

JSR GENETICS

PUTTING SCIENCE INTO PRACTICE

EDUCATING THE INDUSTRY LEADERS OF TOMORROW

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The title provides a challenging task. Firstly we need to define what we mean by industry leaders. Secondly we need to predict what the industry leaders will be faced with in the next 40 years. In higher education we focus on developing the student's mind, and creating an ability to learn, to adapt to new constraints by being innovative and responsive. This will enable individuals to analyse information, predict future scenarios, create solutions and manage new situations and lead change.

INTRODUCTION

I aim to address the topic in two distinct sections. The first part deals with leadership generally by posing several key questions.

What do we mean by leaders or indeed leadership?

What is the difference between leading and managing?

What are the skills and characteristics of a good leader?

The second part addresses some educational aspects.

From a subsidy driven to a knowledge driven Agri-Business economy

Key drivers for curriculum content for land based Universities and Colleges.

Developing students

Developing people already in the industry.

Partnerships Student/Universities/Industry

WHAT DO WE MEAN BY LEADERS AND LEADERSHIP?

If we concentrate too closely on defining "a leader" we will end up with a very generic description. Different organisations need to develop in their leaders characteristics based on the company's values in the market place. These can then be developed into a set of managerial behaviours.

For example:

	This organization is known for	Leaders at this organization are known for ...
Wal-Mart	Always low prices	Managing costs efficiently, getting things done on time
FedEx	Absolutely, positively, doing whatever it takes	Managing logistics, meeting deadlines, solving problems quickly
Lexus	Pursuit of perfection	Managing quality processes (lean manufacturing and design) for continuous improvement
Procter & Gamble	Brands you know and trust	Developing consumer insights, precisely targeted marketing, product innovation
McKinsey	Being a CEO's trusted adviser	Leading teams that deconstruct business problems, synthesize data, and develop solutions
Boeing	People working together as a global enterprise for aerospace leadership	Solving global problems, working as teams, possessing technical excellence in aerospace
Apple	Innovation and design	Creating new products and services that break the industry norms
PepsiCo	Appealing to the younger generation	Building the next generation of talent

Source: Ulrich and Smallwood from Harvard Business Review July/August 2007

WHAT IS THE DIFFERENCES BETWEEN LEADERSHIP AND MANAGEMENT

"Leaders are people who do the right things; managers are people who do things right". (Warren Bennis)

Leaders are not necessarily at the top of the organisation. Leaders and influencers are present throughout an organisation.

Differentiating between Leading from Managing

The following attempts to differentiate between leading from managing.

- 1 Leadership is an art – *Management is a science*
- 2 Leaders lead people – *Managers manage things*
- 3 Leaders operate in the future – *Managers deal in the present*
- 4 Leaders are agents of change – *Managers deal with the status-quo*
- 5 Leaders empower – *Managers control*
- 6 Leaders strive for effectiveness – *Managers aim for efficiency*
- 7 Leaders inspire – *Managers seek compliance*
- 8 Leaders listen – *Managers talk*
- 9 Leaders make people feel strong – *Managers direct people*
- 10 Leaders stretch people – *Managers maintain people*
- 11 Leaders excite people – *Managers monitor people*
- 12 Leaders make time – *Managers are busy*
- 13 Leaders experiment – *Managers create routines*
- 14 Leaders create institutions – *Managers run them*

Source: Mark Thomas (2006) *Gurus on Leadership*, Thorogood Publishing Ltd.

WHAT ARE THE SKILLS AND CHARACTERISTICS OF A GOOD LEADER? **Leadership skills and personal characteristics – A useful checklist adapted from Rank Xerox.**

Leadership: Provides direction; 'desire to succeed'; shows initiative; driven.

Strategic thinking: deal with ideas; readily learns and understands concepts; ability to conceptualize; imagination.

Innovation and creativity: perceptive; adopts innovative approaches and leading edge technologies.

Risk taking and a 'bias for action': trusts own judgement and instincts without requiring definitive proof;

Decision-making: ability to make difficult unpopular choices; gathers and analyses information; is open to influence and change;

Knowledge of field: understanding of ideas and leading edge technologies, trends and discoveries.

Managerial proficiency: identifies functions, tasks, teams and individuals; executes well.

Resourcefulness: Learns from successes and failure; a high level of initiative, drive, persistence.

