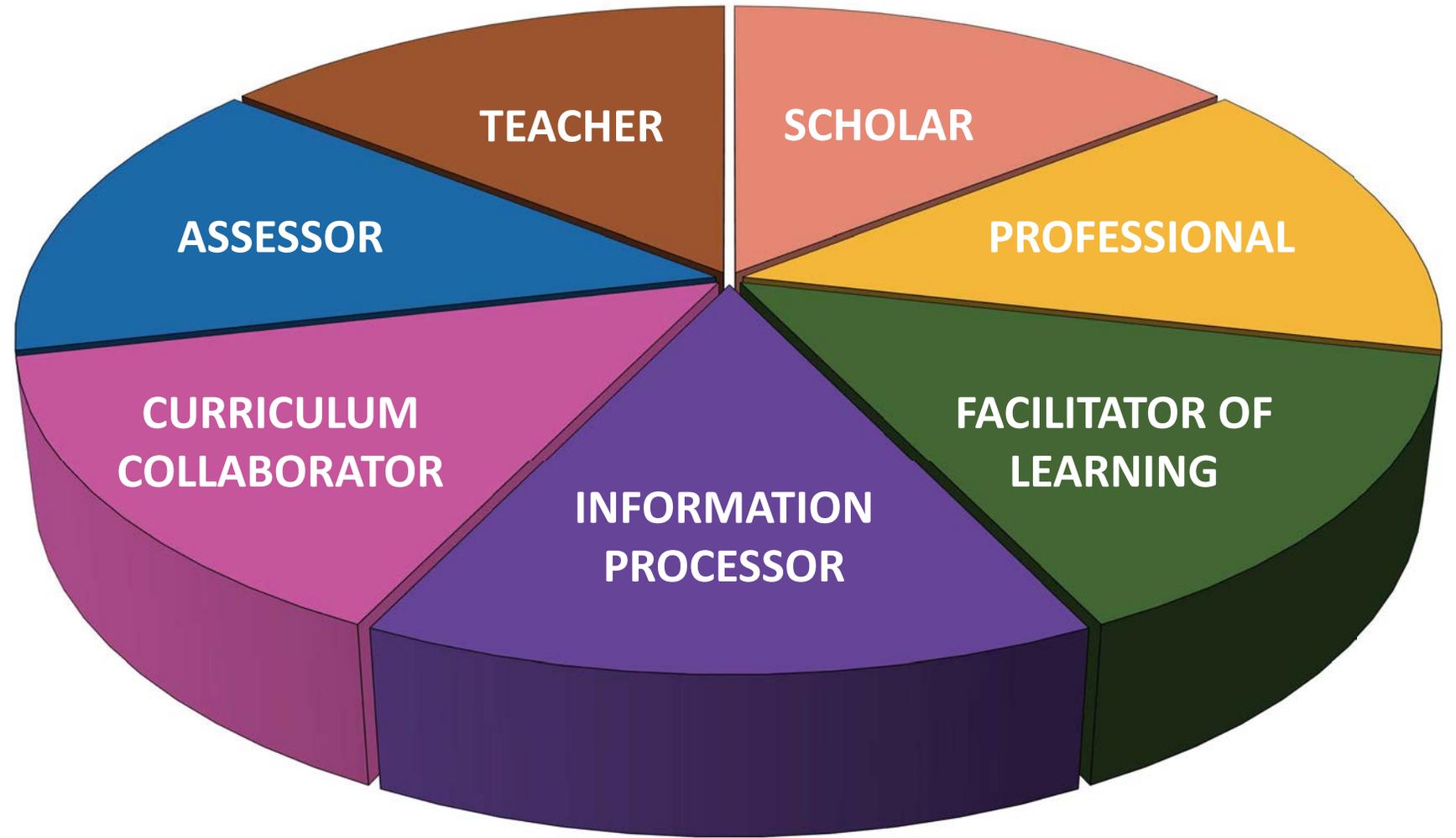
Jeni Harden | Ronald M Harden

THE CHANGING ROLE OF MEDICAL STUDENTS



Forewords by
Aviad Haramati
Ed Whittaker

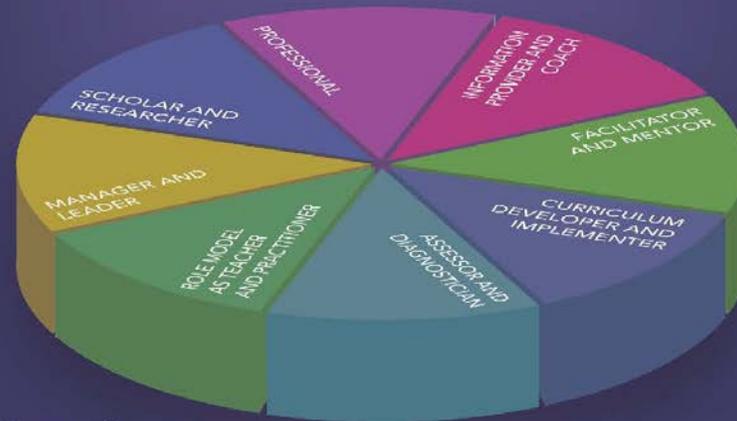
THE ROLES OF THE STUDENT



Ronald M Harden | Pat Lilley

THE EIGHT ROLES OF THE MEDICAL TEACHER

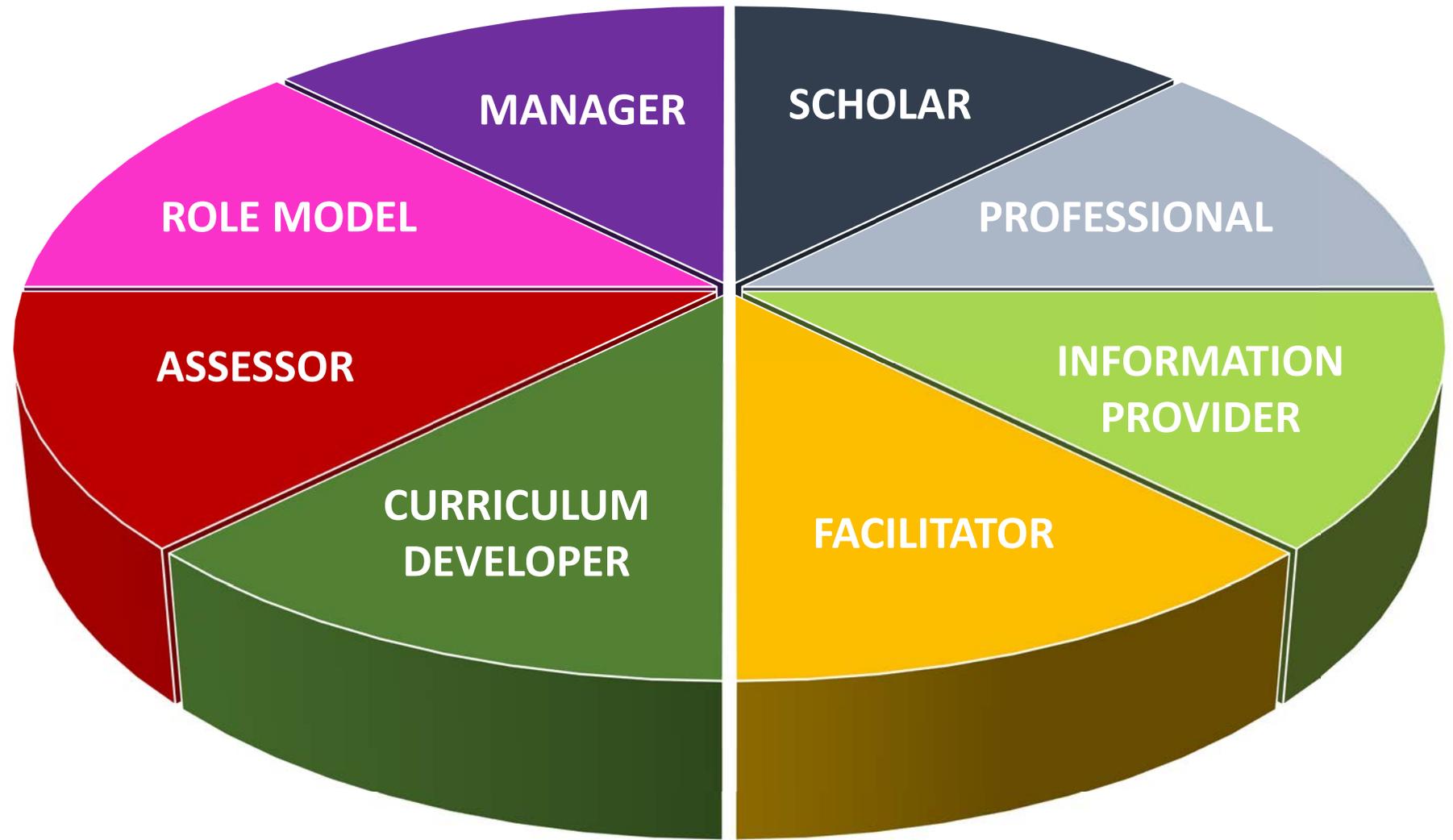
The purpose and function of a teacher in the healthcare professions

