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Applying the Science of Learning: a New Challenge in Nursing Education

Thomas K.S. Wong

Hong Kong

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Higher education is not just about the development, dissemination and application of knowledge. It is not just about advancing the frontiers of knowledge through certain forms of research that happen to be valued by the Research Assessment Exercise. It is not just about enabling graduates to be more employable and get better jobs with higher pay

Higher education, we concluded, should be a **life-changing and enhancing experience** for students and researchers of all ages. It should **help students value and capture a range of experiences** so as to better prepare them for an uncertain future. It should be **an experience that better equips graduates for life as well as work**; **help them appreciate their wider responsibilities and obligations to society** and help them develop personal and community values. (p.19)

Higher Education, More than a Degree : A Contribution to the Debate (Summary of a Consultation held at St. George's House, Windsor Castle, January 19-20, 2005), by St. George's House and The Council for Industry and Higher Education. Berkshire and London: Authors, 2005, 23 pp. ISBN 1-8742-2350-5



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5 s of modern universities

Separateness – separate selves

Scarcity perception

Seen only – material and measurable

Short term

Superiority over



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5 i of preferred universities

Interconnection of persons and groups

Intersufficiency of individuals and groups

Interweaving of the seen and unseen

Intergenerational time – long term

Intercollaboration politics and co-opetition

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Three concrete goals

- Letting everything about the university be a theater of learning and teaching;
- Seeing ourselves part of the natural order and learning from the earth itself how to conduct ourselves; and
- Learning to make the community, the agent of learning – whether the community is a class or a department or a division or a specially convened task force. (p.7)



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Higher education in the future

(Garrison & Anderson, 1999)*

Maximizes interaction

Focuses on meaningful learning outcomes

Provides flexible design

Sustains a distributed architecture

Upholds research in practice

Offers cost effective education

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Beaudoin, M.F. (2006). Perspectives on Higher Education in the Digital Age, Nova: new York.





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Entrepreneurship in Higher Education

(Kauffman Foundation, 2007)

- Fundamental purpose of learning:
Intelligibility
- By making the world and ourselves increasingly comprehensible and thereby manageable, education establishes a foundation for human growth, creativity, fulfillment and progress.



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Entrepreneurship in Higher Education

(Kauffman Foundation, 2007)

- Higher education must reflect the experience and conditions of contemporary life
- Teach students how to make sense of and how to affect the reality in which they will actually live.



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Entrepreneurship in Higher Education (Kauffman Foundation, 2007)

- Strength of higher education should be dynamism and adaptability, a capacity to address urgent, current questions of nature, society and human experience as well as classic ones.
- Innovation and improvement depend on intelligibility.



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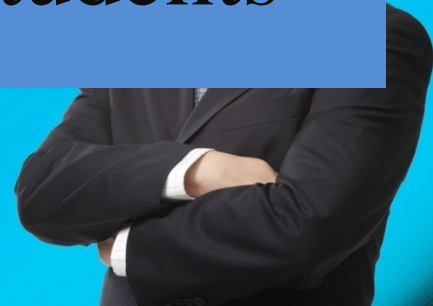
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Current Roadblocks

- Shortage of appropriate human resources and funding
- Rigid curriculum structure
- Traditional pedagogies and assessment methodology
- Lack of incentives
- Internal organizational structure
- Insufficient involvement of students

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Contemporary discourse

NATURE Magazine

Vol. 445 | 22 February 2007

Crossing boundaries,
hitting barriers

"If universities want to attract
innovative young researchers, they
should support integrative research"

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Contemporary discourse

NATURE Magazine

Vol. 447 | 7 June 2007

This is more than simply negotiating the different languages and ways of working -- it is about appreciating a breadth of knowledge in theory, approach and discourse.

A second challenge is the disjunct between, on one hand, rhetoric encouraging interdisciplinary research and, on the other, the lack of institutional structure and support for it.

