

CAFCE Conference - Atlantic

May 24-25, 2005

Co-operative Education: What are the added values for the student, the teacher and the business?

Part 2

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(Interdisciplinary group on training for employment)*

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Canadian Association For Co-operative Education

CAFCE – Atlantic chapter

**«Co-operative Education: What are the added values for the
student, the teacher and the business?»**

May 24-25, 2005 - Moncton

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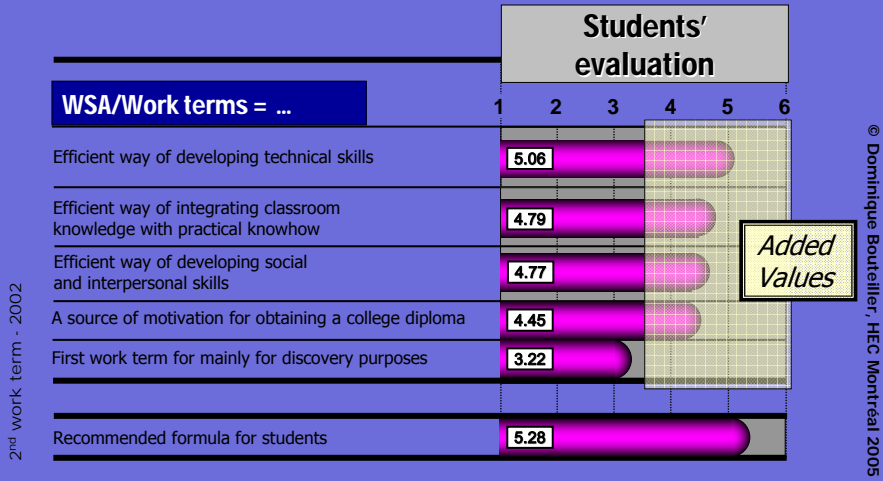
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The Co-op-WSP /WSA formula: what are the **added values** for the student and for the business?

WSA: What are the added values for the student?

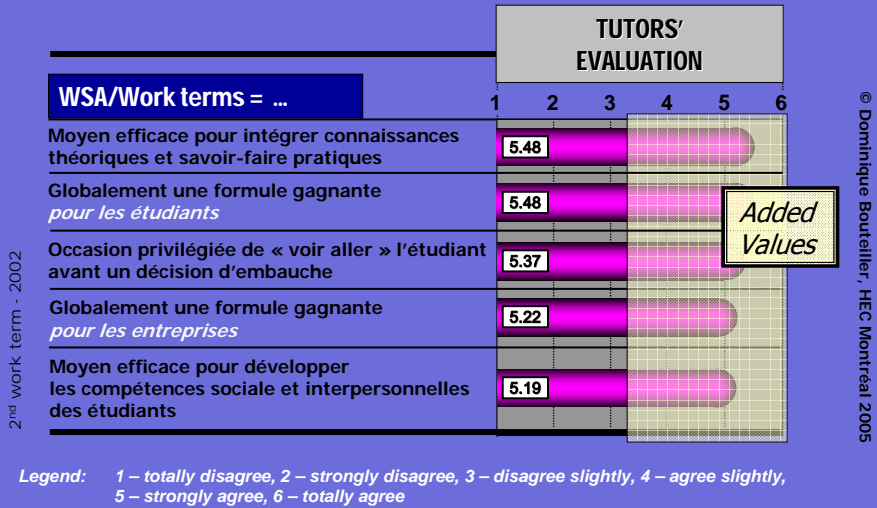


2nd work term - 2002

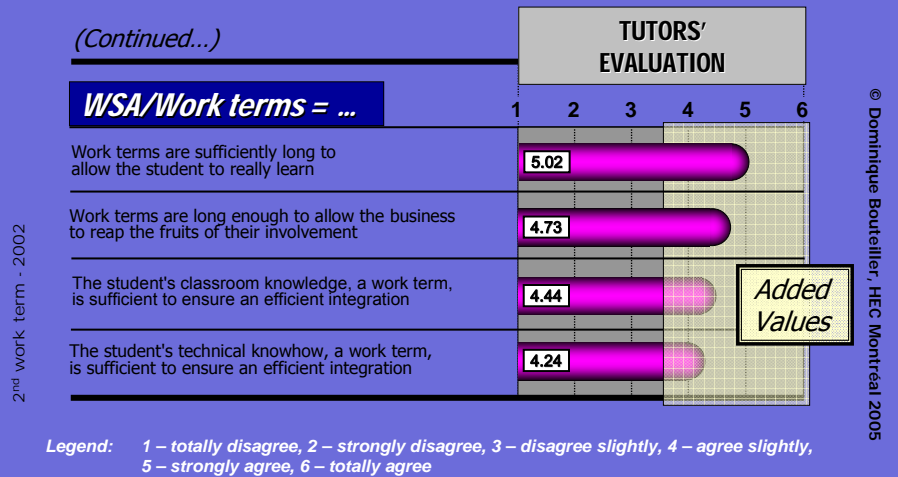
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Legend: 1 – totally disagree, 2 – strongly disagree, 3 – disagree slightly, 4 – agree slightly, 5 – strongly agree, 6 – totally agree