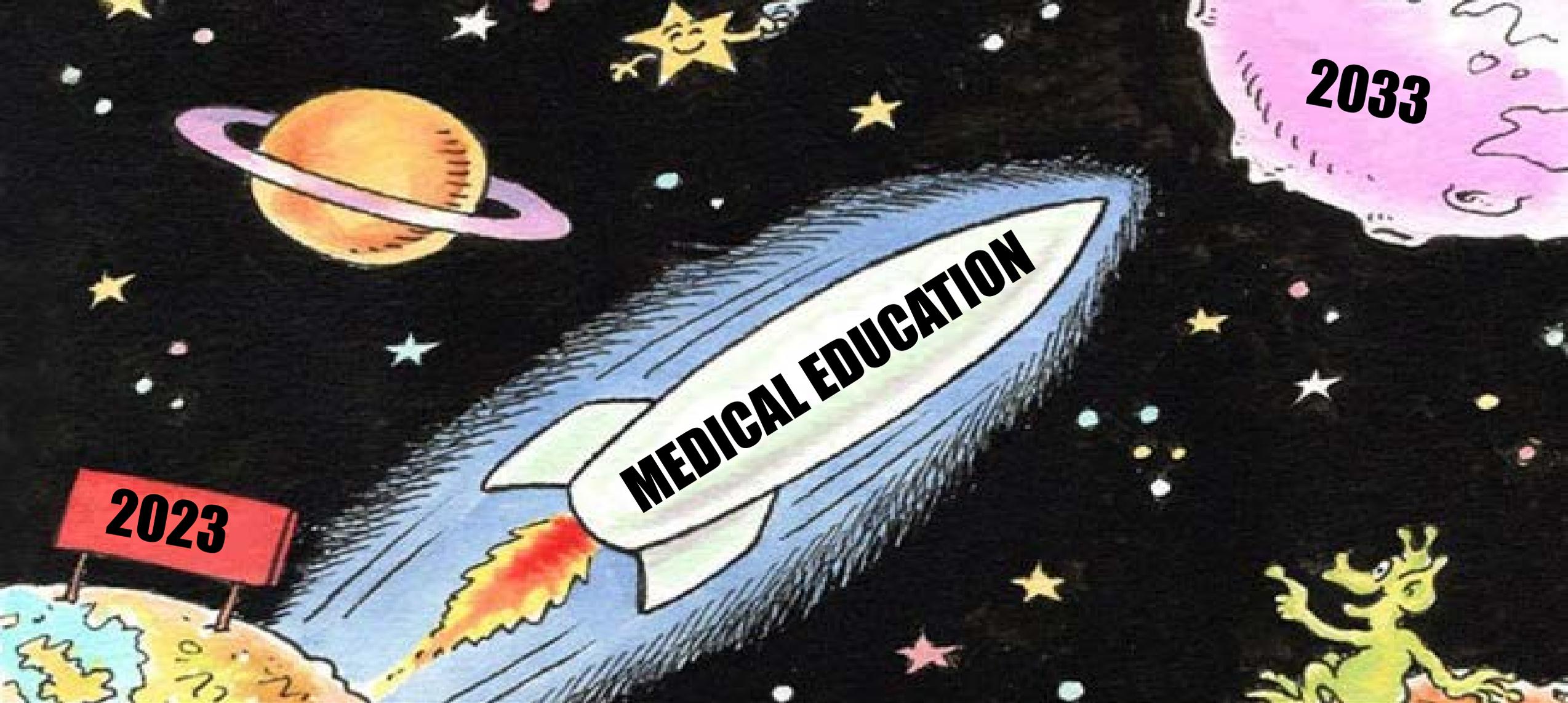


Foreword by
John Norcini

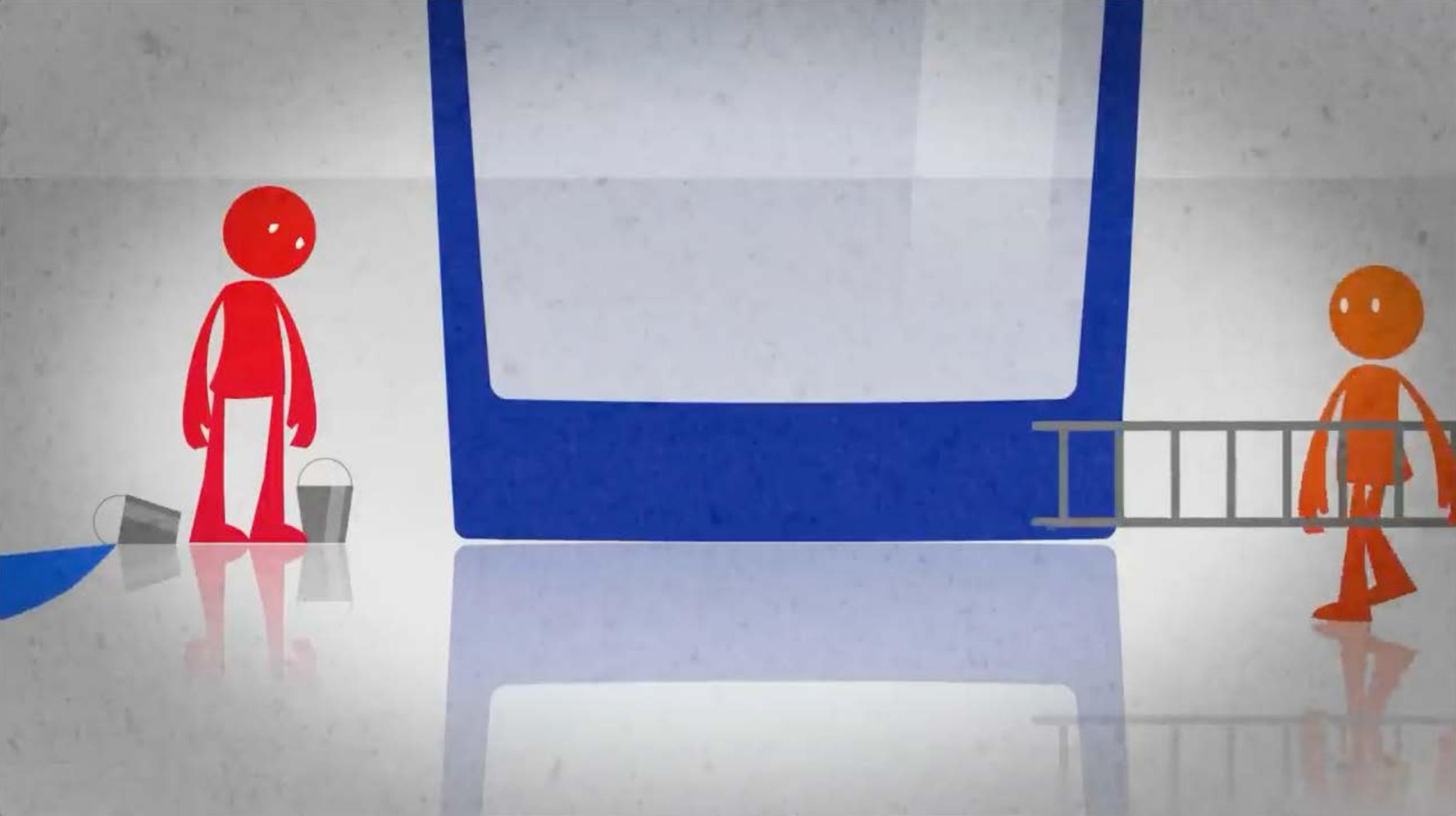
ELSEVIER

THE ROLES OF THE TEACHER





**THE TEACHER
THE STUDENT**



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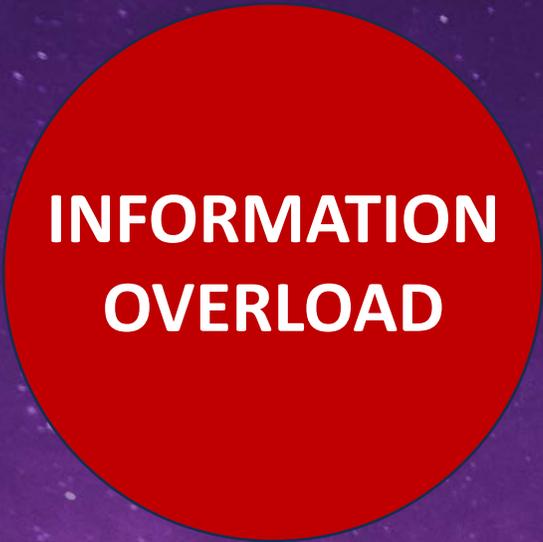
**FUTURE -
PROOFING
STUDENT**

**AN
AUTHENTIC
CURRICULUM**

**Challenges in health
professions education**

**SCHOLARSHIP
IN EDUCATION**

**AUTHENTIC
ASSESSMENT**



**INFORMATION
OVERLOAD**

**Challenges in health
professions education**



**> 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**

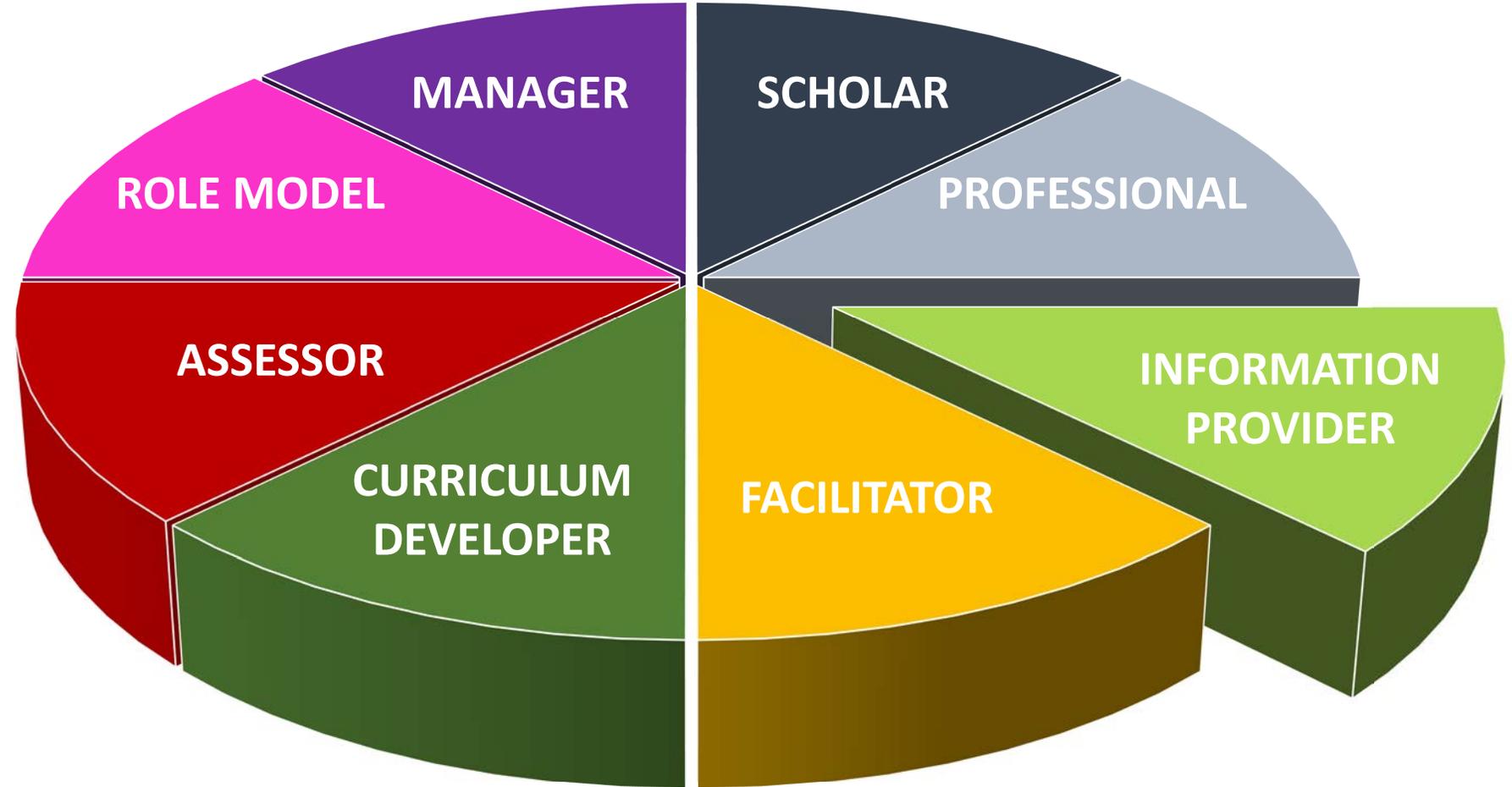




A PROBLEM

- 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





INFORMATION EXPLOSION

**The teacher as a
transmitter of information**



**The teacher as a
curator of information**

PERSONAL VIEW

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 the essential feature is that they look after some-

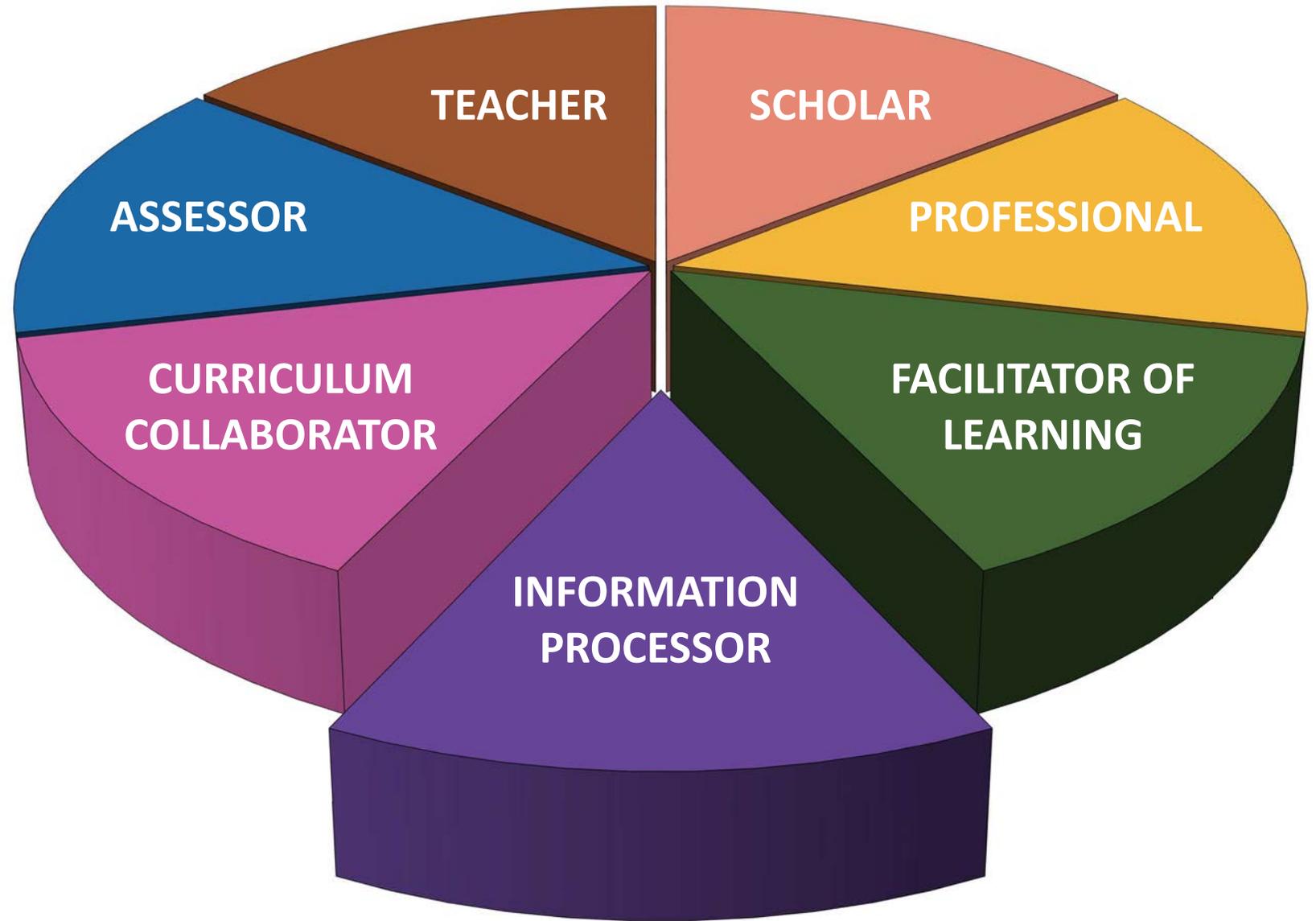
over. This is because the curators do not own anything themselves; the exhibits are an expression of mankind’s creative genius; they belong to everyone and to no one. No one can take a picture home to hang on the wall or position an object on the hall table, keeping them for their delight alone.

The curator will be disappointed if people come in, look around a few rooms and walk out again. They will want to suggest a process of ‘slow looking’ to spend time not just

“A curator of
knowledge”

John Cookson, Medical
Teacher *Medical Teacher*,
45(4), pp. 442–443

THE ROLES OF THE STUDENT



THE STUDENT AS INFORMATION PROCESSOR

Strategies to improve information processing:



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

Chapter

32

Section 4:
Curriculum themes

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.

"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, so does the complexity of collaboration needed between different members of the healthcare team. To evaluate the effectiveness of new treatments and the quality of care in specific populations, individual providers or the team as a whole must be able to rapidly and efficiently collect, analyze, and select intervention and performance data. Regardless of their chosen field, all medical students will have to manage vastly increased amounts of biomedical and clinical data."

Triola et al., 2010

When knowledge is in a computable form it can also advise us as to what course of action to take. Knowledge has existed for decades in the form of journal articles and other tomes. While available, it is not easily accessed and its ability to give on-demand advice is non-existent. In the last decade we have seen digital knowledge being leveraged in the form of risk prediction calculators and computable clinical guidelines. The ability to access this knowledge in the moment is a competency that will increasingly be necessary for clinicians.

More and more in digital form. Information via the Internet is making point-of-care information available.

Cloud-based systems are enabling healthcare to reduce costs, reducing quality improvement.

Big data is being generated in healthcare. We need to be able to deal with this data when making decisions. Data analytics, reasoning and decision aids ease the burden.

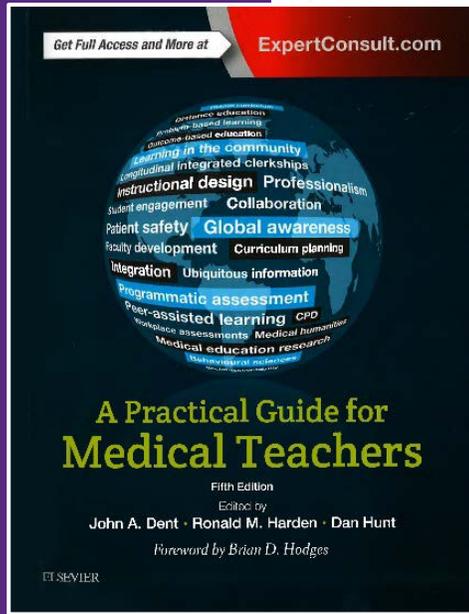
Information

Health information is everywhere. Information is in digital form, which is not only to people but also to devices. The value of information is added value to it through computable

information. Information is available to everyone who participates or has an interest in health and healthcare including health professionals and their patients, organizations that pay for healthcare, educators, as well as researchers and quality improvement specialists.

