

# **Costs and Benefits of Bilingualism at the University of Ottawa**

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## Executive Summary

The benefits of bilingualism outweigh its costs. Bilingualism enables the University of Ottawa to serve the postsecondary needs of Franco-Ontarians alongside those of many other French speaking Canadians and even international students. This is achieved by a university ranking among the 200 best in the world.

The size, comprehensiveness and research intensity of the bilingual solution implemented by the University of Ottawa provide access in French to a much broader set of programs than a smaller unilingual university would be able to achieve, especially in the areas of professional and graduate education, including engineering, education, law, health and medicine, as well as a wide cross-section of Masters and PhDs. The bilingual model provides more service at a lesser cost per student than a smaller unilingual institution because it shares fixed costs across both linguistic communities and avoids the duplication of very nearly all management levels.

The co-existence and integration of the two linguistic groups in a common, respectful, environment favors the development of inter-group awareness, exposure, communication, sensitivity and exchange. This last characteristic of the utmost importance for the Province of Ontario.

Yet, even though the bilingual model is a far-reaching success, it does cost more to operate than a single language large institution. The following table summarizes the shortfall associated with bilingualism at the University of Ottawa. The supplementary cost for current service is the result of factors such as the number of supplementary course sections, second language training, library collections, translation, publication and advertising, and the promotion of bilingualism. The investment required for service enhancement is the need to expand the diversity of the course offerings in French to make it globally equivalent to the educational richness available in English.

The incremental costs of bilingualism for the current level of service provided by the University to its students and the community amounts to \$49M. Taking into account the existing funding of \$32M the University still has to divert \$17M from its operating budget, an amount which should really be devoted to the quality of programming in terms of reducing class sizes and improving the student/professor ratio. Adding to this the resources required to offer the same diversity and richness of education in French as we do in English, even prorated to the smaller size of the French population, the total financing shortfall is calculated to be \$30M.

### Summary of 2012-13 incremental costs of bilingualism at the University of Ottawa

Description	Annual Amount
Supplementary costs for current service	\$ 49M
Accessibility and equity enhancement	\$ 13M
<b>Total Cost</b>	<b>\$ 62M</b>
Current financing	\$ 32M
<b>Total Shortfall</b>	<b>\$ 30M</b>

## Sommaire exécutif

Les bénéfices du bilinguisme surpassent ses coûts. Le bilinguisme permet en premier lieu à l'Université d'Ottawa de server les besoins en éducation universitaire de la population Franco-Ontarienne, et de le faire aux côtés de nombreux autres citoyens canadiens et internationaux d'expression française. Ceci est accompli par une université qui se range parmi les 200 meilleurs au monde.

La taille, l'étendue des domaines de formation couverts, et l'intensité de la recherche dans la solution bilingue implantée par l'Université d'Ottawa fournissent l'accès en français à un éventail de programmes beaucoup plus large que ce qu'une université unilingue plus petite serait en mesure d'offrir, particulièrement dans les domaines professionnels et des études supérieures avancées, incluant le génie, l'éducation, le droit, la santé et la médecine, ainsi qu'une panoplie de maîtrises et de doctorats. Le modèle bilingue fournit plus de service à un coût moyen par étudiant moins élevé qu'une université unilingue plus petite parce qu'il partage les coûts fixes entre les deux communautés linguistiques et évite la duplication de pratiquement tout l'appareillage de gestion.

La coexistence et l'intégration des deux groupes linguistiques dans un environnement commun et respectueux favorise le développement d'une prise de conscience, d'exposition, de communication, de sensibilité et d'échange intergroupe. Cette caractéristique est d'une importance cruciale pour la Province de l'Ontario.