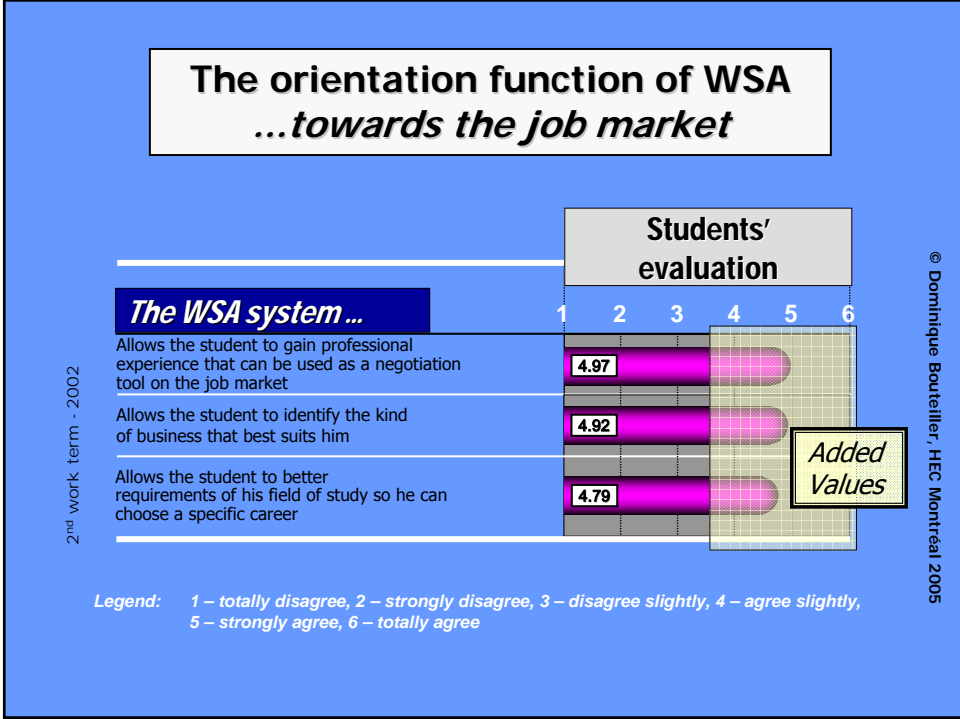
WSA: What are the added values for the business?



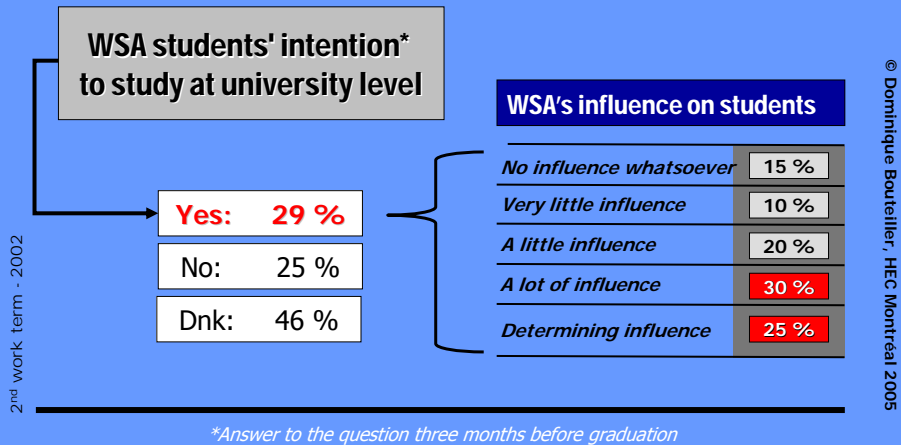
WSA: What are the added values for the business?



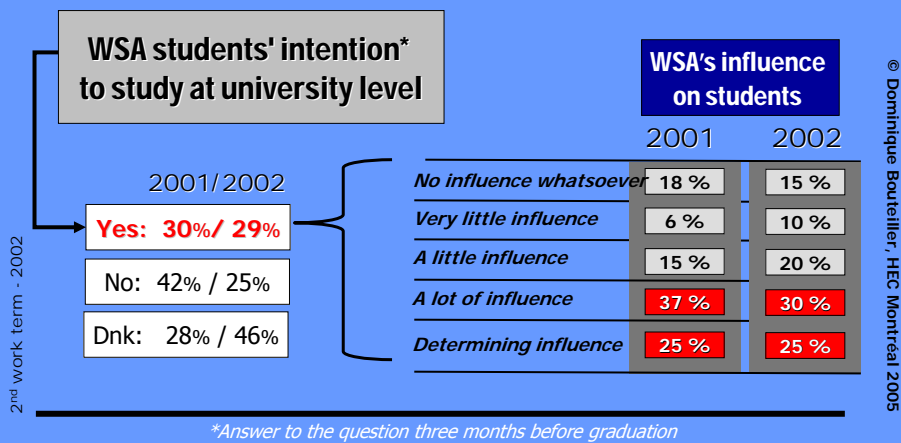
Does the Co-op -WSA formula help the student to better plan his [immediate] future?

