



Expectations, Approaches to learning and Academic Achievement:

Are there correlations for the first year undergraduate chemistry student?

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ViCE, Dublin 2008

School



University

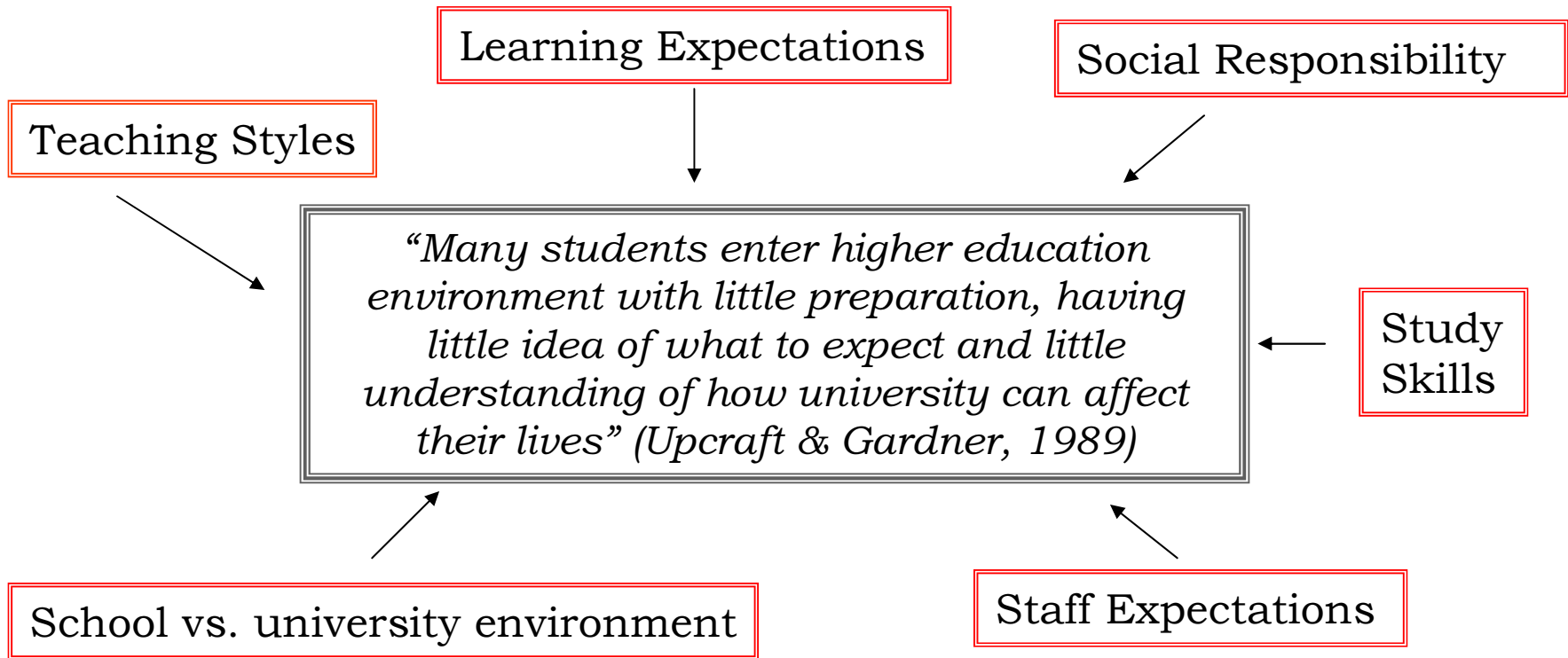


Student Profiles

Successful

Under Achieve

Transition issues



Upcraft, M. Gardner, J. (1989) A comprehensive approach to enhancing freshman success in: Lowe, H, Cook, A., Mind the Gap: are students prepared for higher education? Journal of Further and Higher Education, Vol. 27, No. 1,
Lowe, H., Cook, 2003, A., Mind the Gap: are students prepared for higher education? 2003, Journal of Further and Higher Education, 27, 1, 53-76

Analysis (~200 Students)