Même si le modèle bilingue est économique et un succès à grande échelle, il n'est pas gratuit. Le tableau ci-dessous résume le manque à gagner associé au bilinguisme à l'Université d'Ottawa. Les coûts supplémentaires pour les services courants sont le résultat de facteurs tels que le nombre de sections de cours supplémentaires qu'on doit maintenir ouvertes en dépit de leur taille non-optimale, les deux collections de la bibliothèque, la traduction, la publication, la publicité, ainsi que la promotion du bilinguisme. Les investissements requis pour améliorer le service correspondent au besoin d'expansion de la diversité des sujets de cours offerts en français pour la rendre globalement comparable à la richesse éducative actuellement offerte en anglais.

Les coûts additionnels du bilinguisme pour le niveau de service actuellement fourni par l'Université s'élève à \$49M. Considérant le financement existant à la hauteur de \$32M, il y a encore \$17M du fonds de fonctionnement de l'Université qui devrait normalement être plutôt dépensé sur la qualité de la programmation en termes de réduction de taille de classe et de ratio étudiant/professeur. Ajoutant les ressources nécessaires afin d'offrir la même diversité et richesse de choix de cours en français comme en anglais, même au prorata de la taille de la population francophone par rapport à l'anglophone, le manque à gagner total est estimé à \$30M.

### Sommaire des coûts du bilinguisme en 2012-13 à l'Université d'Ottawa

Description	Somme annuelle
Coûts supplémentaires pour le service actuel	\$ 49M
Investissement pour rendre la richesse éducative équitable	\$ 13M
<b>Coût total</b>	<b>\$ 62M</b>
Financement existant	\$ 32M
<b>Manque à gagner total</b>	<b>\$ 30M</b>

## Costs and Benefits of Bilingualism at the University of Ottawa

The purpose of this report is to describe the costs and the benefits of operating the University of Ottawa as a bilingual university in Ontario.

The benefits are multiple. First, it enables the University of Ottawa to primarily serve the postsecondary needs of Franco-Ontarians alongside those of many other French speaking Canadians and even international students. Second, by virtue of its size, comprehensiveness and research intensity, the bilingual solution implemented by the University of Ottawa provides access in French to a much broader set of programs than a smaller unilingual university would be able to achieve, especially in the areas of professional and graduate education, including education, law and medicine, as well as a wide cross-section of Masters and PhDs. Bilingualism provides more service at a lesser cost per student than a smaller unilingual institution because it shares fixed costs across both linguistic communities and avoids the duplication of very nearly all management levels. Finally, the co-existence and integration of the two linguistic groups in a common, respectful, environment favors the development of inter-group awareness, exposure, communication, sensitivity and exchange. This last characteristic of the utmost importance for the Province of Ontario. All this is achieved by a university ranking among the 200 best in the world.

Although the bilingual model of the University of Ottawa is economical and a far-reaching success, it does cost more to operate than a comparably large unilingual institution. The costs are generated by multiple factors. Some are associated with the obligation to maintain a larger number of course sections than would be necessary in a unilingual environment. When there is a small overflow of students needing access to a certain course, they cannot be added to the existing sections until such time as the size of the overflow fully justifies the opening of an additional section, because of the language barrier. Other costs are attached to second language training for professors and staff; maintaining two full-fledged library collections; translating and publishing all public documents; finding and hiring bilingual staff; providing computer software and services in both languages; buying publicity and advertising; and leading the research and culture of bilingualism through the Official Languages and Bilingualism Institute and through the offering a university level French immersion stream. Finally, there is a need to expand the diversity of the courses offered in French to make the offer globally equivalent to the educational richness available in English.

The report is organized as follows. First we present the mission of the University of Ottawa and the historical context of the bilingual model. Next we review the level of financing currently available from Governments to support the linguistic aspects of our mission. Then we assess the cost of bilingualism for the current level of service offered. And, finally, we quantify the investments needed to enhance access and quality of university education in French in Ontario to a level more fully comparable with what is available in English. In closing, we argue that the bilingual model is a more efficient use of public funds than opening a separate, exclusively French speaking university.