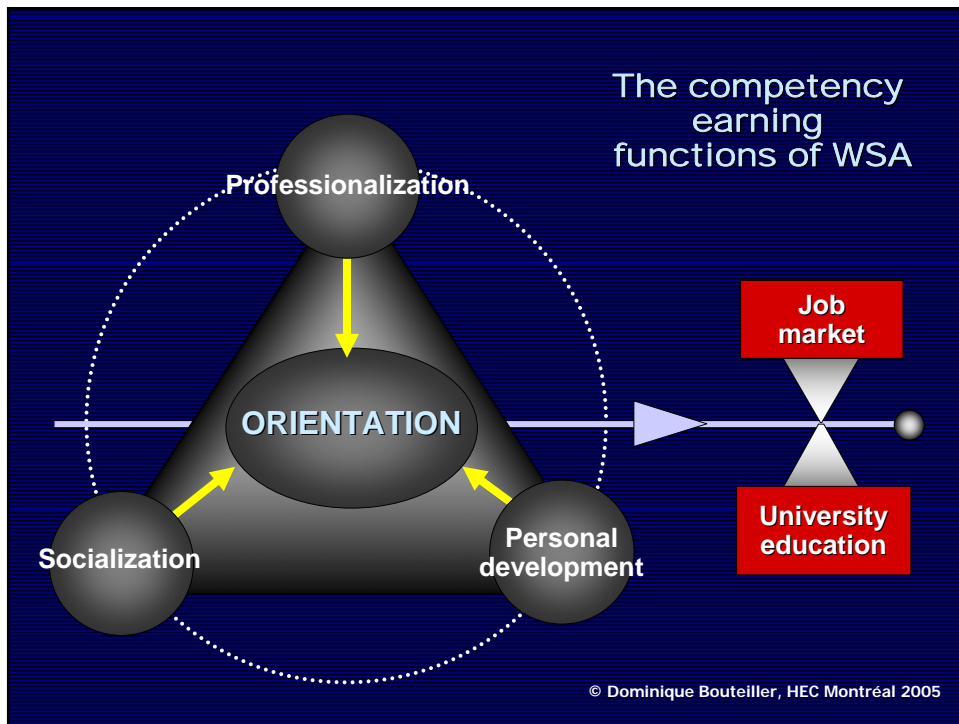


The orientation function of WSA ...towards the university



The orientation function of WSA ...towards the university (2001-2002)