Maturity and stability: accessible picture of strengths; is willing to learn and improve; controls emotions; refrains from over-reacting.

Communications: Expresses ideas and concerns clearly and persuasively; confident; in business meetings formal presentations.

THE MANAGEMENT OF CHANGE

The industry is currently in a key transitional shape moving from a subsidy driven to a knowledge based agriculture.

The impact of global trade/demographic trends is being experienced (market volatility). The impact of climate change and peak oil will add further impact.

The figure below illustrates this transition from a support to a knowledge driven economy. Institutional Capacity for knowledge creation and knowledge transfer are of central importance to the change. Well qualified, motivated and innovative leaders and managers are vital if the industry is to remain competitive.

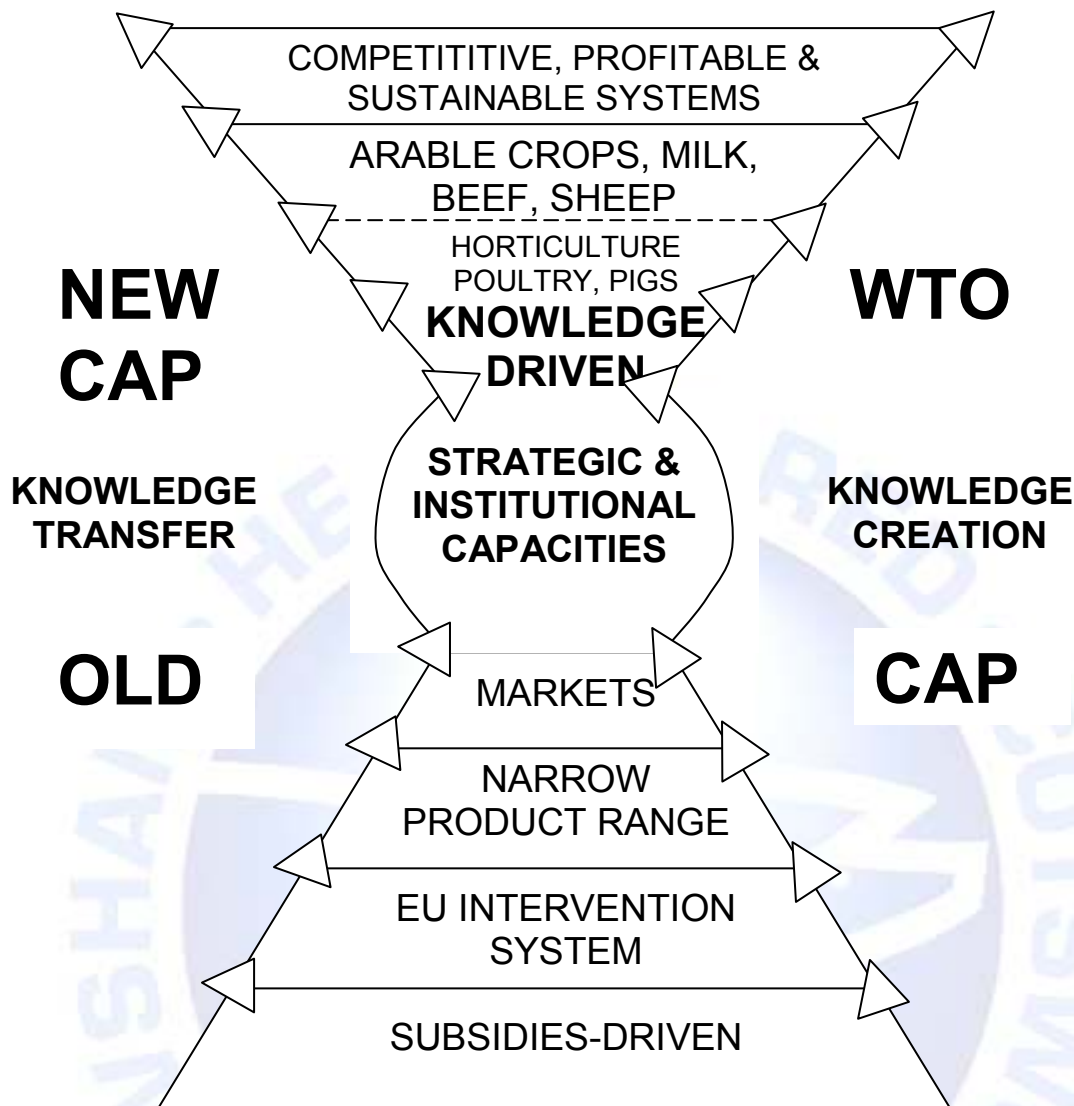


Fig. 1, *From Farming Subsidies to Farming Knowledge (From Downey Personal Communications).*

CURRICULUM CONTENT

During the year there has been a number of land based higher level education in the English University and Colleges sector undertaken by the Higher Education Funding Council for England (HEFCE). The report identified some key drivers which would shape the curriculum content in the future.