- How do students approach their learning?
ASSIST Inventory^{1,2}
- What are students motives for coming to university?
- Are students prepared for university?
- What are students' work expectations for university?
MPE (Motives, Preparedness and Expectations) Survey
- Do students' experiences match their indicated motives and expectations?
- Are they as prepared for university as they indicated on entry?
MPEE (Motives, Preparedness, Expectations and Experience) Survey
Student Interviews

¹Entwistle N., Scoring Key for the Approaches and Study Skills Inventory for Students (ASSIST) [online]
<http://www.ed.ac.uk/etl/questionnaires/ASSIST.pdf>

²Kelly, O.; The Development, Implementation and Evaluation of Alternative Approaches to Teaching and Learning in the Chemistry Laboratory, PhD Thesis, DCU (2005)

On Entry - Approaches

Deep and strategic approaches
are favoured over surface
approaches

Paired-Approach	Mean Difference	ST DEV	t	df	p
Deep-Strategic	0.134	2.055	0.794	147	0.428
Deep-Surface	2.143	3.310	7.849	146	0.000*
Strategic-Surface	1.940	3.410	6.992	150	0.000*

* *p* value indicates significant difference

Motives



- Career
- Personal (development/influence)
- Subject
- External factors (friends etc...)
- Drift

On Entry - Motives

- Career
- Personal development/influence
- Subject
- External factors (friends etc...)
- Drift

	Agree (F/S)	Mean
I want to develop knowledge and skills I can use in a career	99%	4.77
I hope the whole experience will make me more independent and self confident	88%	4.43
I want to study the subject in depth by taking interesting and stimulating courses	74%	4.09
I mainly need the qualification to enable me to get a good job when I finish	73%	4.03

Preparedness



- Learning Responsibility
- Interaction/participation with class and teaching personnel
- ICT & Communication Skills
- Personal/Social

On Entry - Preparedness

- Interaction/participation with class and teaching personnel
- ICT & Communication Skills
- Personal/Social
- Learning Responsibility

	Agree (F/S)	Mean
I am willing to participate in class	90%	4.44
I am willing to ask for help from my lecturers/tutors	76%	4.12
I am able to work independently without much direction from a teacher	48%	3.46
I am able to plan my study in a time effective manner to meet all my deadlines	57%	3.56
I am able to initiate my own study activities	68%	3.78

On Entry - Preparedness

- Interaction/participation with class and teaching personnel
- ICT & Communication Skills*
- Personal – organising own life?
- **Learning Responsibility**

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But....

By the end of the year?

Changing Profiles - Approach

Deep and strategic approaches
are favoured over surface
approaches



- Both Deep and Strategic approaches significantly decreased
- Surface Approach significantly increased

Changing Profiles

There was a significant decreases observed in agreement towards statements relating to:

Motives



- Career
- Personal (development/influence)
- Subject

Preparedness



- Learning Responsibility
- Interaction/participation with class and teaching personnel

Changing Motives

- o Career & Subject
- o Personal (development /influence)

	Mean Wk 2	Mean Wk 24	Mean Diff	df	P
I have developed knowledge and skills that I can use in a career.	4.74	4.07	0.67	123	.000
I have studied chemistry in depth by taking interesting and stimulating courses.	4.10	3.18	0.92	120	.000
I have learned things that will help me to develop as a person and broaden my horizons.	4.29	3.95	0.34	123	.000
My 1 st year experience has made me more independent and self-confident.	4.41	4.04	0.37	123	.000
I have learned things that might let me help people, and/or make a difference in the world.	4.12	3.31	0.81	120	.000

Changing Preparedness



- o Interaction / participation with class and teaching personnel
- o Learning Responsibility

	Mean Wk 2	Mean Wk 24	Mean Diff	df	P
I have asked for help from my lecturers/tutors when needed	4.13	3.33	0.80	119	.000
I feel able to ask my lecturer questions about material I don't understand	4.48	3.52	0.96	121	.000
I have organised my own life generally	4.10	3.60	0.50	120	.000
I have taken responsibility for my own learning	4.09	3.83	0.26	119	.003
I have initiated my own study activities	3.85	3.55	0.30	118	.002
I am able to plan my study in a time effective manner to meet all my deadlines	3.55	3.09	0.46	120	.000
I have evaluated my own progress	3.83	3.20	0.63	121	.000

Changing Expectations

92% were happy they came to University

Start of Year



End of Year one

- 88% of students are aiming for high honours grade
 - 45% would be happy with pass/low honours grade
- Studying 10.5hrs /week
 - 4 hrs /week for chemistry

- 25% of students are aiming for high honours grade
 - 69% happy with pass/low honours
- Studying 5hrs /week
 - 2 hrs /week for chemistry

How does this relate to performance? ...