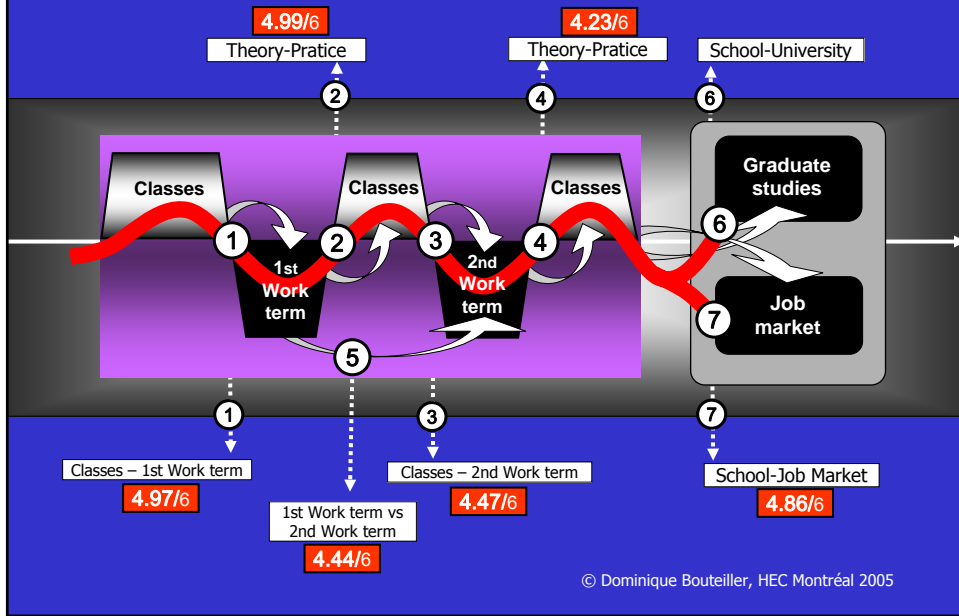




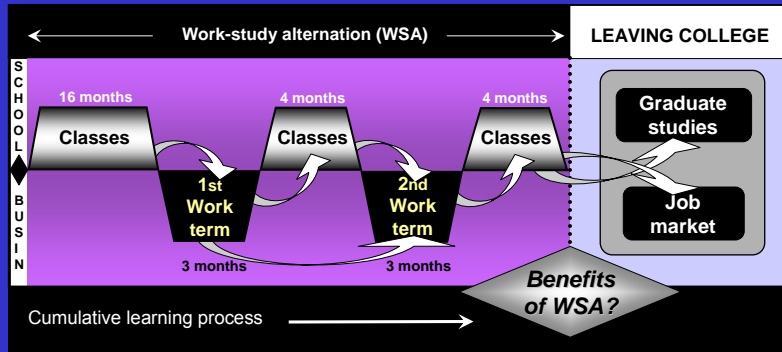
PART 2

Transfers,
knowledge and
dynamics related
to alternation

WSA and knowledge transfers



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- Students sign up for work-study programs on a voluntary basis
- Paid work terms
- Both work terms in the same business, or in different on
- Cycle ends in class
- Management and follow-up of the work terms by dedicated personnel

WSA and knowledge transfers

4.23/6

Theory-Practice

4

K \ T	1st WT		Theory Practice	Classes 2nd WT	School work
	2nd WT				
Professionalization	47**	51**	23*	34**	
Socialization	27**	31**	22*	-	
Personal	38**	40**	-	23*	
Interpersonal	35**	20*	-	-	

5

3

7

1st WT vs 2nd WT

4.44/6

Classes vs 2nd WT

4.47/6

School – Job market

4.86/6

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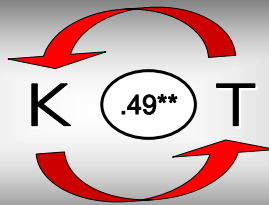
WSA and knowledge transfers

4.23/6

Theory-Practice

4

Total Knowledge



Total Transfert

5

3

7

1st WT vs 2nd WT

4.44/6

Classes vs 2nd WT

4.47/6

School – Job market

4.86/6

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PART 3

The teacher's function in alternation

Research objectives

1

GATHER a college's teachers' opinions regarding the functioning of the WSA "system"
Teachers = privileged observers of students' progress in the alternation process (before, during, after)

2

IDENTIFY how differently teachers' evaluate WSA students and students in regular programs on a series of criteria

3

UNDERSTAND how much the WSA students' presence questions the teacher's role and makes him adapt his personal and professional positions

Research hypothesis

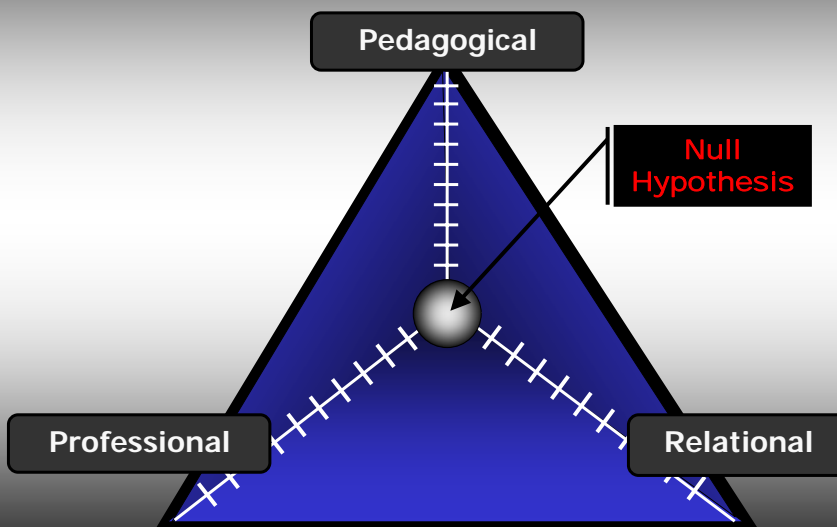
... - The presence, in class, of students living the experience of work-study program / work-study alternation causes a restructuring of the teacher's functions...