Systems that are based on business and markets

- increased market focus linked to consumer trends;
- new product development (innovation);
- business management and production efficiency (supply chains);
- managing business risks and market volatility;
- producing public goods.

Recreation Based Activities

- multifunctional land use;
- reduction in the environmental impact of land use;

promotion of positive environmental benefits;
encourage land use recreation;
green space;
health.

Resource use

carbon sequestration & management
energy, water and waste management
reducing, reuse and recycling techniques.

People issues

The key resource

EDUCATING FUTURE LEADERS

At Harper Adams we have an applied mission and a commitment to work closely with industry and business.

We therefore have to reconcile 3 important stands in our education process.

- a) Learning to enhance the broader skills for individual development
- b) Learning to meet the subject aspiration of students.
- c) meeting employers' demands for skills.

Thus all our degree courses have the following general course aims.

To develop in each student specialist subject knowledge and understanding appropriate to individual interests and developing vocational needs.

To develop each student's intellectual powers, their understanding and judgement, their ability to see relationships within what they have learned and to examine the field of study in a broader perspective.

To develop the personal effectiveness and employability of students, in particular their ability to learn, to communicate, to work with others and to solve problems.

To develop those skills of professional scholarship required for career management, lifelong learning and innovation.

To inculcate an awareness of the wider consequences of economic activity and a determination to minimise harmful effects on the environment and on people.

To provide a lively, stimulating and challenging educational experience.

In addition, and using our Agriculture degree courses as an example, our students are exposed to the following specific course aims.

- 1 To equip students with a thorough understanding of agricultural and rural land management systems and the underpinning scientific, economic and business principles.
- 2 To develop the ability to identify, analyse and solve technological and economic problems associated with the marketing of agricultural products,

evaluate new techniques and where appropriate apply them to commercial practice.

- 3 To develop communication, management and marketing skills and the ability to apply them to problems associated with the marketing of agricultural products.
- 4 To develop the ability to evaluate the wider global, environmental, economic, social, ethical and political issues associated with sustainable agricultural development.
- 5 To develop the ability to manage a sustainable rural environment and respond effectively to changing political, economic, environmental, social and ethical influences.

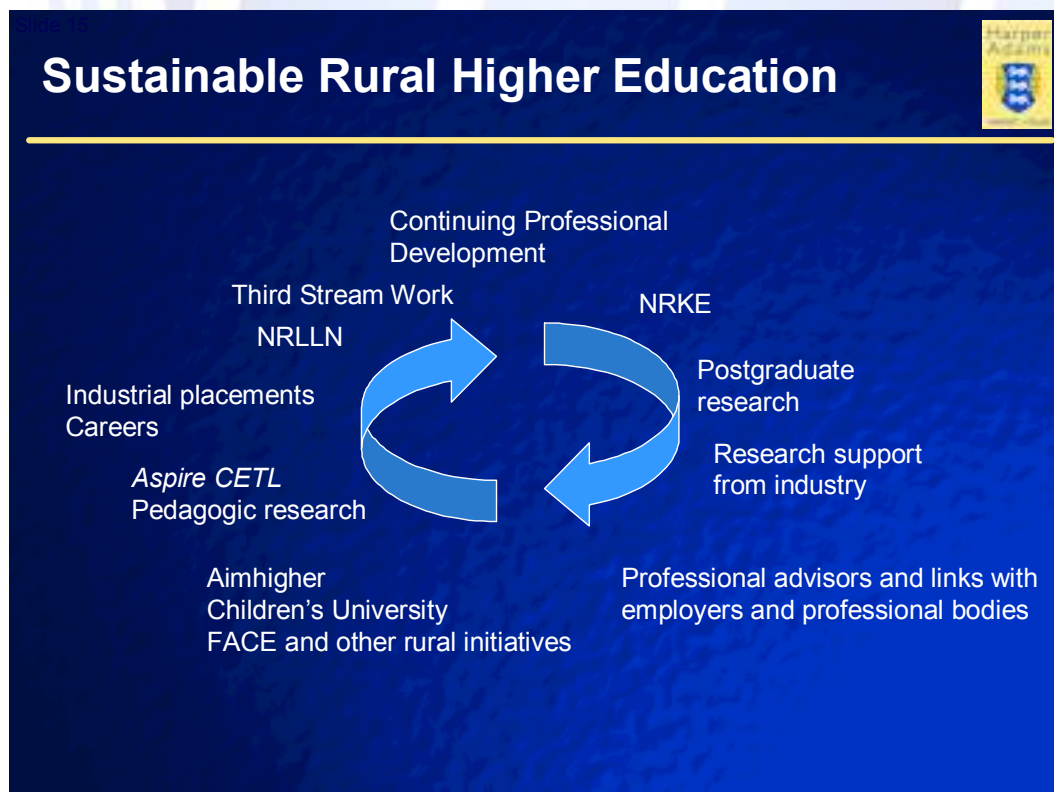
(Source BSc Honours Course Handbook
Harper Adams University College)