## Historical Context

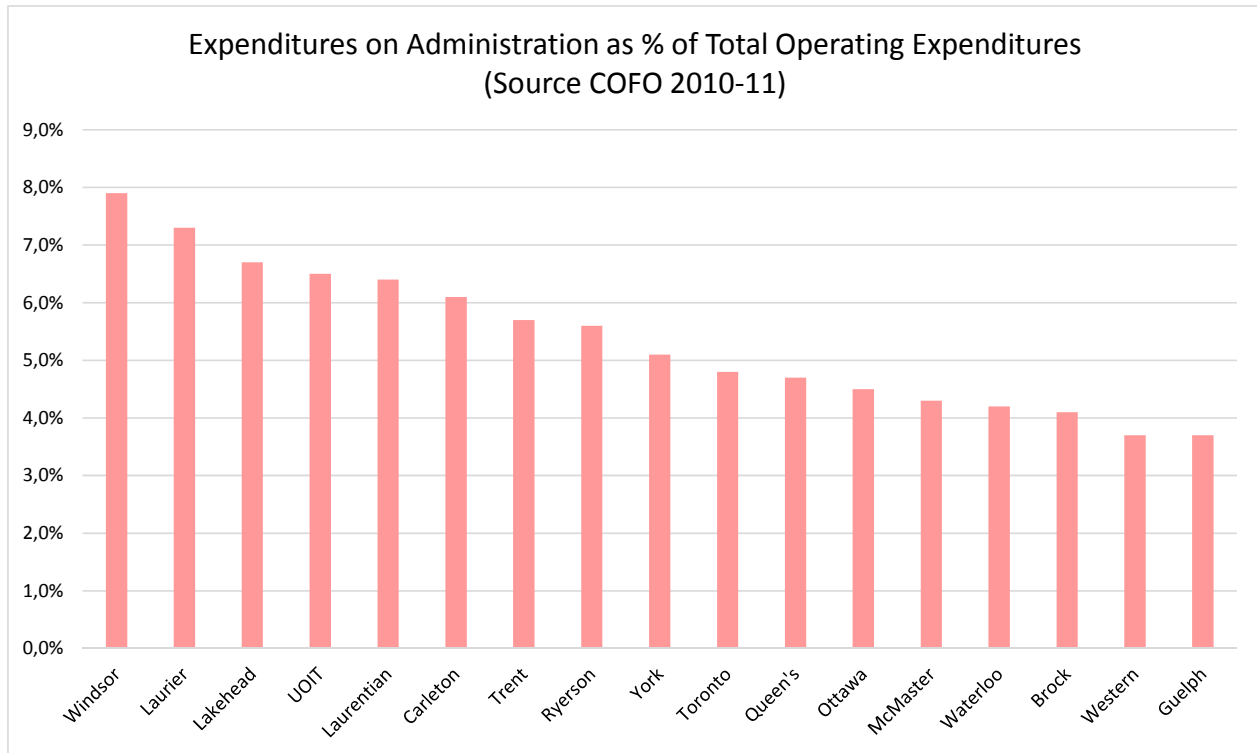
Since 1848, the University of Ottawa has been a reflection, an observatory and a catalyst of the Canadian experience in all its complexity and diversity with a special emphasis on bilingualism. Located in the heart of the national capital, at the junction of French and English Canada, the University is uniquely committed to the promotion of French culture in Ontario, to bilingualism, and to multiculturalism. Through the groundbreaking work of our community members, we are uniquely positioned, as one of the top 200 universities in the world, to give students a remarkable education in both official languages.

In order to accomplish its mission in both official languages, the University has established an exemplary model of functioning based on its high performance in size, in the variety of both undergraduate, professional and graduate programs it offers, and its economy of means compared to having two unilingual universities to accomplish the same. According to data from the Ontario University Applicant Center (OUAC), the University of Ottawa receives 50% of all applications made by Ontario High School students having graduated from an Ontario French High School. The University of Ottawa offers a comprehensive range of programs in both English and French at the undergraduate (200) and graduate (185) levels, including 75 undergraduate and professional programs for which the University is seeking the protection of the *Loi sur les services en français*. Of the 42,000 full-time and part-time students, about 13,000 are francophone, about 600 of whom are from abroad. In addition, the University of Ottawa is home to close to 1,500 Francophile students registered in our French immersion program and to an additional 2,000 Francophile students coming from French immersion high schools. The University is de facto the primary institution serving the needs of Franco-Ontarians alongside many other French speaking Canadians and international students.