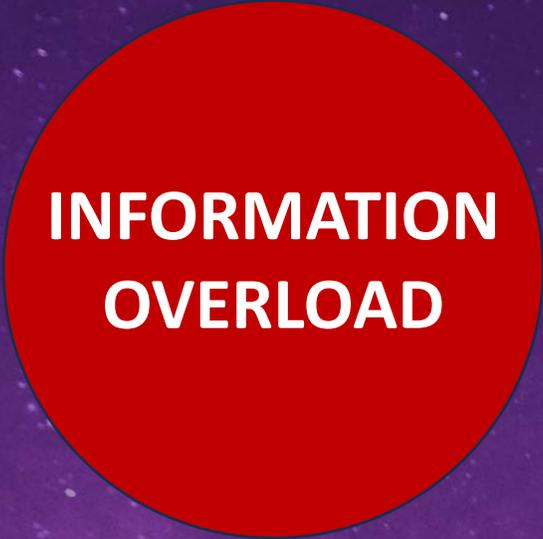
Perhaps the greatest change in recent years is the availability of health-related information to the general public, including both their personal health data and general medical knowledge. Patients as recipients of healthcare have access to data about them generated by healthcare, and, increasingly, they are capturing their own data through sensors and mobile devices.

Information is a resource that can lead to better health and healthcare, but this does not happen automatically. All participants in healthcare must learn to be careful generators, skilled navigators, and discriminating users of information. They must approach information with a healthy scepticism about its accuracy. They must know how to filter information to avoid what has been called drinking from a fire hose (Friedman et al., 2016).



- Ask the right question
- Identify a source of information
- Evaluate the answer





**INFORMATION
OVERLOAD**

**Challenges in health
professions education**

**INFORMATION
OVERLOAD**

**FUTURE -
PROOFING
STUDENT**

**Challenges in health
professions education**

Tomorrow's Doctor





2028

**Medical
School**

2033

Postgraduate

2039

Practice Medicine

2074

**How to future-proof
Rory for practice in
2050 and beyond**



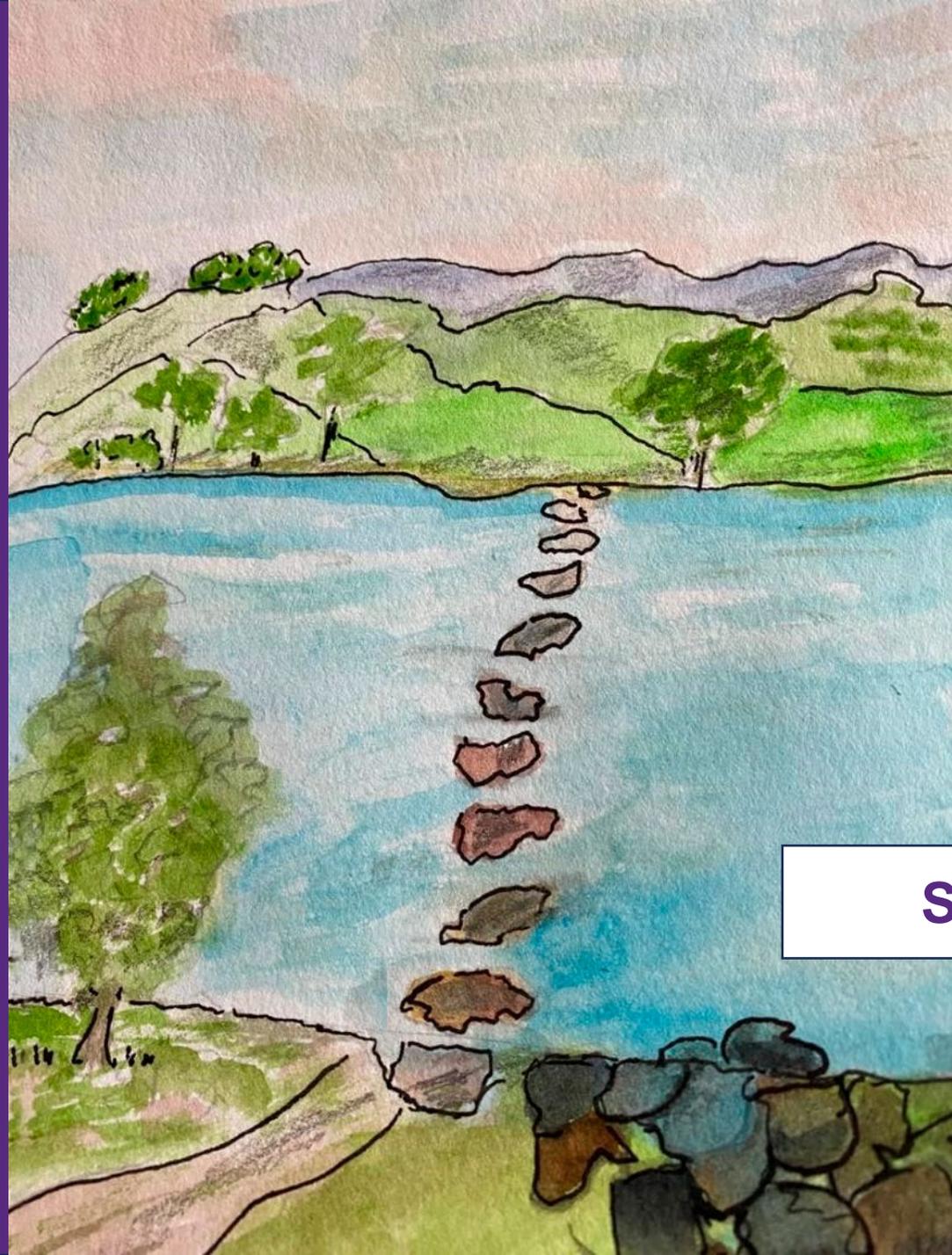
THE ROLES OF THE TEACHER



~~SELF-DIRECTED
LEARNING~~

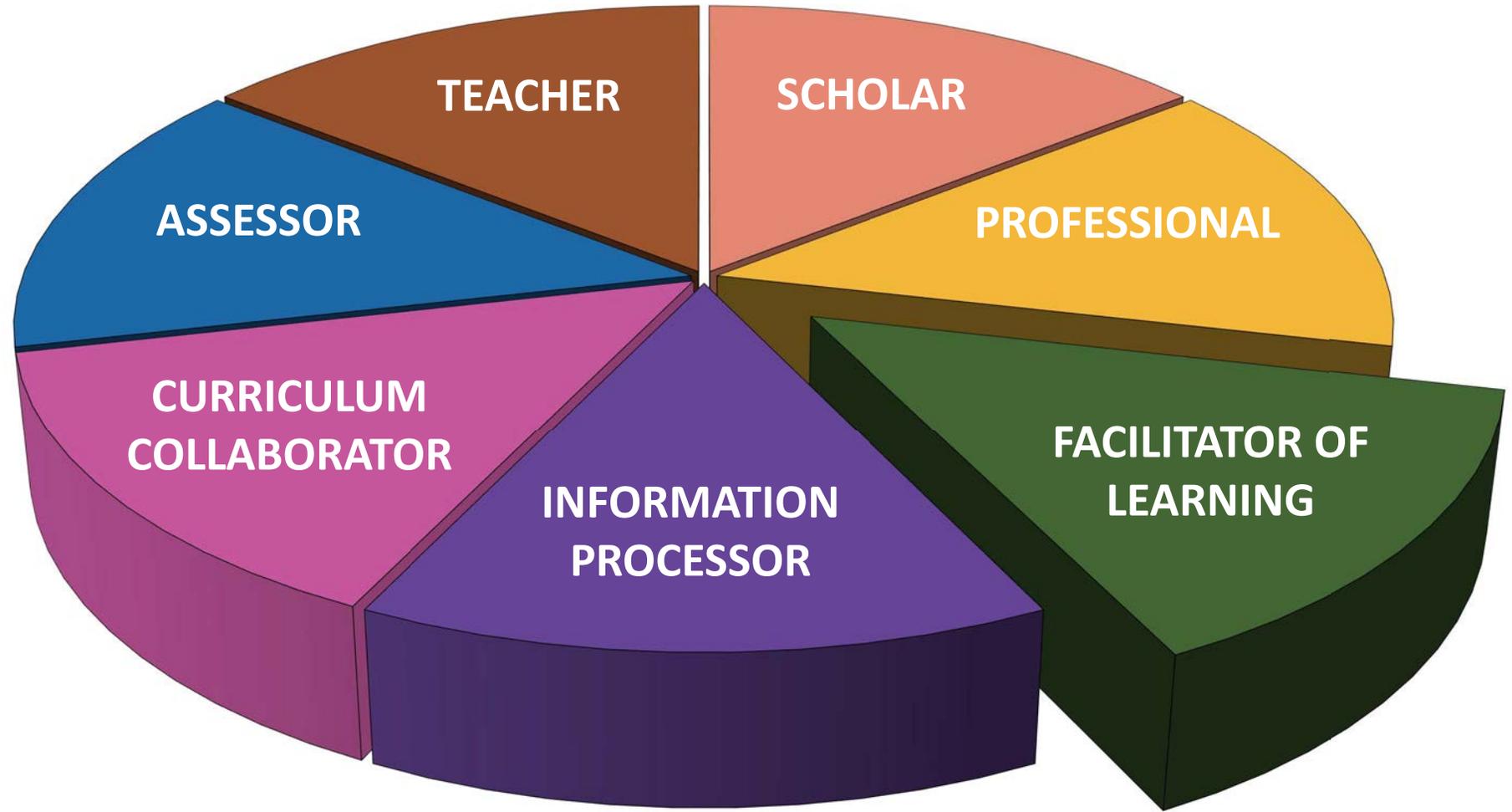
DIRECTED SELF-
LEARNING





Stepping Stones

THE ROLES OF THE STUDENT



Preparing for life-long learning

**Self-Regulation Theory:
Applications to medical education**

John Sandars
Timothy J Cleary

Develop self-
regulated learning

AMEE GUIDE
Theories in Medical Education

58

**Students take
control of their
own 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**



**INFORMATION
OVERLOAD**

**FUTURE -
PROOFING
STUDENT**

**Preparation for
life-long learning**

**Challenges in health
professions education**

**INFORMATION
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**FUTURE -
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STUDENT**

**AN
AUTHENTIC
CURRICULUM**

**Challenges in health
professions education**



THE LANCET

Health professionals for a new century: transforming education to strengthen health systems in an interdependent world



Julio Frenk*, Lincoln Chen*, Zulfiqar A Bhutta, Jordan Cohen, Nigel Crisp, Timothy Evans, Harvey Fineberg, Patricia Garcia, Yang Ke, Patrick Kelley, Barry Kistnasamy, Afaf Meleis, David Naylor, Ariel Pablos-Mendez, Srinath Reddy, Susan Scrimshaw, Jaime Sepulveda, David Serwadda, Huda Zurayk

Executive summary

Problem statement

100 years ago, a series of studies about the education of health professionals, led by the 1910 Flexner report, sparked groundbreaking reforms. Through integration of modern science into the curricula at university-based schools, the reforms equipped health professionals with the knowledge that contributed to the doubling of life span during the 20th century.

By the beginning of the 21st century, however, all is not well. Glaring gaps and inequities in health persist both within and between countries, underscoring our collective failure to share the public health advances equitably. At the same time, new infectious diseases and

Redesign of professional health education is necessary and timely, in view of the opportunities for mutual learning and joint solutions offered by global interdependence due to acceleration of flows of knowledge, technologies, and financing across borders, and the migration of both professionals and patients. What is clearly needed is a thorough and authoritative re-examination of health professional education matching the ambitious work of a century ago.

That is why this Commission, consisting of professional and academic leaders from 100 countries, has been convened to examine the

Lancet 2010; 376: 1923-58

Published Online
November 29, 2010
DOI:10.1016/S0140-6736(10)61854-5

See [Comment](#) pages 1875

Professional education has not kept pace with these challenges, largely because of fragmented, outdated, and static curricula that produce ill-equipped graduates.

Frenk et al., Education of Health Professionals for the 21st Century.

Lancet 2010; 376: 1923-58

Authentic curriculum

From ivory tower to the real world

Learners develop the ability to perform in the workplace as a doctor.