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The University of the Future

Nature (2007), 446:7139, 949

- Question: *How does university serve a society in which people may have to retrain and recreate their careers throughout their adult lives?*
- Answer: *(1) Actively engaged in issues that concern them; (2) Relatively open to commercial influence; (3) fundamentally interdisciplinary in its approach to both teaching and research.*

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Interdisciplinary Education

- Philosophical change : from single-disciplinary to, multidisciplinary, interdisciplinary and trans-disciplinary focus
- Undergraduate students : experiences span more than one traditional discipline
- Graduate students : acquiring 'requisite' knowledge in one or more disciplines

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Interdisciplinary Education *(cont'd)*

- Learning principles to guide pedagogy
 - Contiguity effects
 - Perceptual-motor grounding
 - Dual code and multimedia effects
 - Spaced testing effects
 - Generation and organization effects
 - Coherence effects
 - Feedback effects (including negative suggestion effects)
 - Desirable difficulties
 - Explanation effects
 - Deep questions and cognitive disequilibrium
 - Discovery learning, self-regulated learning and anchored learning

Examples :

Coaching / nurturing
by masters

Web based learning

Simulation and
augmented reality
learning

Role-modelling

Co-operative
education



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Interdisciplinary Education (*cont'd*)

• Standards

- Learner-centred
- Learner controlled and paced
- Click vs brick
- Evidence-based vs tradition based education
- Outcome based
- Work based





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Learner Centred, Controlled and Paced Learning



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A call for Transformation of Nursing Education

- Educating Nurses: A Call for Radical Transformation (*Benner, P., Sutphen, M., Leonard, V. & Day, L. The Carnegie Foundation for the Advancement of Teaching, 2009*)
- The Future of Nursing: Leading Change, Advancing Health (*Committee on the Robert Wood Johnson Foundation Initiative at the Institute of Medicine, 2010*)
- WHO/PEPFAR Initiative on transformative scale of medical, nursing, and midwifery education (*WHO & PEPFAR, 2010*)

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The Qualifications Framework (QF) was officially launched on 5 May 2008. It aims to help Hong Kong people set clear goals and directions for continuous learning to obtain quality-assured qualifications. In the long run, it will help enhance the overall quality and competitiveness of the local workforce. The QF in Hong Kong is a seven-level hierarchy of qualifications covering the academic, vocational and continuing education sectors.

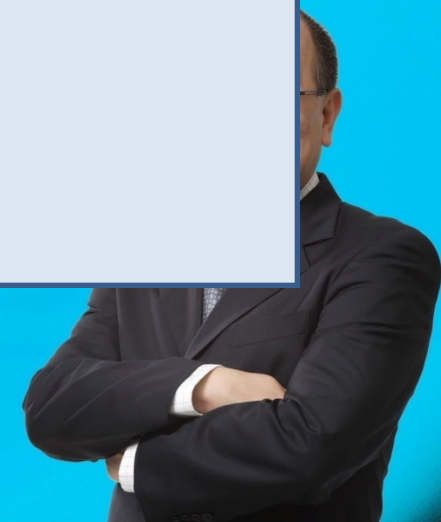
***Accreditation of Academic and Vocational
Qualifications Ordinance***

Ord. No. 6 of 2007

11 May 2007

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Qualifications Register

The Qualifications Register (QR) is a centralised online database of the QF recognised qualifications. Qualifications in the QR are ordered by levels in accordance with the Generic Level Descriptors. Typical examples of the titles for qualification at each level are as follows:

- **Level 1 Certificate**
- **Level 2 Certificate**
- **Level 3 Diploma**
- **Level 4 Higher Diploma, Associate Degree**
- **Level 5 Bachelor Degree**
- **Level 6 Master Degree, Postgraduate Certificate, Postgraduate Diploma**
- **Level 7 Doctoral Degree**



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Generic Level Descriptors

1. Knowledge and Intellectual Skills
2. Processes
3. Application, Autonomy and Accountability
4. Communications, IT and Numeracy

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Specification of Competency
Standards