Bilingualism provides more service at a lesser cost per student than a smaller unilingual institution because it shares fixed costs across both linguistic communities and avoids the duplication of very nearly all management levels. As shown in Figure 1, the University of Ottawa is among the most efficient universities in Ontario in its ratio of administrative to total expenses<sup>1</sup>, achieving this while serving the two linguistic groups. To establish a separate university serving exclusively the francophone community would immediately duplicate much of these expenses without serving more people. In 2012, the administrative expenses at Ontario institutions slightly under 20,000 students were around \$8-9M. There is also evidence in Figure 1 that these costs would represent a lesser efficiency as they tend to represent a large fraction of the total operating expenditures in smaller institutions.

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<sup>1</sup> Category “Administration & General” divided by “Sub-Total - Instruction and Research Administrative expenses” as per the 2010-11 annual report of the Council of Ontario Finance Officers (COFO). Courtesy of the University of Western Ontario.



**Figure 1: Administrative efficiency at the University of Ottawa**

The co-existence and integration of the two linguistic groups in a common, respectful, environment favors the development of inter-group awareness, exposure, communication, sensitivity and exchange. This characteristic of the utmost importance for the Province of Ontario because the two groups do co-exist in the community and the workplace. This co-existence is not without its tensions and challenges but what better place to learn to understand one another than in a non-threatening learning environment.

The University goes to great lengths to maintain a good linguistic balance while operating bilingually. There are four performance indicators in the Scorecard monitoring the linguistic balance on campus including the crucially important percentage of actively bilingual<sup>2</sup> professors (66%) and staff (94%). This level of active bilingualism enables the conduct of meetings bilingually, without repetition, and to offer services in either French or English at all times.

Since 1967, the Government of Ontario has provided some funding to universities offering programs in both French and English. The bilingualism funding envelope has evolved over the years. When this study was last updated in 2005, funding for bilingualism and for services in French stood at \$28 million provincially, with \$18 million to the University of Ottawa (including \$1.5 million to Saint-Paul University). In his 2005 report on postsecondary education in Ontario, the Honorable Bob Rae recognized the need to increase base funding to help French-language colleges and bilingual universities to play a more effective role in fostering a vibrant francophone, postsecondary education community in Ontario. In the intervening decade, the Federal Government has developed its Official Languages in Education programs with

<sup>2</sup> For support staff, the level of bilingualism is assessed by the direct supervisor. Active bilingualism is determined by the ability to communicate clearly and to understand the second language with few difficulties. For faculty members, the level of bilingualism required is determined in the hiring contract and is a condition for receiving tenure. Active bilingualism is defined as the ability to teach in one's second language.

partnership contributions from the province of Ontario. In 2012-13, \$54 million were distributed to the Ontario University sector to support French and bilingual education<sup>3</sup>, with \$32 million for the University of Ottawa. The table below summarizes linguistic funding from government to the University of Ottawa for 2012-13.

<b>Bilingualism funding from government to the University of Ottawa for 2012-13</b>	
Bilingualism Grants	22053482
French Language Access	6299835
Official Languages in Education (OLE) Programs Provincial Contribution	1669239
Official Languages in Education (OLE) Programs Federal Contribution	1732473
<b>Total</b>	<b>31755029</b>

The University of Ottawa is very grateful for the support it has obtained over the years. Nevertheless, the growth in the number of francophone students from 9,700 in 2003-04 to 13,000 in 2012-13, the increasing demand for new programs in French, and the need to improve the breadth and quality of programs and course offerings to francophone students, bring us to review the costs of bilingualism today.