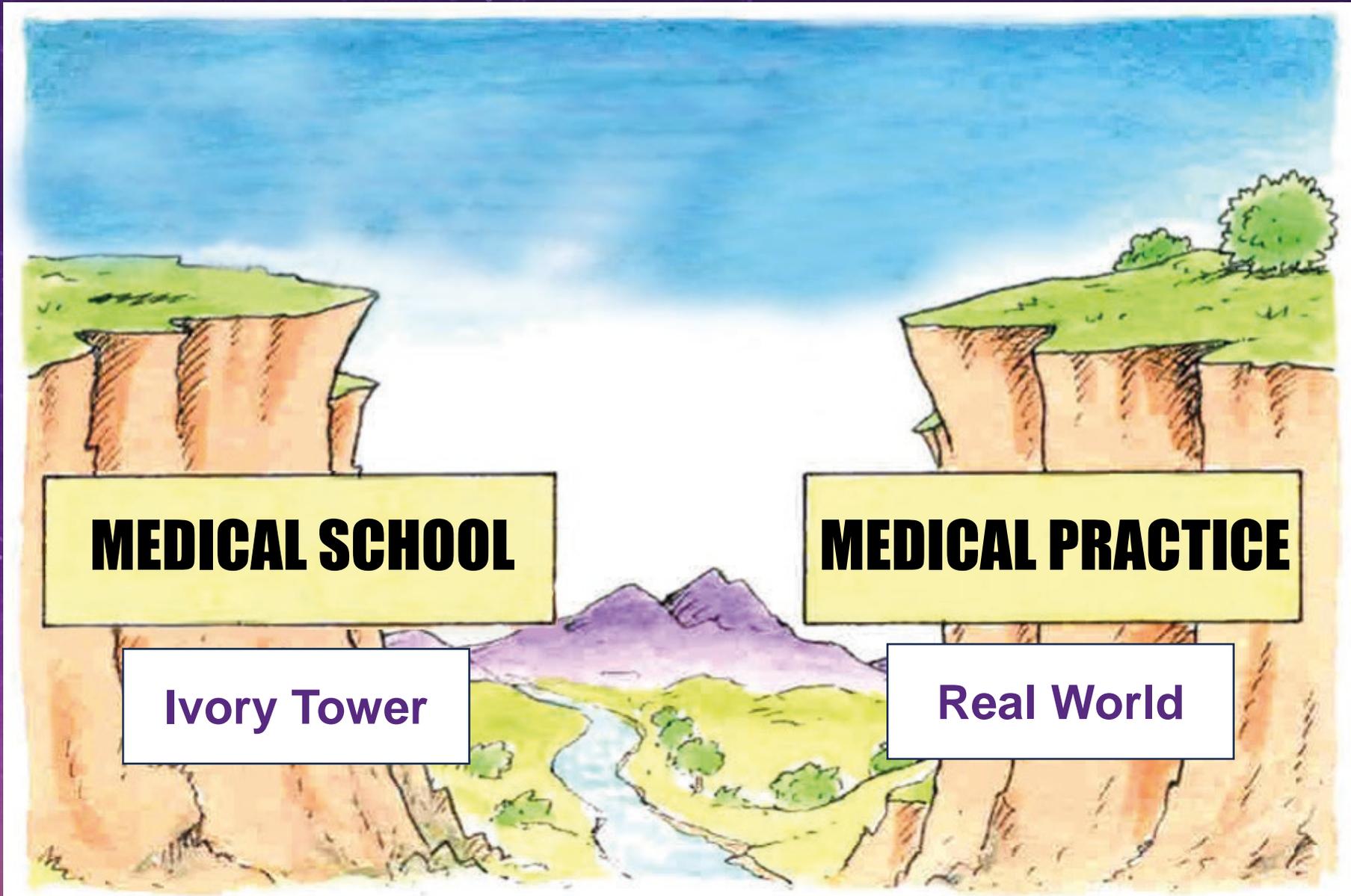
VAN MORRISON

Ivory Tower

1986

“Ivory Tower”
Van Morrison (1986)



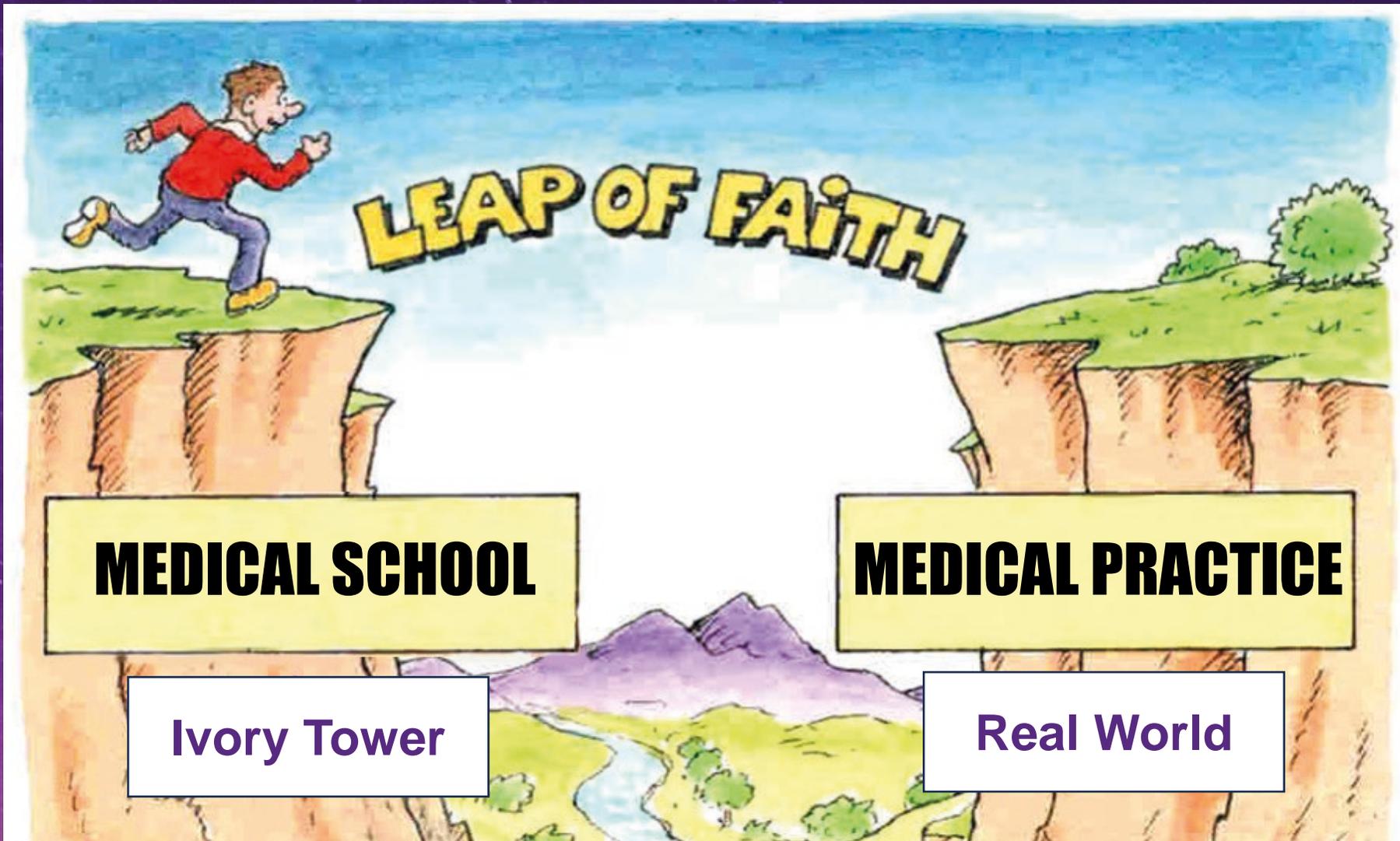


MEDICAL SCHOOL

Ivory Tower

MEDICAL PRACTICE

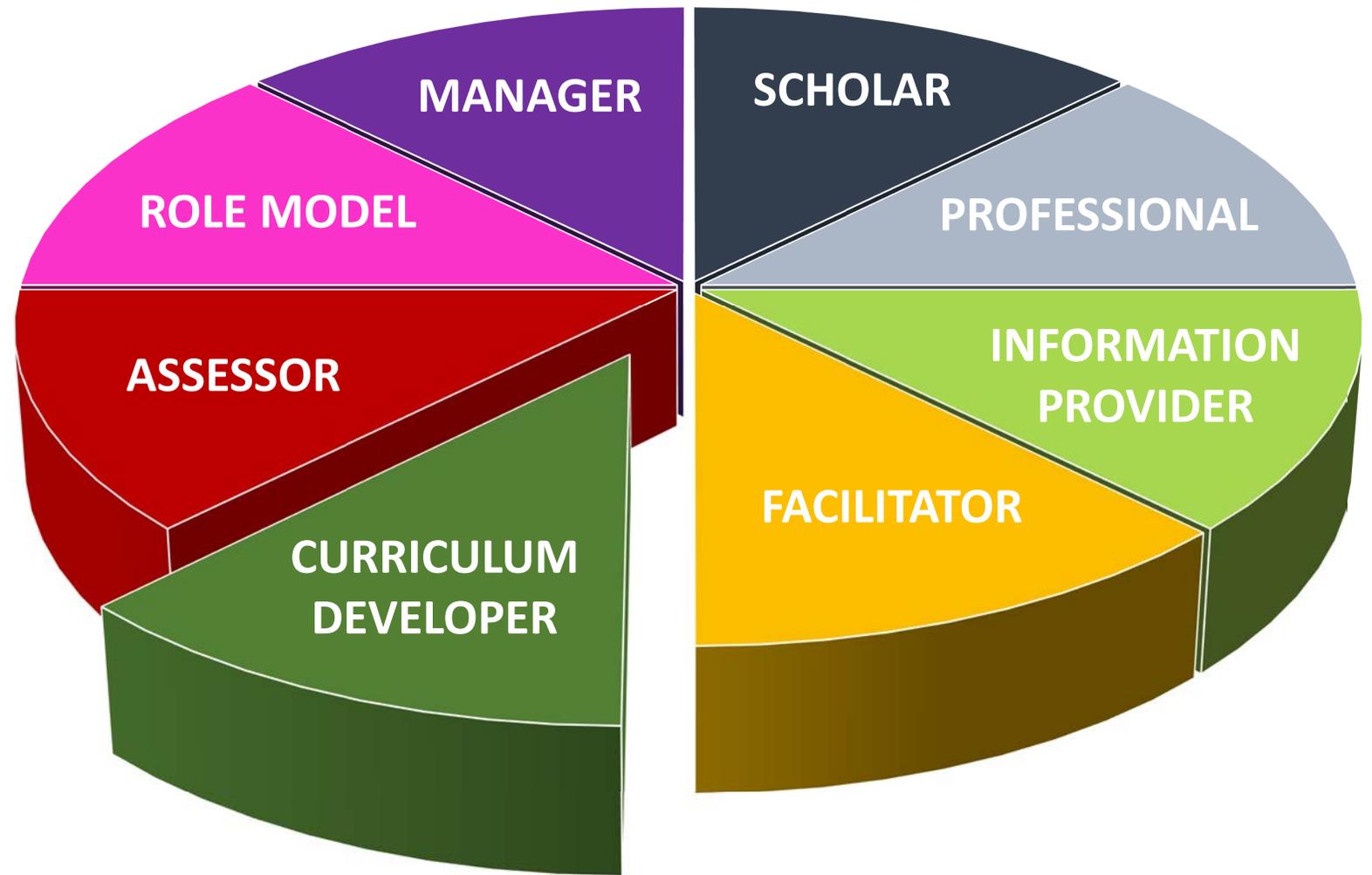
Real World



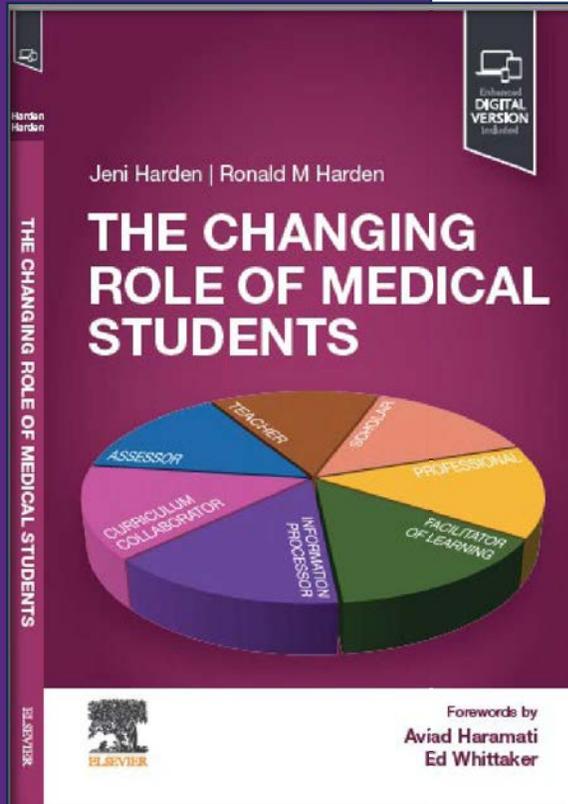
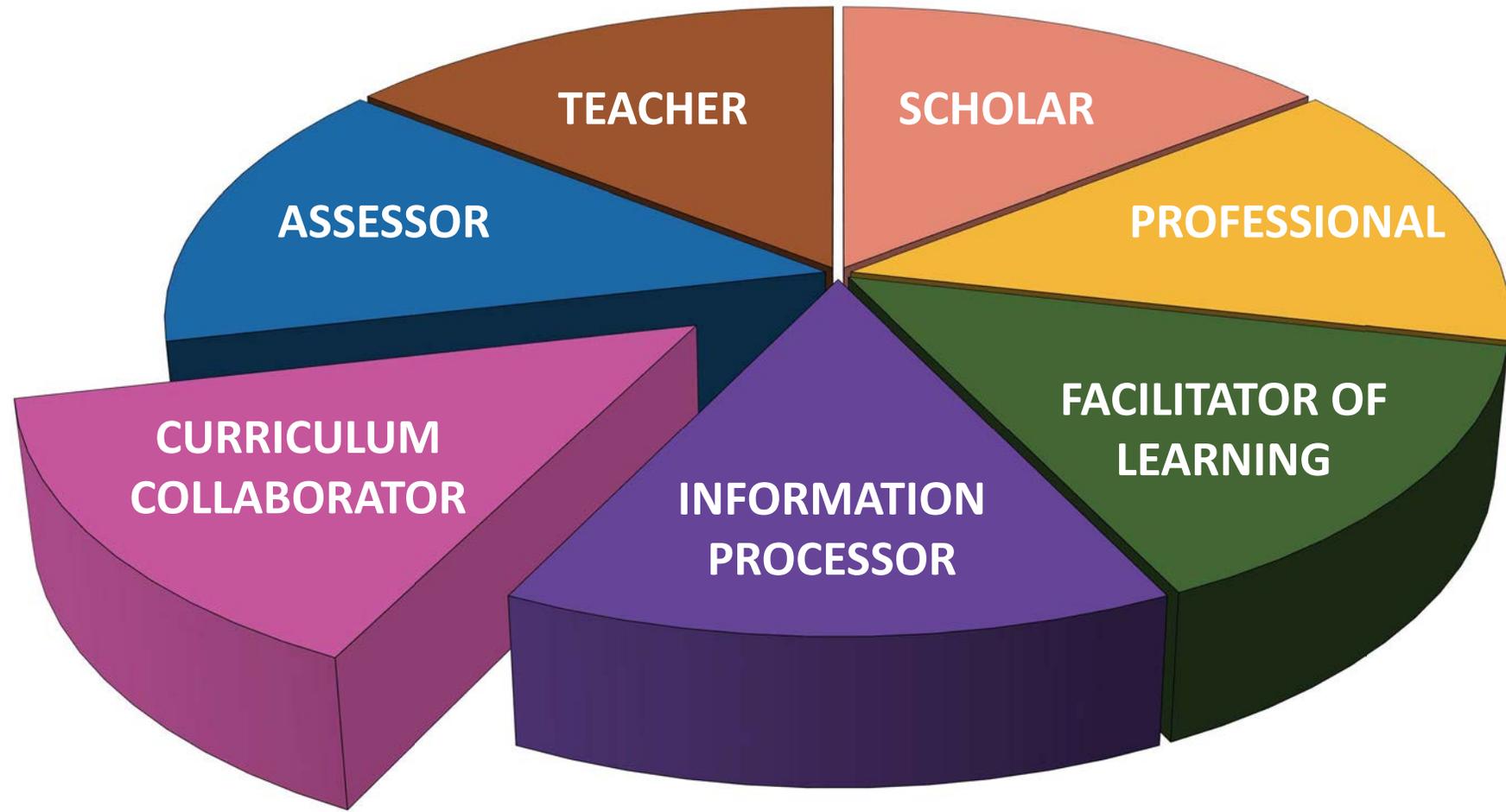
AUTHENTIC CURRICULUM