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Level 5

Level	Generic Level Descriptors			
	Knowledge & Intellectual Skills	Processes	Application, Autonomy & Accountability	Communication, IT and Numeracy
5	<ul style="list-style-type: none"> - Generate ideas through the analysis of abstract information and concepts - Command wide ranging, specialised technical, creative and/or conceptual skills - Identify and analyse both routine and abstract professional problems and issues, and formulate evidence-based responses - Analyse, reformat and evaluate a wide range of information - Critically analyse, evaluate and/or synthesise ideas, concepts, information and issues - Draw on a range of sources in making judgments. 	<ul style="list-style-type: none"> - Utilise diagnostic and creative skills in a range of technical, professional or management functions - Exercise appropriate judgement in planning, design, technical and/or supervisory functions related to products, services, operations or processes. 	<ul style="list-style-type: none"> - Perform tasks involving planning, design, and technical skills, and involving some management functions - Accept responsibility and accountability within broad parameters for determining and achieving personal and/or group outcomes - Work under the mentoring of senior qualified practitioners - Deal with ethical issues, seeking guidance of others where appropriate. 	<ul style="list-style-type: none"> - Use a range of routine skills and some advanced and specialized skills in support of established practices in a subject/discipline, for example: - Make formal and informal presentations on standard/mainstream topics in the subject/discipline to a range of audiences - Participate in group discussions about complex subjects; create opportunities for others to contribute - Use a range of IT applications to support and enhance work - Interpret, use and evaluate numerical and graphical data to achieve goals/targets.

Level 4

Level	Generic Level Descriptors			
	Knowledge & Intellectual Skills	Processes	Application, Autonomy & Accountability	Communication, IT and Numeracy
4	<ul style="list-style-type: none"> - Develop a rigorous approach to the acquisition of a broad knowledge base, with some specialist knowledge in selected areas - Present and evaluate information, using it to plan and develop investigative strategies - Deal with well defined issues within largely familiar contexts, but extend this to some unfamiliar problems - Employ a range of specialised skills and approaches to generate a range of responses. 	<ul style="list-style-type: none"> - Operate in a range of varied and specific contexts involving some creative and non-routine activities - Exercise appropriate judgement in planning, selecting or presenting information, methods or resources - Carry out routine lines of enquiry, development of investigation into professional level issues and problems. 	<ul style="list-style-type: none"> - The ability to perform skilled tasks requiring some discretion and judgement, and undertake a supervisory role - Undertake self-directed and a some directive activity - Operate within broad general guidelines or functions - Take responsibility for the nature and quantity of own outputs - Meet specified quality standards - Accept some responsibility for the quantity and quality of the output of others. 	<ul style="list-style-type: none"> - Use a wide range of routine skills and some advanced skills associated with the subject/discipline — for example: - Present using a range of techniques to engage the audience in both familiar and some new contexts - Read and synthesise extended information from subject documents; organise information coherently, convey complex ideas in well-structured form - Use a range of IT applications to support and enhance work - Plan approaches to obtaining and using information, choose appropriate methods and data to justify results & choices - Carry out multi-stage calculations.



A call for Transformation of Nursing Education : Hong Kong

- New senior secondary (NSS) system
 - 3 years
 - Four core subjects: Chinese, English, Mathematics & Liberal Studies
 - Two or more elective subjects
 - Other learning experience e.g. music, physical education, ethics & religious studies
- Higher education reform
 - 4 years (5 years for nursing)
 - Outcome based learning
 - All rounded or holistic development of students
 - Inquiry based learning



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CHARACTERISTICS OF YOUNG PEOPLE IN HONG KONG



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Characteristics of young people

*From the eyes of Hong Kong
Adults (N=504)*

Positive (27.2%)

Negative (72.8%)



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香港青年協會(2010)社會人士眼中的青年



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POSITIVE VIEWS

- Smarter than the last generation
- More concerned about the society
- More aggressive
- Better Information Technology Skills
- More Creative



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NEGATIVE VIEWS

- Mentalities are not comprehensible
- Spoiled and dependent
- Indulgent in cyber world
- Have drug abuse problems
- Disengaging oneself
- Lack directions and objectives
- behaviour and conduct not up to expected standard

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HOW ADULTS RATE YOUNG PEOPLE'S PERFORMANCE & CONDUCT ?

	Rating (Passed mark=5)
Self-Confidence	5.25
Integrity	4.88
Eagerness to help Others	4.81
Industrious	4.72
Social morality	4.71
Punctuality	4.63
Politeness	4.62
Respect to others	4.40
Exert oneself	4.34
Sense of responsibility	4.04



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THREE LOWS PHENOMENON— THE HONG KONG CHILDREN SYNDROME

- Hong Kong Children
 - born in mid 1990 to 2000
 - from middle class family
 - spoiled
 - difficult to adapt to the environment
- **Three** lows phenomenon
 - low self-care ability
 - low emotion quotient
 - low adverse quotient

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博士吧(2010)香港逾三成中產“港孩”自理抗逆能力低.