- at the pedagogical exercise level
- at the professional positioning level
- at the relational field level

The restructuring effect of WSA on the teacher's functions

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Restructuring of the teacher's function



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Characteristics of the sample

Population : N = 95
 → Response rate: 44 % → Sample: n = 42

Sex	H = 90%
Age (<i>mode</i>)	45-49 ans
Seniority: professor	14,8 ans
Seniority: Collège Limoilou	13,5 ans
Seniority: program	12,8 ans
Independent work experience (n=22; 60%)	5,9 ans
Employment experience (n=38; 93%)	5,5 ans

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Characteristics of the sample (continued) Teachers' involvement in WSA

- Teaching experience with WSA groups (number of groups)..... 9,7
- Teaching experience with Non-WSA groups (number of groups).... 3.8
- Teaching experience with mixed groups (WSA and Non-WSA)... 4,5
- Indicator of exchange with students during the WSA process (1 to 5) 2.5
- Indicator of global involvement in the WSA process (1 to 5)..... 2.2
- Personal experience of the in-business work term formula.... 42,5%

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Survey of teachers

Results

Descriptive data

Knowledge gained - 1st work term vs 2nd work term

COMPETENCES	1st work term		2nd work term		t-test t	Sig P
	Rank	Avg/5	Rank	Avg/5		
Technical knowledge	8	3,41	7	3,85	3,46	,00
Professional knowhow	5	3,58	5	4,00	4,64	,00
Understanding of the business's functioning	1	3,77	2	4,10	2,29	,03
Ability to express oneself and argue	11	3,19	10	3,61	3,36	,00
Ability to deal with problems in a multidimensional way	12	3,19	12	3,53	2,30	,03
Ability to plan and organize one's work	9	3,66	9	3,66	2,55	,01
Self-confidence	2	3,66	1	4,22	2,44	,02
Autonomy	4	3,67	4	4,03	3,67	,00
Sense of responsibility	6	3,52	6	3,97	4,09	,00
Ability to solve problems	10	3,32	11	3,58	2,57	,01
Ability to relate theory and practice	3	3,65	3	4,03	3,98	,00
Ability to integrate the different facets of the program	7	3,44	8	3,74	4,57	,00
Average: 3.48						Average : 3.86

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Legend: 1 – have made no progress, 2 – have made very little progress, 3 – have made a little progress, 4 – have made a lot of progress, 5 – have made an enormous amount of progress

Different behaviours – WSA vs Non-WSA

Rank	WSA students vs Non-WSA students	Moy (-3 à +3)	É-type
1	...expect more from the teacher	1,72	1,08
2	...ask more precise and applied questions	1,66	,65
3	...are more mature	1,56	1,52
4	...have better grades	1,56	1,13
5	...show more interest in the subject taught	1,53	1,13
6	...are more motivated to increase their knowledge of the subject matter	1,53	1,07
7	...are more implicated and participate more in class	1,41	,94
8	...show a deeper critical sense	1,41	1,36
9	...communicate with teachers more often outside of class	1,32	1,13
10	...ask more questions	1,22	1,03
11	...are more applied in their schoolwork and projects	1,22	1,31
12	...are able to learn more	1,13	1,47
13	...are better organized and more systematic in their learning	1,09	1,228

Legend: -3 – totally disagree, -2 – strongly disagree, -1 – disagree, 0 – neither agree nor disagree, +1 – agree, +2 – strongly agree, +3 – totally agree

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Effects of WSA students' behaviour on teachers' functions

Rank	Effects of the WSA students' presence	Avg (-3 à +3)	E-type
1	Makes the student-teacher relationship more interesting	1,74	1,141
2	Generates more dynamic exchanges between students	1,74	1,186
3	Contributes in augmenting the pleasure of teaching	1,72	1,986
4	Incites the teacher to stay up-to-date in his field	1,64	1,347
5	Helps create a stimulating learning environment	1,62	1,206
6	Allows for reliance on students' experiences during presentations	1,54	,884
7	Allows the teacher to make more complex links with the practical world	1,23	1,347
8	Gives the teacher the chance to deepen his contacts with the business world	1,13	1,780
9	Can make the content of classes richer with new concrete examples	1,10	1,483
10	<i>Effects of the WSA students' presence</i>	1,08	1,403

Legend: -3 – totally disagree, -2 – strongly disagree, -1 – disagree, 0 – neither agree nor disagree, +1 – agree, +2 – strongly agree, +3 – totally agree

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Effects of WSA students' behaviour on teachers' functions

Rank	Effects of the WSA students' presence	Avg (-3 à +3)	E- type
11	Allows the teacher to be confronted by new problems related to his field	1,08	1,546
12	Allows the teacher to learn about the products and processes of a business	1,05	1,486
13	Leads the teacher to change some of his pedagogical approaches	,92	1,010
14	Leads to better teaching by making some reorganizing within the program	,92	1,222
15	Question certain "habits" the teacher may have developed	,72	1,685
16	Allows the teacher to raise his own teaching requirements	,46	1,274
17	Allows the teacher to suggest harder exercises in class	,44	1,353

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Legend: -3 – totally disagree, -2 – strongly disagree, -1 – disagree,
0 – neither agree nor disagree, +1 – agree, +2 – strongly agree, +3 – totally agree