THE ROLES OF THE TEACHER

AUTHENTIC CURRICULUM



THE ROLES OF THE STUDENT



The weekly magazine
for higher education



**Kids Company
research was
'misportrayed'** 6

www.timeshighereducation.com
Twitter: @timeshighered

T H E

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HIGHER
EDUCATION

Faithless faculties
What makes scientists
so secular? 8

The hole in your bagel
Lunchtime let-down is
more than gustatory 10

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fare as journalists? 36

**Useful
pairs of
hands?**

The rise of
students as
curriculum
consultants

51 £3.50
17-23
December 2015
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9 770049 592136



PERSONAL VIEW

Perspectives of a 2nd-year medical student on 'Students as Partners' in higher education – What are the benefits, and how can we manage the power dynamics?

Sharan J. Kapadia

School of Medicine, Imperial College London, London, UK

ABSTRACT

The 'Students as Partners' model has been redefining the way we see student-staff relationships in Higher Education. In a world where hierarchical teaching and learning has dominated for decades, this concept has been refreshing. I have seen the benefits first-hand, having participated in a 2-week student-staff collaboration to redesign the year-one medical curriculum at the Imperial College School of Medicine. However, inherent to such partnerships can be imbalanced power dynamics, which may pose a barrier and prevent the project from achieving its potential. The sources and impacts of these power dynamics are complex and the solutions multi-faceted. In our project, these imbalances of power were mitigated because the correct steps were taken both by the educators, as well as by the organisation. We produced outputs that led to significant change in the curriculum, in the short space of 2 weeks. I attribute this largely to the careful management of power dynamics throughout. In the current milieu of COVID-19, student-staff collaboration will be a valuable source of research; mitigating the impacts of power dynamics will undoubtedly improve productivity and motivation.

'Students as Partners?'

This might raise some eyebrows! After all, aren't teachers there to teach, and students there to learn? This might raise some eyebrows! After all, aren't teachers there to teach, and students there to learn? This might raise some eyebrows! After all, aren't teachers there to teach, and students there to learn?

**“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

COURSE ON EDUCATING PATIENTS ABOUT PHYSICAL ACTIVITY

Medical School, University of Edinburgh

Teaching Matters blog
Promoting, discussing and celebrating teaching at The University of Edinburgh

THE UNIVERSITY of EDINBURGH

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24TH JANUARY 2019

A student partnership project to enhance curriculum development in medical education



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Contribute to Teaching

Collaboration between teachers & students in developments of:

- Course content
- Learning resources
- Learning approaches

Staff-student partnership to develop authentic PBL case - Keele University



Fejiro Okagbare, Year 4 Keele medic
Alexandra Ashaye, Year 3 Keele medic
Karen Adams and Audrey Skidmore (faculty)

- 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)

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**FUTURE -
PROOFING
STUDENT**

**AN
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**Challenges in health
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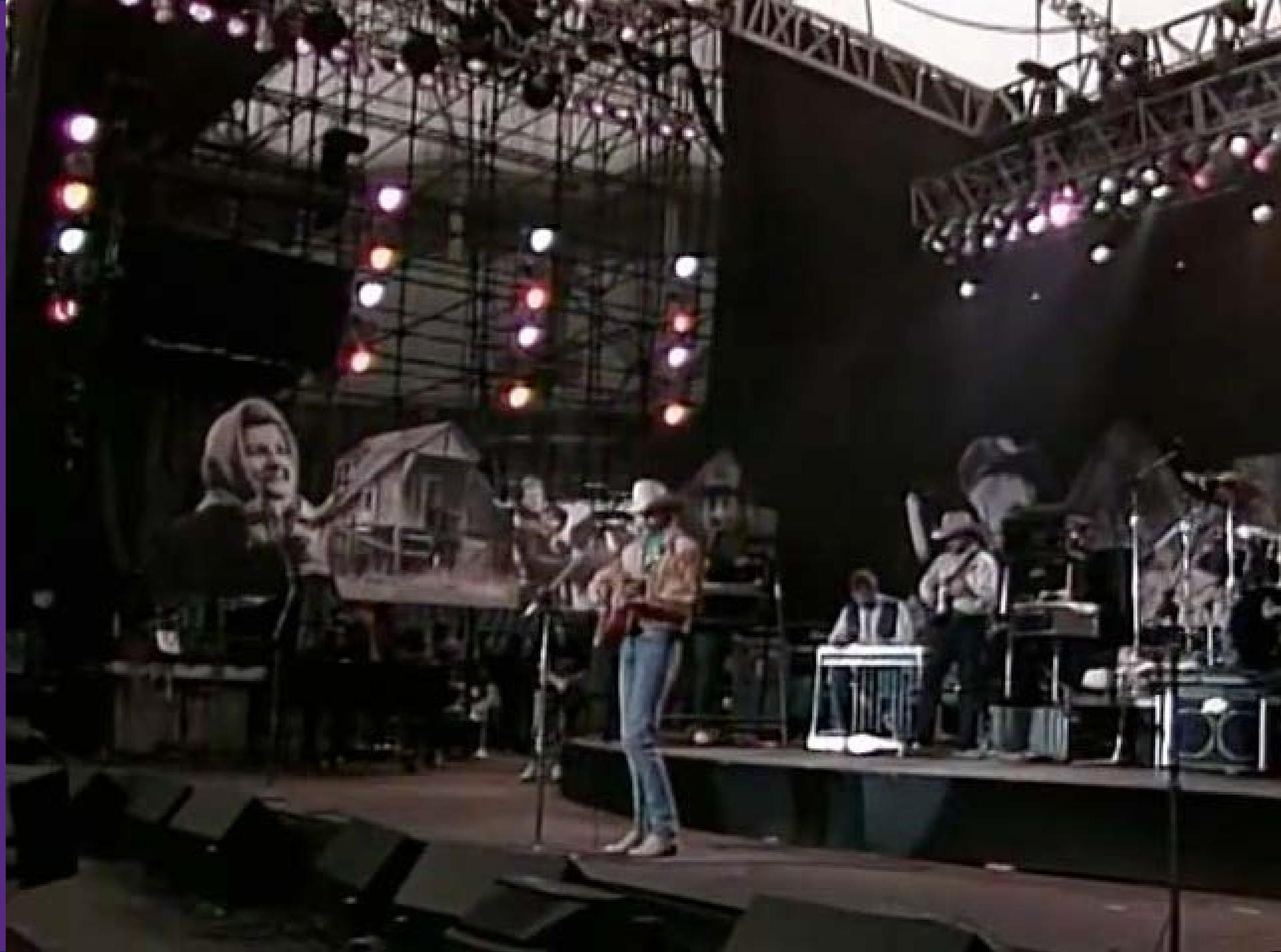
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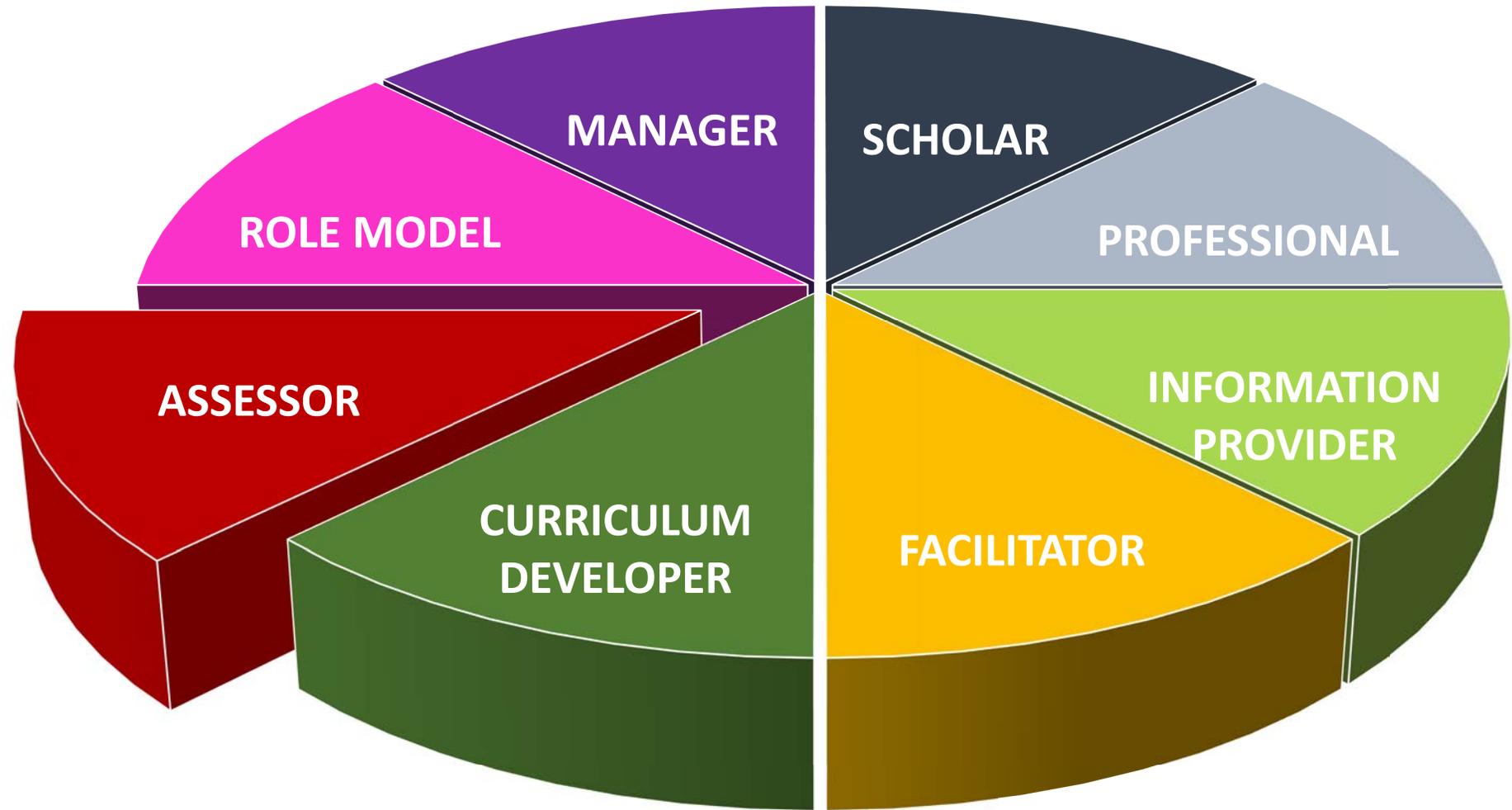
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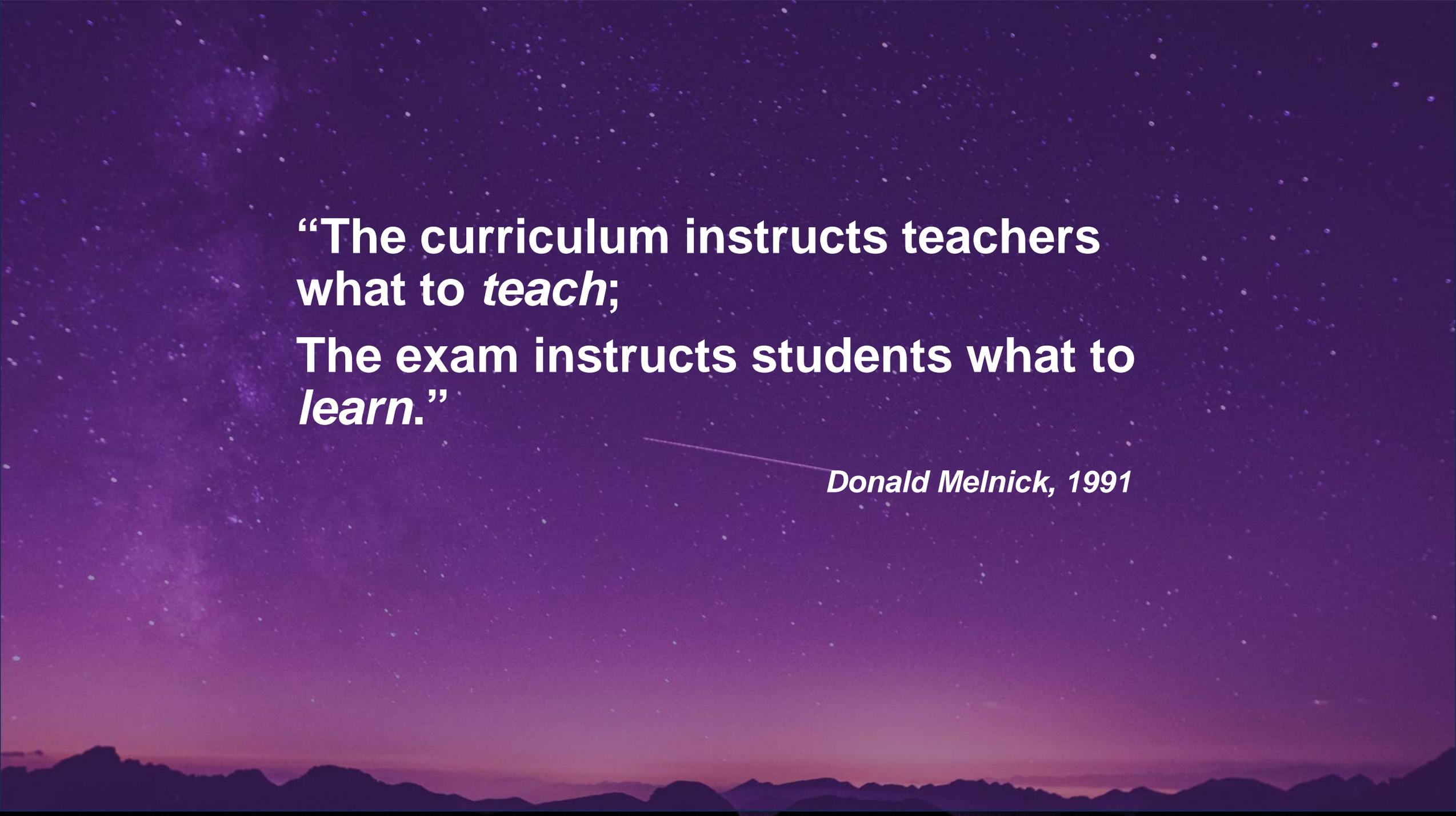
**Challenges in health
professions education**