“Profile of successful student”



Positive correlation between performance and deep and strategic approaches to learning

Negative correlation between performance and surface approach

Approach	Statistics	Chemistry	CA	Written	Lab
Deep	Pearson Correlation	.239**	.051	.296**	.250**
Strategic	Pearson Correlation	.309**	.156	.337**	.303**
Surface	Pearson Correlation	-.395**	-.319**	-.366**	-.360**

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

“Profile of successful student”



“Career / Subject interest”

	Statistics	Chemistry	CA	Written	Lab
I have developed knowledge and skills that I can use in a career.	Pearson Correlation	.293**	.195*	.293**	.334**
I have studied chemistry in depth by taking interesting and stimulating courses.	Pearson Correlation	.314**	.202*	.318**	.366**
I am happy I decided to go to University	Pearson Correlation	.203*	.221**	.155	.243**
I have an active social life and/or sport in DCU	Pearson Correlation	-.273**	-.067	-.336**	-.211*

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

“Profile of successful student”



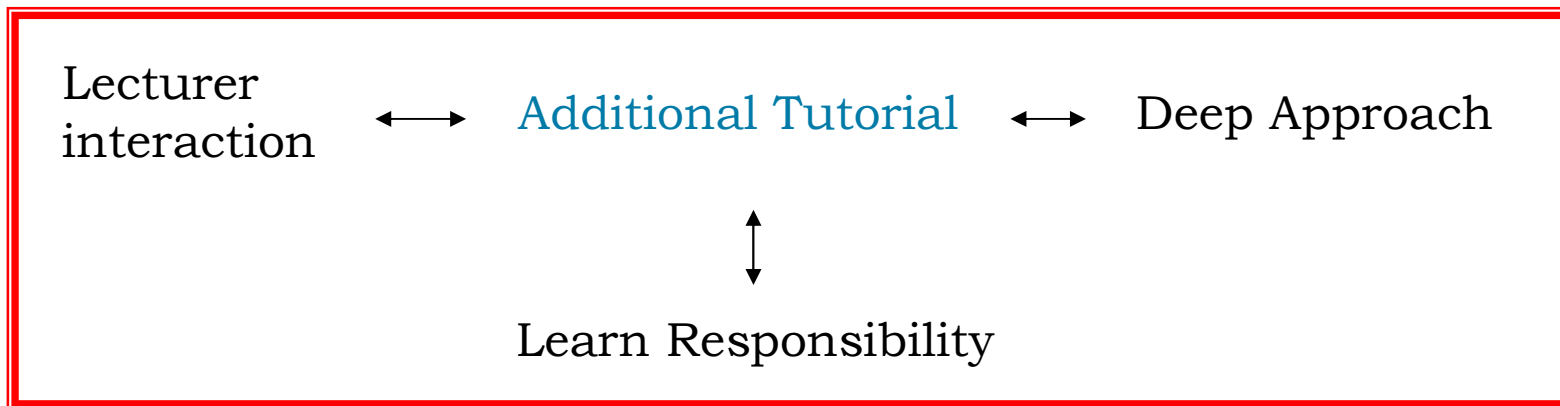
Learning Responsibility

	Statistics	Chemistry	CA	Exam	Lab
I have initiated my own study activities	Pearson Correlation	.190*	.058	.228**	.248**
I am able to plan my study in a time effective manner to meet all my deadlines	Pearson Correlation	.220**	.030	.285**	.189*
I have taken responsibility for my own learning	Pearson Correlation	.247**	.119	.272**	.230**
I have asked for help from my lecturers/tutors when needed	Pearson Correlation	.127	.096	.121	.207*
I have worked independently without much direction from a teacher	Pearson Correlation	.156	.101	.157	.252**

Implications (~200 students)



- Relevance of 1st year lecture material to possible careers
- Interaction with lecturers ‘Friendly Face’
- How can we maintain students entry approaches?
- How can we improve students ‘learning responsibility’?





Thank you



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