WSA functions as seen by teachers

Rank	Functions of the work term and of WSA	Avg (-3 à +3)	E- Type
1	A means for developing social and interpersonal skills	2,30	,687
2	Create experience that can be valuable on the job market	2,17	,813
3	A means for integrating classroom knowledge and practical knowhow	2,02	1,143
4	A means for developing technical skills	2,00	1,086
5	A formula to recommend to new students	1,88	1,285
6	Gives the student a better understanding of the requirements of his field and to choose a specific career	1,82	1,412
7	A source of motivation for obtaining his college diploma	1,70	1,114
8	Helps students identify the kind of business that would best suit them	1,67	,997
9	The experiences lived by students during their 2nd work term are transferred in their sixth classroom term	1,46	1,406
10	A formula that should be generalized in all college technical programs	1,45	1,584
11	Both work terms give the student complementary knowledge	1,43	1,191
12	The experiences lived by students during their 1st work term are transferred in their fifth classroom term	,92	1,115

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Legend: -3 – totally disagree, -2 – strongly disagree, -1 – disagree,
0 – neither agree nor disagree, +1 – agree, +2 – strongly agree, +3 – totally agree

Survey of teachers

Results

Interpretation essay

Underlining the restructuring effects of WSA on the teacher's functions

A few summarized variables, for reasoning purposes:

Effects of WSA...

EFFPED – Effects on the pedagogical level ($\alpha = .91$)

EFFPRO – Effects on the professional level ($\alpha = .86$)

EFFREL – Effects on the relational level ($\alpha = .86$)

The different behaviour of WSA students...

BEIMP – Involvement behaviour in classes ($\alpha = .86$)

BEREQ – Requirement behaviour towards the teacher ($\alpha = .84$)

A few summarized variables, for reasoning purposes:

Effects of WSA...

EFFPED – Effects on the pedagogical level ($\alpha = .91$)

- Can make the content of classes richer with concrete examples
- Allows the teacher to suggest harder exercises in class
- Higher requirement level
- Using students' experiences
- Allows the teacher to make more complex links with the practical world
- Allows for deeper application of certain notions
- Leads to better teaching by making some reorganizing within the program

EFFPRO – Effects on the professional level ($\alpha = .86$)

- Leads the teacher to change some of his pedagogical approaches
- Deepen the teacher's contacts with businesses
- Allows the teacher to learn more about businesses
- Allows the teacher to be confronted by new problems related to his field
- Question certain "habits" the teacher may have developed
- Incites the teacher to stay up-to-date in his field

EFFREL – Effects on the relational level ($\alpha = .86$)

- Makes the student-teacher relationship more interesting
- Helps create a more stimulating learning environment
- Generates more dynamic exchanges between students

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A few summarized variables, for reasoning purposes:

The different behaviour of WSA students...

BEIMP – Involvement behaviour in classes ($\alpha = .86$)

- Ask more questions
- Ask more specific and applied questions
- Are more involved in class

BEREQ – Requirement behaviour towards the teacher ($\alpha = .84$)

- Are more applied in their schoolwork and projects
- Are more mature
- Have a sharper critical sense
- Expect more from their teacher

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The structuring effects of WSA

	Knowledge earned					
	Professional		Personal		Work term 1	Work term 2
	Work term 1	Work term 2	Work term 1	Work term 2	Pro + Pers	Pro + Pers
Sytudent behavior						
INVOLVEMENT	,04	,38**	,34*	,64***	,28	,61***
REQUIREMENTS	,21	,53***	,61***	,63***	,53***	,57***
EFFECTS on the teacher						
PEDAGOGICAL	,16	,49***	,46***	,55***	,39**	,50***
PROFESSIONAL	,32	,58***	,40**	,44**	,40**	,53***
RELATIONAL	,05	,41**	,10	,38**	,08	,45***

Combined effects really high when taken globally

Effects of the 2nd work term are greater than the effects of 1st work term

Effects K/personal are greater than affects of K/professional

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The structuring effect of WSA (continued)

EFFECTS on the TEACHERS	STUDENT BEHAVIOR	
	involvement	Requirement
Pedagogical	,43**	,84***
Professional	,40**	,60***
Relational	,65***	,45***

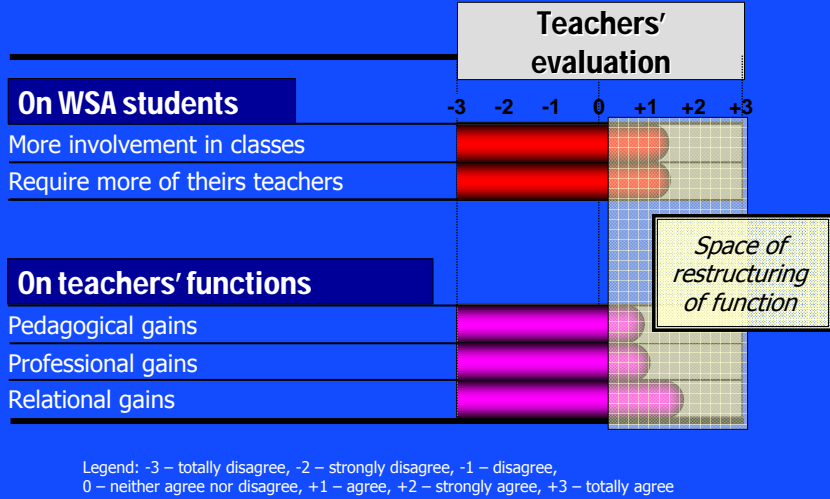
Combined effects really high when taken globally