**AUTHENTIC
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THE ROLES OF THE TEACHER

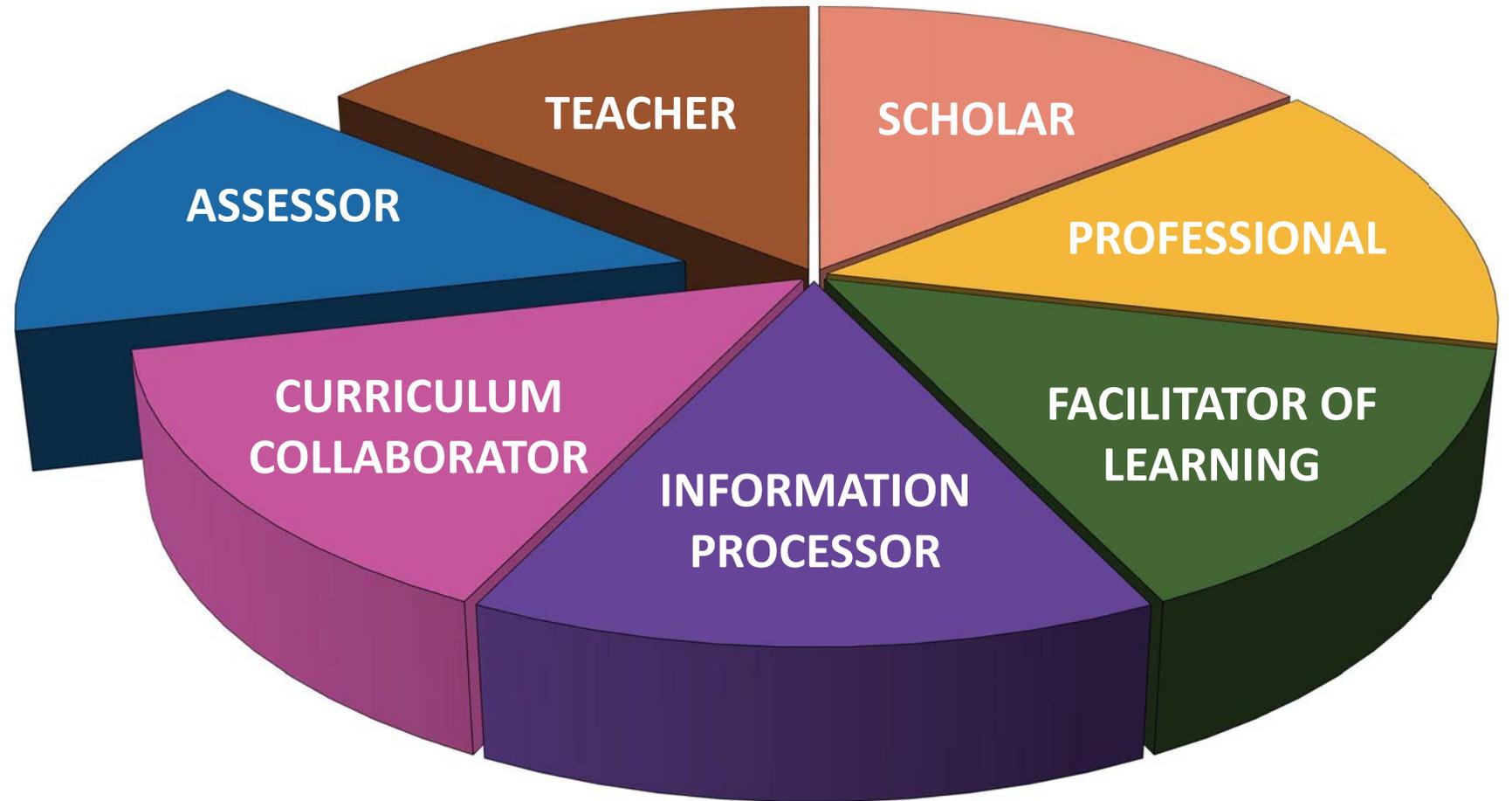




**“The curriculum instructs teachers
what to *teach*;
The exam instructs students what to
learn.”**

Donald Melnick, 1991

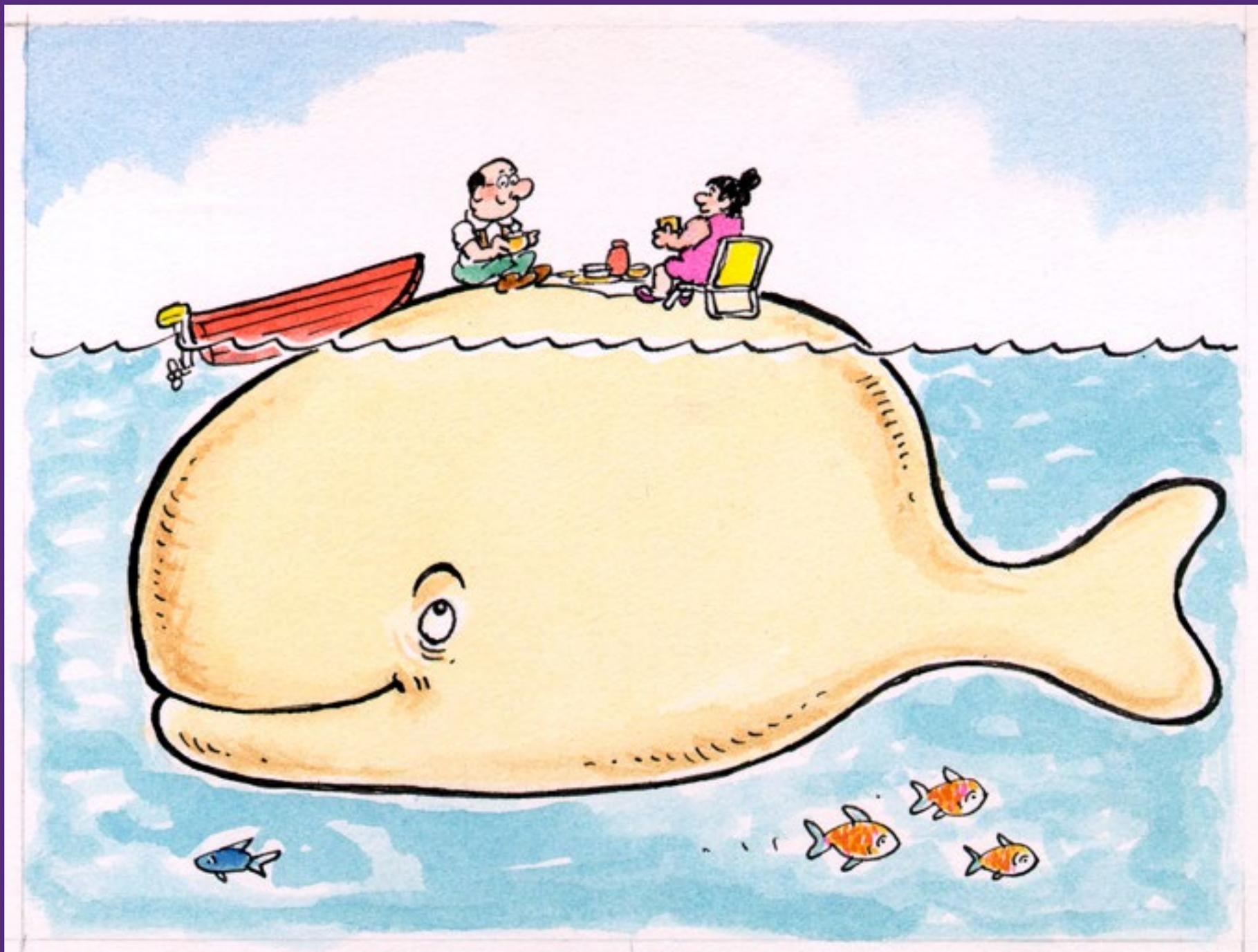
THE ROLES OF THE STUDENT

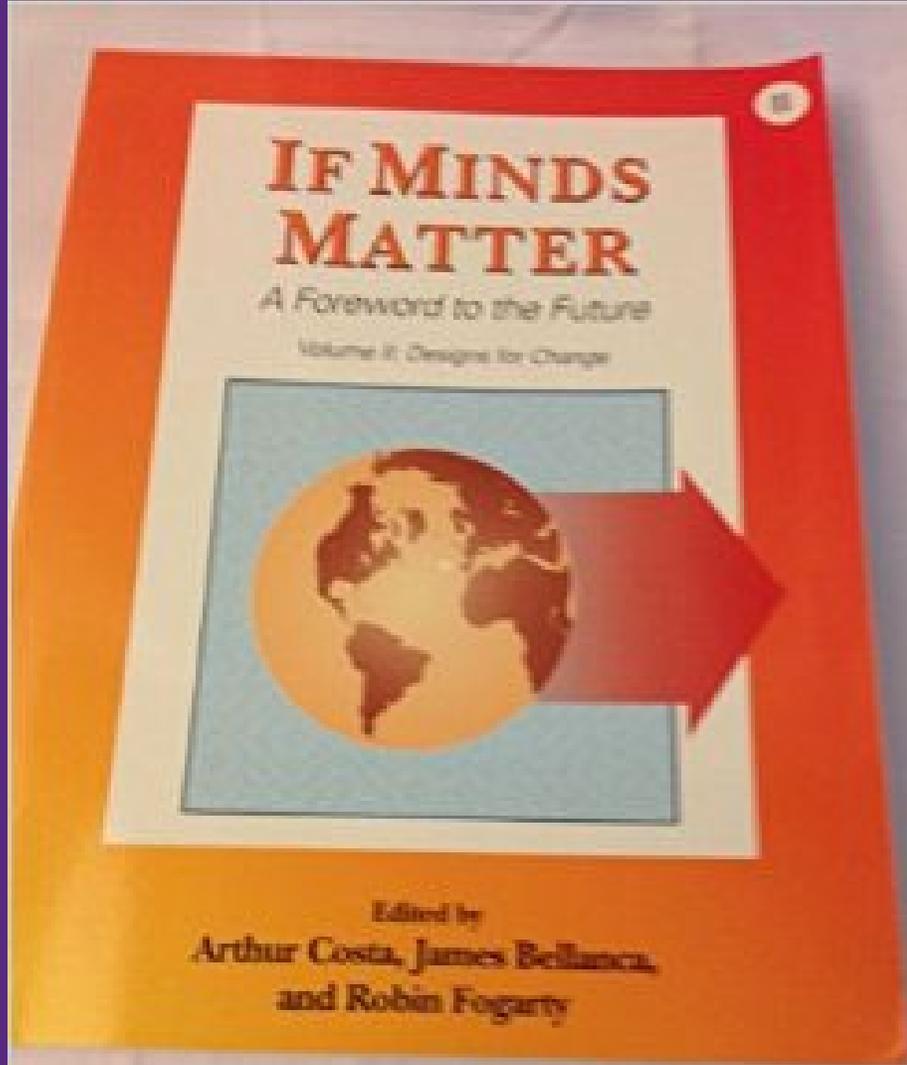


STUDENTS AS ASSESSORS OF COMPETENCE

- 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)