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Effects of the three Lows Phenomenon

- Poor self-caring ability
- Inadequate problem-solving ability
- Low self-image
- Long term effect may lead to emotional problem, e.g. anxiety



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博士吧(2010)香港逾三成中產“港孩”自理抗逆能力低.



Some students' attitudes towards life

- Answer questions with perfunctory
- Lack independent views for values
- With dubious or speculative attitude to show sophistication
- Affected by the thoughts of speculations in society
- Do not understand the importance of different activities in life
- Blabber about knowledge and sway between opinions

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Some students' attitudes towards learning as observed at interviews

- lack the spirit and desire to pursue knowledge
- Lack serious learning attitudes
- Complacent and show off
- Please teachers by using “professional” presentation skill
- Ignore the importance of profound thinking
- Raise unrelated questions
- Give ignorant answers
- Pursue short term goals
- Score and certificate oriented



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曾慶宏(2009)孺子牛：大學生本該如此嗎？



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Low Language Proficiency

Reasons:

- Spend more time on Facebook or online messages rather than newspaper or books
- Use “online language” to communicate without paying attention to grammars and rhetoric
- Poor communication skills resulting from limited communication with others



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王永平(2010)香港大學生的質素

ENGLISH PROFICIENCY

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A study reveals that over 90% of the young people (age 12-29) wish to improve their fluency in English. Most of them :

- seldom communicate in English
- have no confidence in using English
- worry about making mistakes
- afraid of ridicules from others

香港青年協會(2010)青少年意見調查「用英文，青少年怕甚麼？」



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Attitudes towards the society

- Pay little attention to current issues or incidents in the society
- Lack international perspectives
- Materialistic & extravagant



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周八駿(2010)正確引導香港青年



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ATTITUDES TOWARDS THE SOCIETY

Polarized attitudes toward politics

- Some students play an active role in politics rationally or irrationally
- On the other hand, some students are totally indifferent to politics

焦述銘(2010) 大學生政治態度「冰火兩重天」



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CREATIVITY AND COMPETITIVENESS

From the survey (N=519) :

- Over 50% of the interviewees believe that Hong Kong people do not have enough crisis consciousness, 70% believe that the younger generation lack creativity and competitiveness as compared with the last generation
- Young people score the lowest mark in creativity. This has weakened their competitiveness



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Interpersonal relationship

- Make friends on-line
- Escape from the frustration in reality
- Lack communication skills and interpersonal relationship
- Have difficulties in making friends with the same and opposite sex.
- Indulge in Internet and has serious isolation problem.
- Introverted, shy, and do not know how to get along with others.

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Attitude towards materials

- Young people
 - Too materialistic
 - Lack self control
 - Shopaholic
 - Have financial and emotional problem
 - Lack communication with family members
- Parents
 - Too busy and have no time for children
 - Compensated by giving more pocket money or a visa card
 - One-child family
 - Spoil the children by material awards



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Education for the 21st Century

(Commissioned by UNESCO, 1995)

4 Pillars of Education

- *Learning to do*
- *Learning to know*
- *Learning to be*
- *Learning to live together*

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Our Initiatives

1. Strengthening educational resources and infrastructure, e.g.

- Wireless transmission
- Mobile computing
- Library without walls
- e-Platform: education, services and research

2. Training and retraining faculty staff

- Teaching without Powerpoint files
- Role of a Facilitator and coach
- Articulating experiential learning

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Our Initiatives

3. Making education and training appropriate and relevant to the needs of populations
 - Curriculum structure: generic and specific; progression based on mastery level; interdisciplinary/ trans-disciplinary approach
 - Clinical placement in all settings
 - Co-operative education
 - General education with a main focus on local communities e.g. Lingnan or Pearl River Delta region
 - Increase participation of students in committee work



Our Initiatives

4. Investing in innovative educational strategies, methodologies and technologies

- University as a communion of learning
- Inquiry based learning
- Coaching through case conference, practice under augmented reality
- Student labour programme followed by co-operative education scheme



Our Initiatives

5. Improving quality assurance and performance mechanisms
 - Educational effectiveness monitored by both students and faculty
 - Constant peer review (both local and international), public monitoring and professional accreditation
 - Increasing use of health outcome as a measurement of learning