Effects of Requirements are greater than effects of Involvement

Pedagogical and relational effects = two reasons

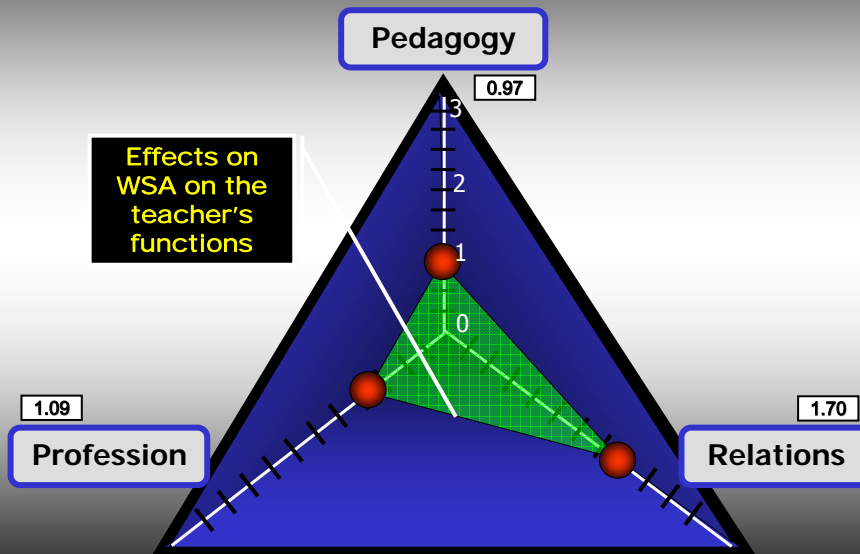
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What changes for teachers?



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WSA and the teacher's functions



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Which effects of the variables controls?

	Age	Teacher's seniority	WSA experience	WSA involvement level
WSA students' behaviour				
Involvement	,26	,23	,34*	,29*
Requirements	,08	,16	,24	,24
Effects of WSA				
Pedagogical	-,03	,03	,28*	,33**
Professional	-,04	-,05	,26	,18
Relational	,05	,17	,28*	,25

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Going back to our original hypothesis!

Everything indicates, within the limits of such an analysis, that the presence of WSA students causes a restructuring of the teacher's functions.

There exists, in varying degrees depending on the work term, a kind of cumulative logic (cause and effect!) between the intensity of knowledge gained in the work terms, the intensification of involvement levels (in class and at the college) and students' requirements from their teachers, and the three dimensions we had looked at concerning the teacher's functions.

The three functional fields are touched (pedagogical, professional and relational)

But it is the requirement level of the WSA students, in the equation, that plays strongest on the pedagogical and professional sides, while it is the increased involvement level of WSA students that plays strongest on the relational dynamics.

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Conclusions *(for now...)*

Taken globally, the presence of WSA students seems to have a significantly ***positive effect*** on the teacher's functions within the college

And this realization is established in a context where teachers are not direct stakeholders in the management process (e.g. In the search for work terms, in negotiating the contracts with the businesses, following-up on students, etc.) , which is the responsibility of Work term and Placement services.

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The limits of our research/Teachers

Non-representation (internal)

56% have not responded to the survey – who has not responded?

Non-representation (external)

The data is specific to the Collège Limoilou's WSA system

in terms of privileged types of WSA (two work terms + last term in the classroom)

in terms of internal organization and management

one must be prudent before generalizing for other WSA systems

Depersonalization

The teachers were made to think more globally about their cohorts of WSA students of the past two years, which encompassed cohorts of students interviewed in previous stages...

...but there are no possible correspondences at the data analysis level for student and tutor cases

Weak "n"

No access to multivariate analysis and to possibilities of underlining inter-variable relations

We only included a limited number of contextual variables (e.g.