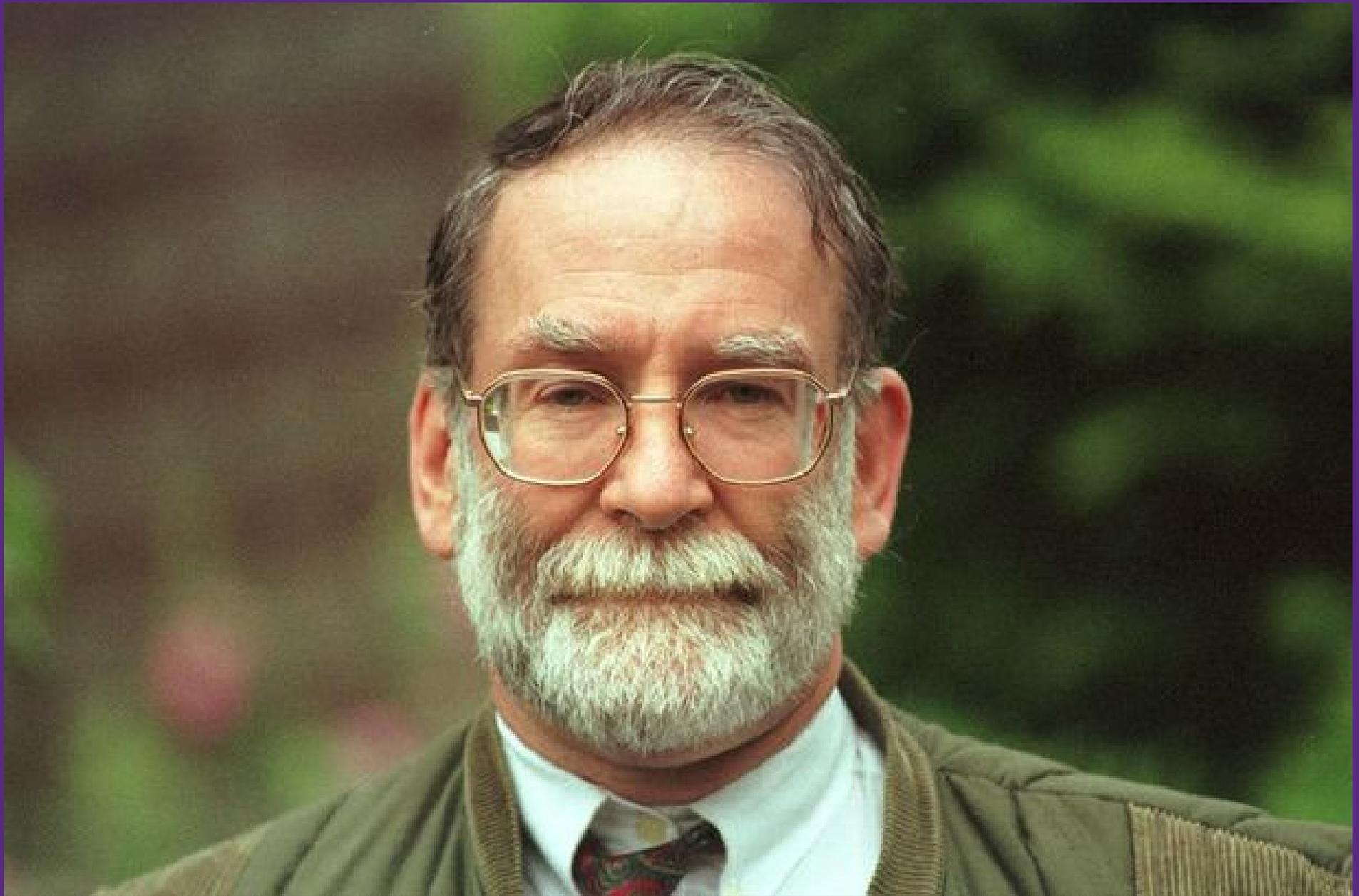
Reassessing assessment.

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**



Dr. Harold Shipman

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**FUTURE -
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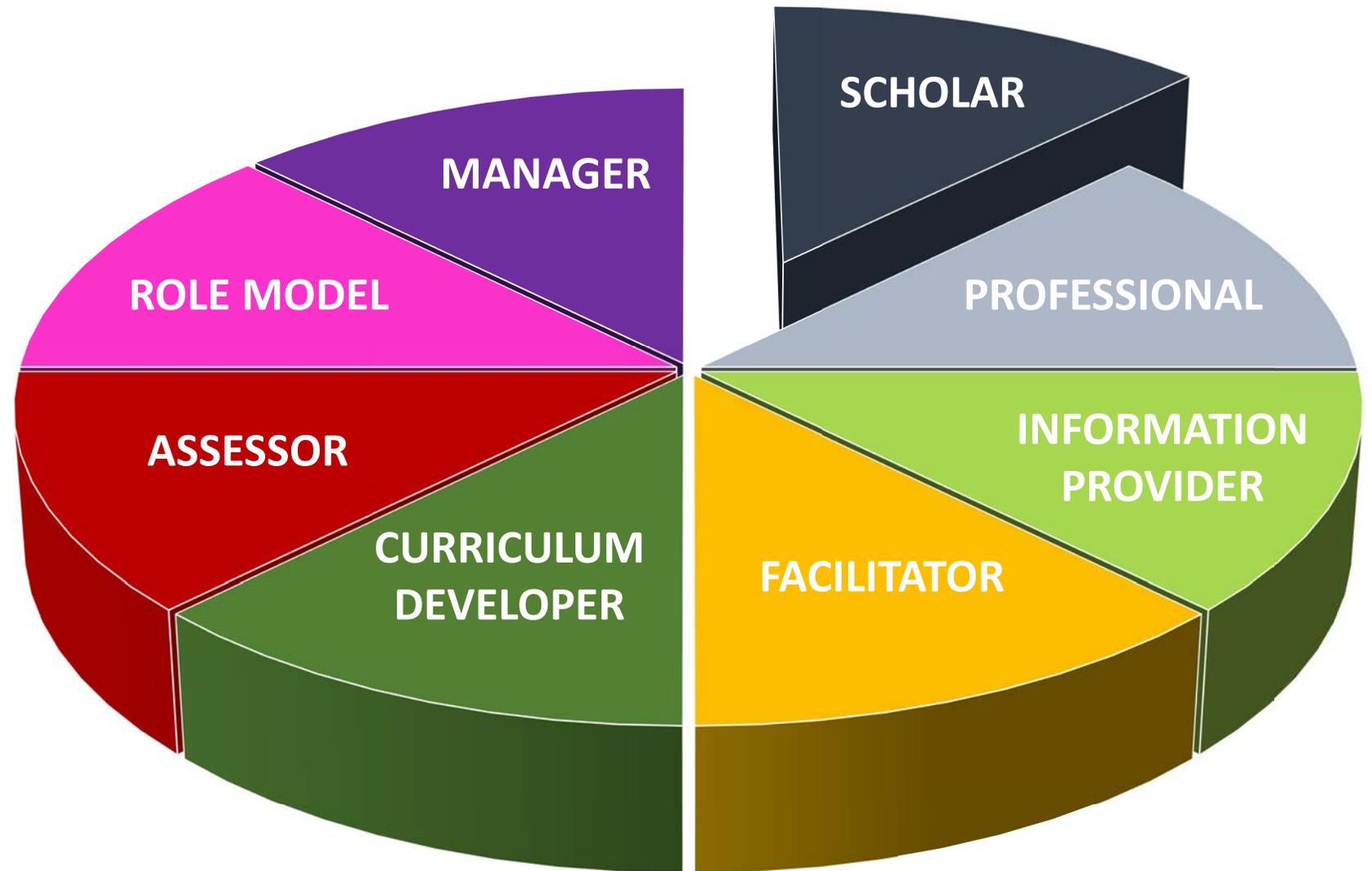
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**SCHOLARSHIP
IN EDUCATION**

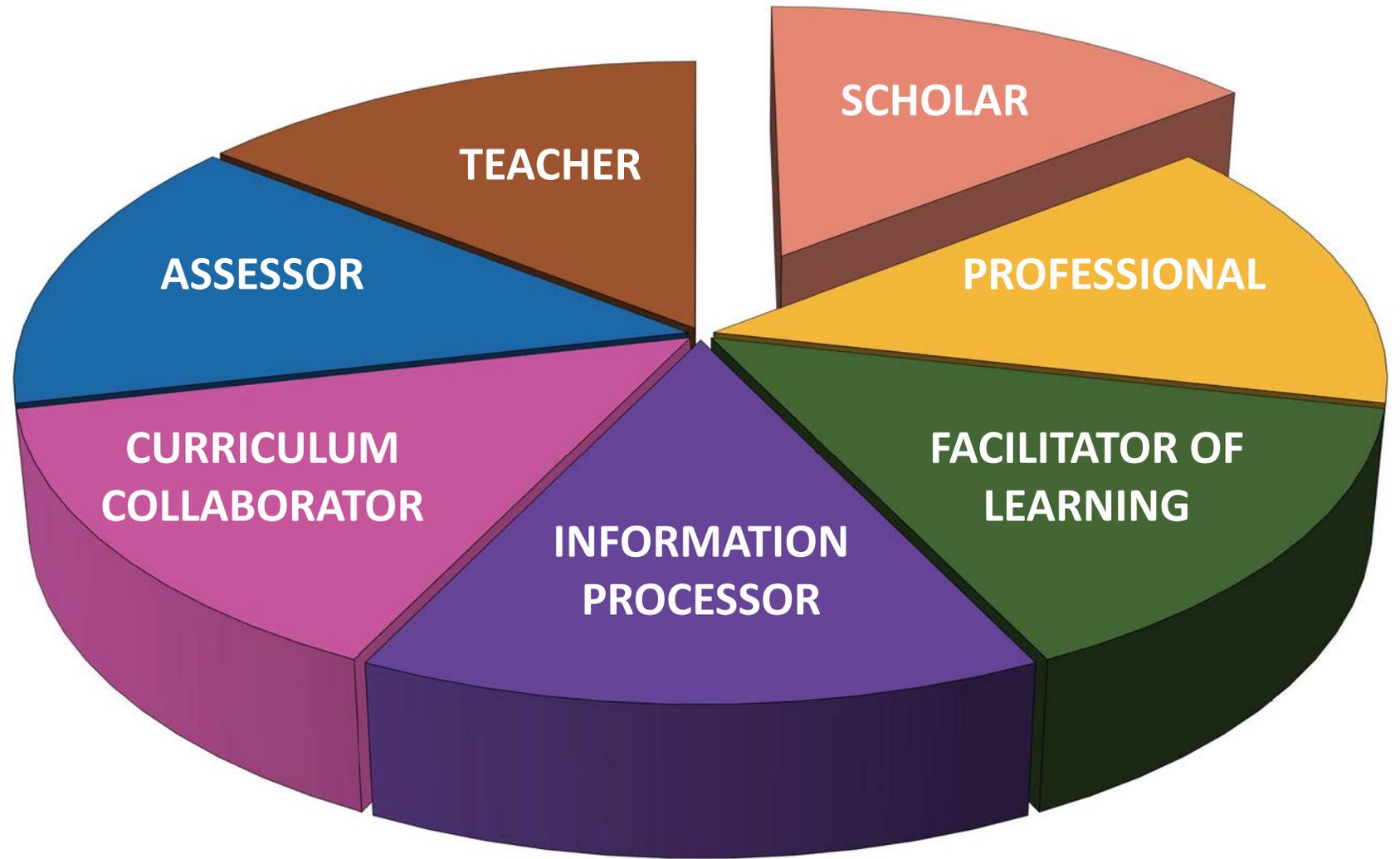
THE ROLES OF THE TEACHER



THE TEACHER AS A SCHOLAR

- Reflect on teaching
- Review evidence
- Research
- Innovate
- Communicate

THE ROLES OF THE STUDENT

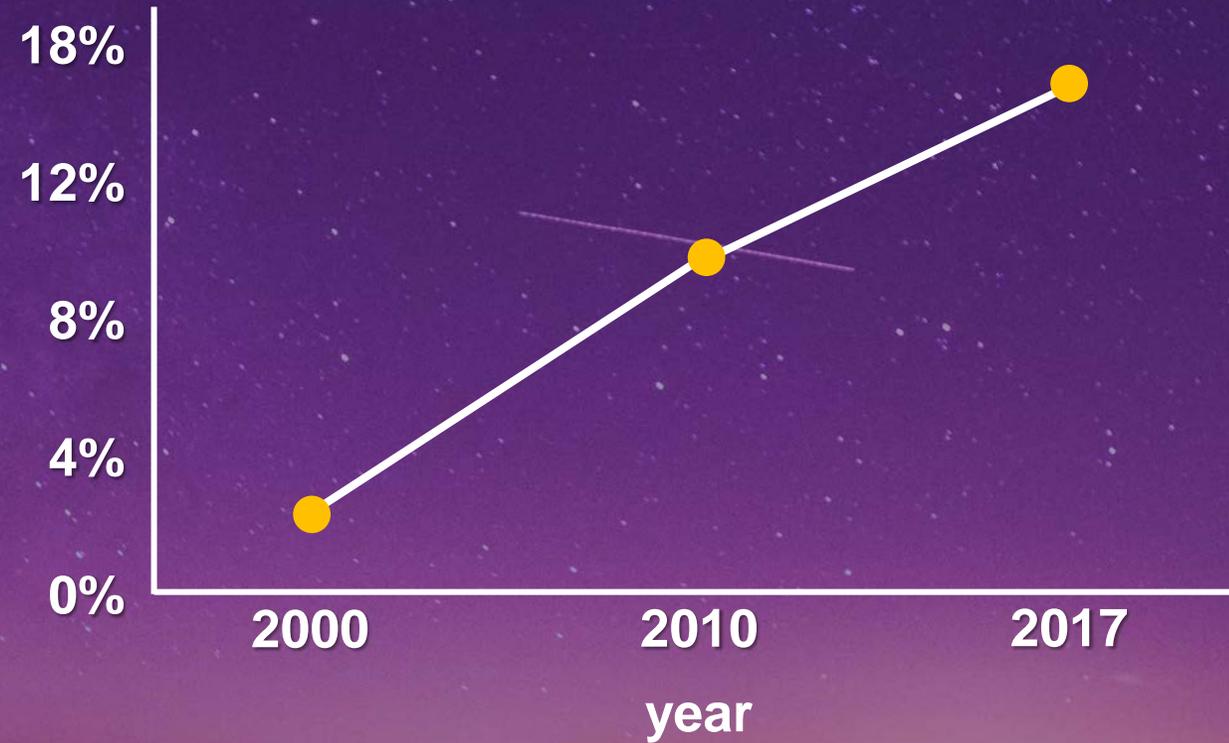


THE STUDENT AS A SCHOLAR

- Reflect on teaching
- Review evidence
- Research
- Innovate
- Communicate

Papers published in Medical Teacher with a student as co-author

Student as co-author



FUTURE -
PROOFING
STUDENT

INFORMATION
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IMPLICATIONS FOR TEACHERS & STUDENTS

Challenges in health
professions education

AN
AUTHENTIC
CURRICULUM

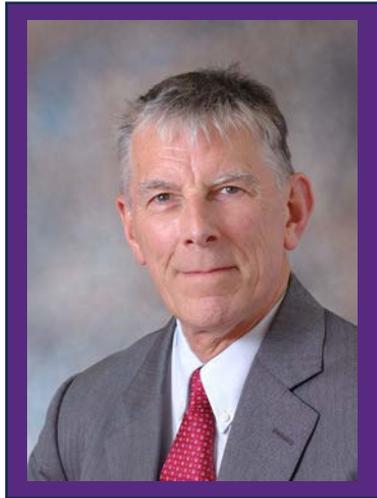
The changing roles of teachers & students