PARTNERSHIP STUDENT, UNIVERSITY AND INDUSTRY

At Harper Adams we have reviewed examined to the importance of the professional placement as a major component of the curriculum. Degree students spend 2 years in College followed by one year on placement followed by a final year back in College.

This is a very important partnership between the student, the industry and Harper Adams.

This relationship in fact can be amplified to include graduate placement and continuing professional development and learning (see diagram).



CONTINUING PROFESSIONAL DEVELOPMENT/LIFELONG LEARNING

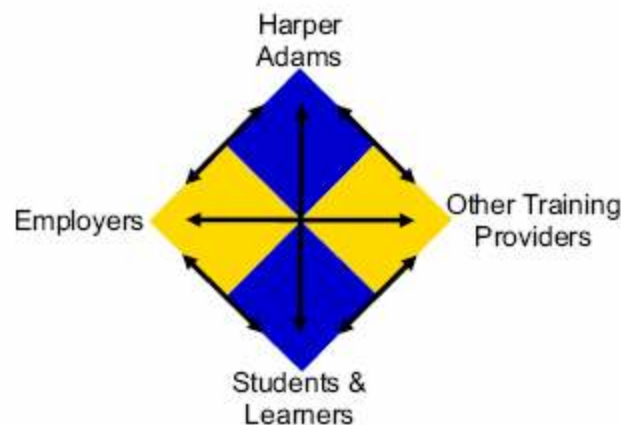
It is interesting to observe the different approaches taken by companies to select either sandwich placement students or particularly graduates. This is a key part of the process.

The successful business select the correct people, regularly evaluate their performance and develop their management and leadership skills.

We work with business to develop their staff in a variety of ways: We can exploit a qualification framework and credit based modules to provide very feasible programmes.

Work Based Learning

Harper Adams works with employers and other training providers to develop bespoke industry training and development solutions.



Some examples of Harper Adams' current working partnerships:



Developed a ground breaking Postgraduate Certificate in Food & Fresh Produce Management for graduate trainees in the fresh produce sector.



Developed a national programme for Suitably Qualified Persons for prescribing and supplying animal medicines.



Train & assess auditors to fulfil their role within M&S's new Code of Practice - *Field to Fork* - and ensure consistent implementation of the new standards.

Organisations can facilitate learning by;
Providing access to knowledge and information;
Creating opportunities to practice and develop new skills;
Provide effective support for the learning process;
Rewarding learning.

The sectors have a number of initiatives to develop leaders
eg. Young Farmer Clubs.
Worshipful Company of Farmers Courses
Worshipful Farming Scholarships trust
Continuing Professional Development.

CONCLUSIONS

The industry attracts some very able and capable young talent.

Those that have qualifications are more likely to seek further development training.

Developing managers and leaders already in the industry is a high priority.

An industry/sector perceived as professional/committed to developing people is more likely to attract the right type of entrants. Should we have a professional body for Agriculture?

In the future a knowledge driven, globally competitive environment will create an increasing need for higher level skills and higher level commitment to developing people.

These are good examples and practises, we need to share and disseminate these approaches more widely.