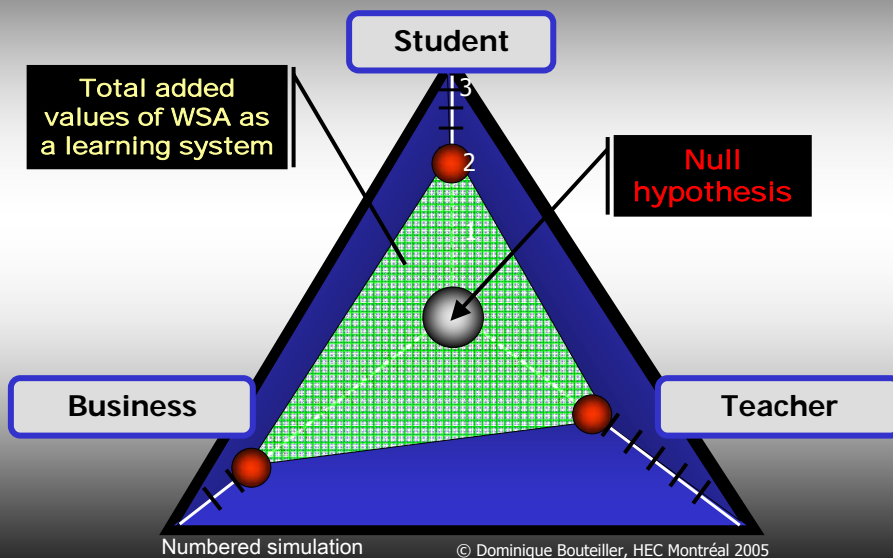
Depending on the program)

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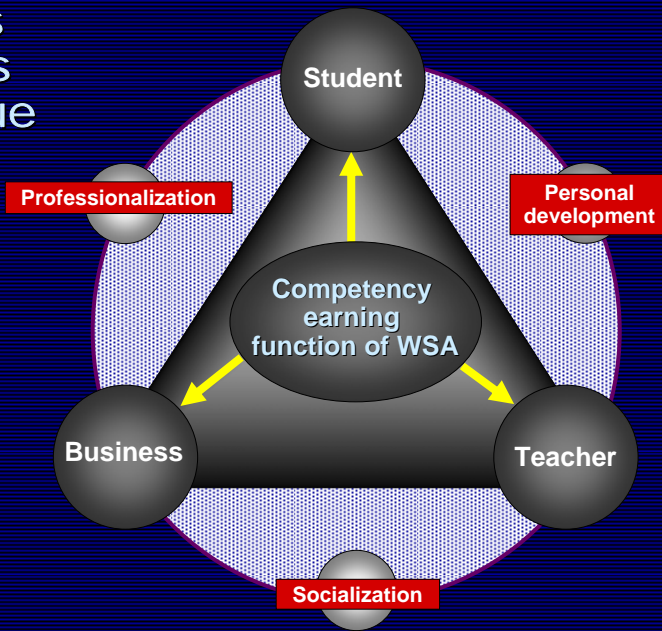
CONCLUSIONS

(for now!)

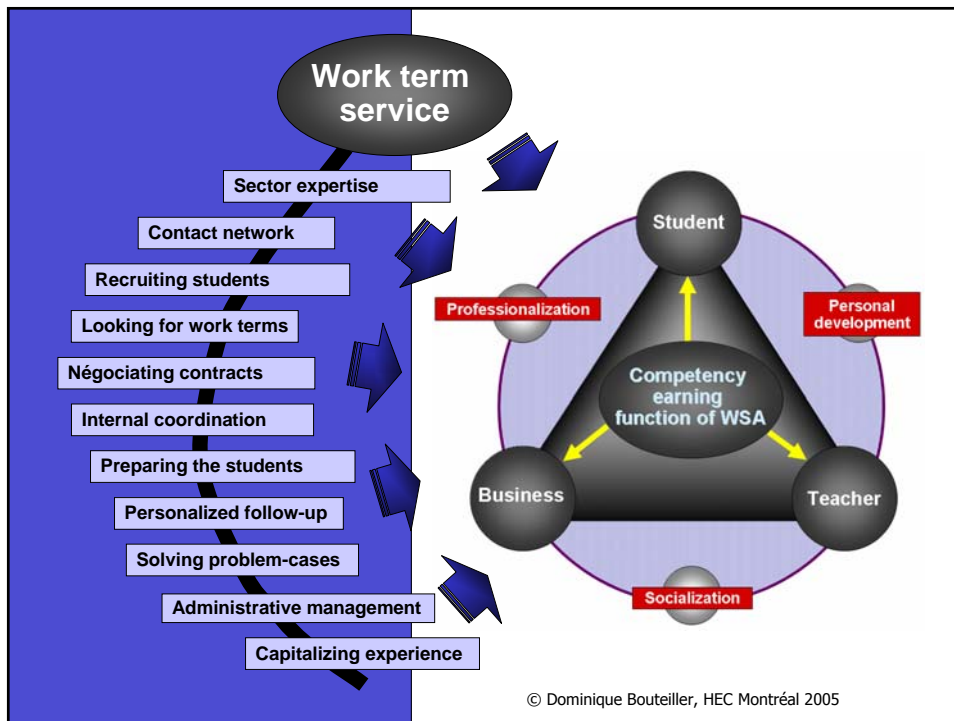
The added values of WSA



WSA's circles of virtue



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