SCHOLARSHIP
IN EDUCATION

AUTHENTIC
ASSESSMENT



*Teaching Excellence Academy for
Collaborative Healthcare*



Ronald M Harden

OBE MD FRCP(Glas) FRCS(Ed) FRCPC
Editor-in-Chief Medical Teacher
Emeritus Professor of Medical Education,
University of Dundee, UK

The Richard C. Vari, PhD Endowed Lecture

October 30th 2023

**The changing role of
teachers and students
of the future**



Dead Poets Society (1989), Touchstone Pictures

ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT

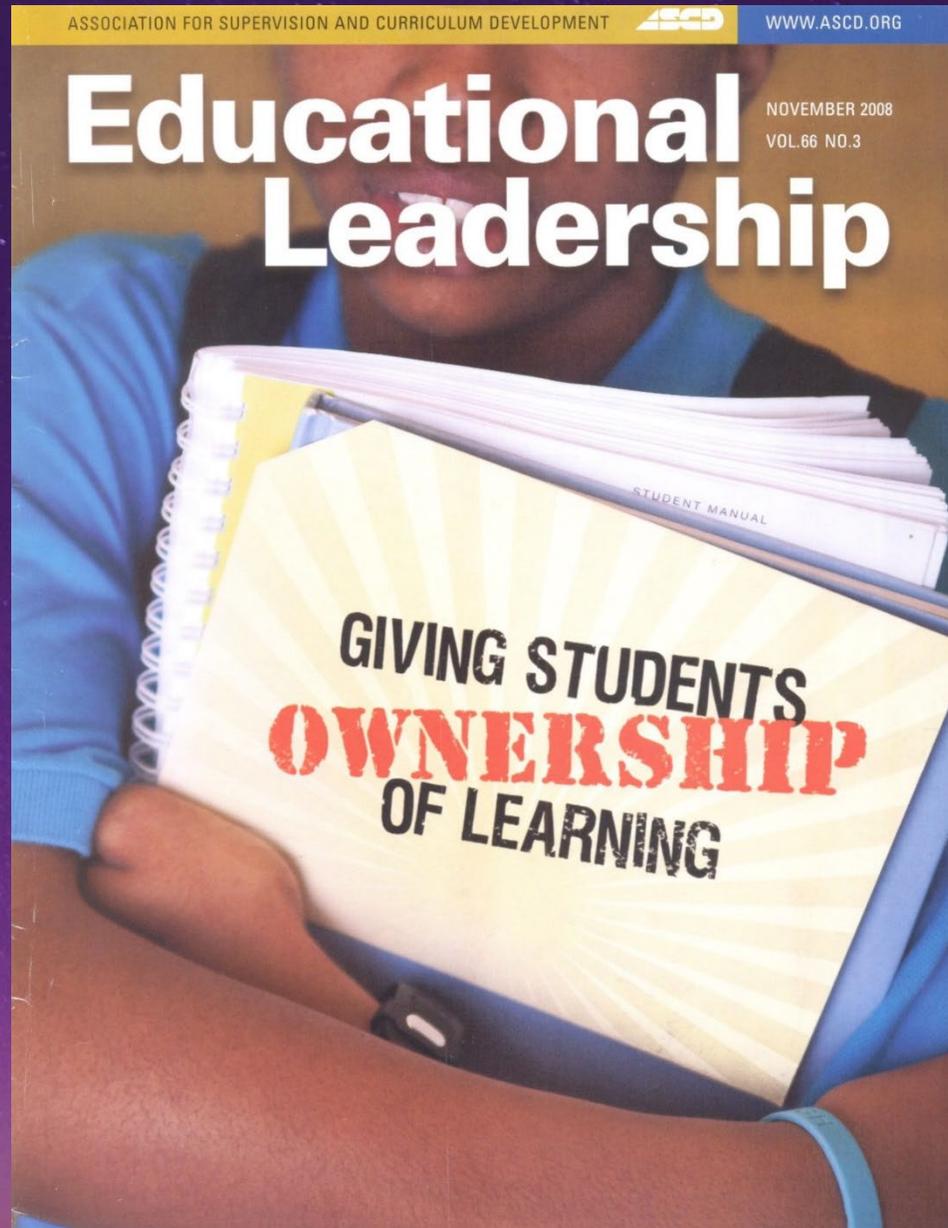


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Educational Leadership

NOVEMBER 2008

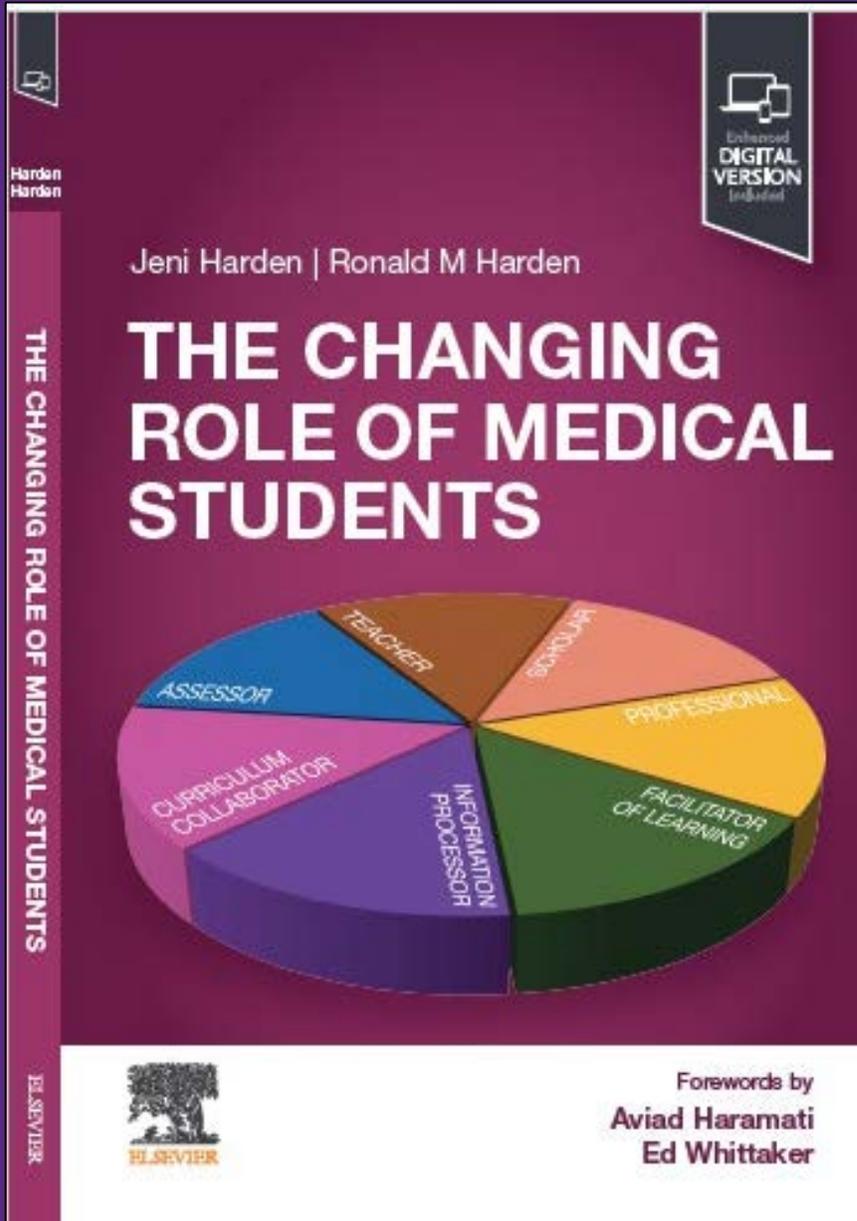
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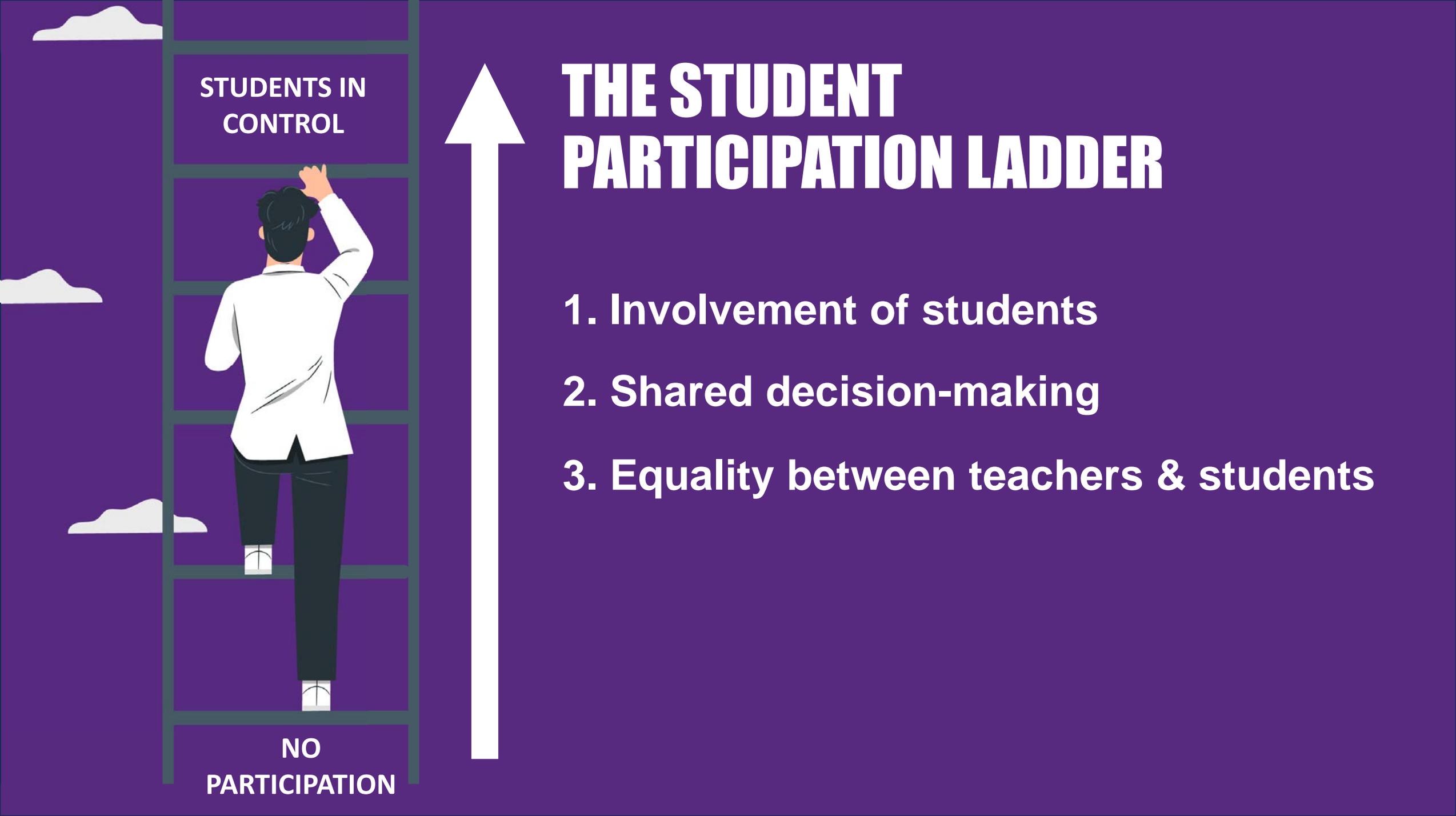
A THRESHOLD CONCEPT IN MEDICAL EDUCATION



The student as
a partner



The student
participation
ladder

A conceptual diagram on a purple background. On the left, a green ladder with five rungs is shown. A person in a white jacket and dark pants is climbing the ladder, reaching for the top rung. To the right of the ladder is a large white arrow pointing upwards. The top of the ladder is labeled 'STUDENTS IN CONTROL' and the bottom is labeled 'NO PARTICIPATION'. To the right of the arrow, the title 'THE STUDENT PARTICIPATION LADDER' is written in large white letters, followed by a numbered list of three items: '1. Involvement of students', '2. Shared decision-making', and '3. Equality between teachers & students'.

**STUDENTS IN
CONTROL**

THE STUDENT PARTICIPATION LADDER

- 1. Involvement of students**
- 2. Shared decision-making**
- 3. Equality between teachers & students**

**NO
PARTICIPATION**

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AN OPTIMIST'S GUIDE TO THRIVING
IN THE AGE OF ACCELERATIONS

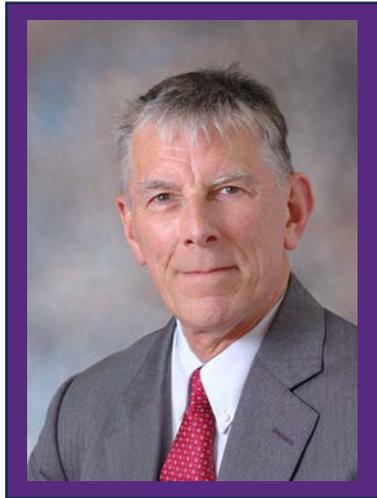
Thomas L.
Friedman

'A master class'
THE NEW YORK TIMES





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Ronald M Harden

OBE MD FRCP(Glas) FRCS(Ed) FRCPC
Editor-in-Chief Medical Teacher
Emeritus Professor of Medical Education,
University of Dundee, UK

The Richard C. Vari, PhD Endowed Lecture

October 30th 2023

**The changing role of
teachers and students
of the future**



Thank you!