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Our Initiatives

6. Ensuring that regulatory frameworks will create enabling conditions
 - Revisit the core competency
 - Seamless approach to nursing education



Transformative Learning

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Transformative Learning

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- Capacity to transform
- Making the world and ourselves more comprehensible
- Transform itself, others and collectively the system
- Means sustainability and growth



Transformative power of education

學生和教師，誰為大學之本？

——三談大學以「育人為本」

龔克

天津大學校長

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「學生和教師，誰為大學之本？」這個問題實在是難以回答，因為兩者都很重要。大概是因為難，所以常見「以學生為中心，以教師為主體」的含糊說法。但我認為，這個問題關係到大學為誰而辦（是為學生發展請教師，還是為教師發展招學生？）的根本問題，必須有個明確的說法。我要說，大學育人要以「學生為本」。

大學非有大樓之謂也 有大師(育人)之謂也

一定有人不同意這樣的說法，並以梅貽琦先生「大師」說為據：「所謂大學者，非有大樓之謂也，有大師之謂也。」這句話鮮明地講出了大學延攬「大師」的重要性，但並不能以此就延攬至「以教師為本」說。讓我們看看梅先生1931年12月3日到清華大學任校長當天，在全校大會上發表的就職演說的全文，就不難發現梅先生的原意為延攬大師是為了更好地培養人才。大學之所以為大學，全在於有沒有好教授。……我們的智識，固有賴於教授的教導指點，就是我們的精神修養，亦全賴有教授的inspiration。但是這樣的好教授，決不是一朝一夕所可羅致的。我們有願用儲蓄意延攬而

已。同時對於在校的教授，我們應該尊敬，這也是招致的一法。」在演講最後他還進一步明確了辦大學的目的：「我們做教師做學生的，最好最切實的救國方法，就是致力學術，造成有用人才，將來為國家服務。」通讀梅先生演講全文，對他的辦學理念管中窺豹式的理解自然不攻自破。清華大學一位教授解讀梅先生大師說時表達為「所謂大學者，非有大樓之謂也，有大師（育人）之謂也。」這個括弧注釋我以為是合梅先生原意的，只不過梅先生認為不言自明罷了。

合作和表達等等，而以為就是要學生幹活出文章，為自己的學術簡歷增添成果。

教師講課不以學生為本，教學是以教師為中心，不在重發學生學習「只顧「灌輸」，生怕講少了學生不知道，卻不知這種「好心」反而破壞了不少學生的學習興趣和激情。

所有這些，往往伴隨着學校乃至社會對於教師學術成就的片面期待，以及相應的評價和激勵政策。如果學校的社會以為「學術」比「學問」更重要，那也就無怪乎教師的工作中「失本」之現象大量出現了。其實，依梅先生之意，致力學術是為了培養學生的，在學生的成長中教師自身才得以發展。

以發表論文「論英雄」是捨本逐末 搞師資發展不可離開「育人」之本

講「以學生為本」實際上就是講「育人為本」，其中絕沒有忽視教師重要性的意思。因為教師是育人之人，大學之水準高低，與其教師的學術水準和育人態度是緊密而且「正相關」的。現在我國大學的不足，除了體制

機制上的問題之外，最要緊的就是缺乏優秀師資。因此，我們把培養、引進和用好師資，作為當前學校發展的「重中之重」。現在政府和學校都推出了許多有力的人才計劃，這是大好的事情，但是千萬不可離開「育人」之本搞師資發展，倘僅以發表研究論文「論英雄」來引進、培養、使用、評價和激勵教師，或可風光一時，長久必然適得其反。所以，愈是重視師資，愈要明確「育人為本」。

任何一所大學都是由學生和教師組成的。一流的大學之所以長盛不衰、聲譽日隆，不僅是因為它聚集了一批「大師」，更是因為它培養了一批傑出「學生」，在某種意義上可以說恰恰是這些傑出學生才使教師成為「大師」。因此，大學堅守「育人為本」才是正道。堅守「育人為本」就是要把培養學生放在大學一切工作的中心，這不是輕視教師，而是要從培養學生的角度了解教師的重要，為了培養學生更好地引進和發展師資。優秀的教師必然是以學生為本的，殫精竭慮為學生傳道、授業、解惑的誨人不倦的「師者」。