The first source of costs of operating a bilingual university arises from the direct delivery of existing programs. These costs have been assessed following the essentials of the methodology originally recommended by the Ontario Council on University Affairs (OCUA) in 1978 and updated in 1983, in 1989 and in 2005<sup>4</sup>. However, we have modified the methodology as appropriate to better reflect current university operations and data availability. The current analysis is based on 2012-13 data and contains seven primary aspects: a) supplementary course offering costs; b) second language training; c) library operations; d) translation services; e) publishing, printing, stationery and supplies; f) administrative staff; and g) computer services. We have also added (i) publicity and advertising costs and (ii) costs associated with offering a French immersion program.

In addition, Professor François Vaillancourt, a recognized expert in the economics of bilingualism, has kindly reviewed the methodology of the study and we followed his recommendations for the report.

## **Costs of Current Level of Service**

The University offers its courses in French and in English. The bulk of these courses are parallel in that they cover the same curriculum in either language. In addition, some courses are non-parallel because they are offered in one language only. Each is treated separately.

A course is presumed to run full year, i.e. from September to April [1 Full Course Equivalent (FCE)]. Courses running from September to December or January to April are counted as 0.5 FCE.

<sup>3</sup> Ministry of Training Colleges and Universities (MTCU): Final University Operating Transfer Payments Totals (FTOT) for 2012-13

<sup>4</sup> *Incremental Costs of Bilingualism at the University of Ottawa – 2003-2004*, Report prepared by the Office of Institutional Research and Planning. August 2005.



For parallel courses, a supplementary section<sup>5</sup> is that which would not be offered by a unilingual institution of the same size of student body. In a unilingual institution, the maximum size of a section is established as a function of academic considerations as well as room seating capacity and teaching resources. Students requesting access to courses are allocated to the various sections according to demand and availability. When sections become full, a certain amount of overflow will be allowed until this amount becomes too large. It is only then that a new section will be opened, thus incurring additional teaching costs. When course sections are not all in the same language, the ability to use the overflow as a buffer is much more limited because students cannot be spread across the sections in the other language. Note that the University does not impose an overall number of sections and then allocate some in English and some in French thus keeping total costs capped. Nor does it increase class size in English in order to be able to afford the section in French. There is however a pressure to close French sections as some of them do tend to be small.

We calculate the number of supplementary sections caused by bilingualism by taking, within each language, the total number of sections for a given course minus the normal or optimal number of sections where the normal number of sections is defined as the total student registrations divided by the normal maximum section size for that course. Where a normal maximum size does not exist, we use the average size. The number of supplementary section per course is always limited to one only.

The following types of courses are excluded from the study: Directed studies and other forms of one-on-one teaching; distance education courses (online, videoconferencing, etc.); courses offered by Algonquin College as part of our collaborative programs; courses that are part of self-financed full recovery programs such as the Additional Qualifications in Education and the Executive MBA; courses offered by the faculty of Medicine; and language and translation courses. The list of parallel supplementary sections is presented below.

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<sup>5</sup> Each course topic has its own course code (e.g. PSY1100, PSY1200, etc.) and each course may have one or more section offering the same course in different rooms or at different times (e.g. PSY1100A, PSY100B, etc.)

Parallel Supplementary Sections					
ADM	14.75	EAS	0.5	MAT	7.5
ANT	3	ECH	2	MBA	1
APA	6	ECO	10.5	MCG	2.5
API	5.5	ECS	6	MDG	4
ART	2	EDU	7.5	MUS	1
BCH	2	ELG	1.5	NSG	16.5
BIO	5.5	EPE	1	PAP	3
BPS	1.5	FEM	4	PED	2.5
CEG	1	GEG	1	PHI	10
CHM	6	GNG	1.5	PHY	6.5
CLA	1	HIS	5	POL	15.5
CML	14.5	HSS	5	PSY	14.5
CMN	6.5	HUM	0.5	SCS	1.5
CRM	11.5	IGL	4.5	SEG	0.5
CSI	2	IPA	7.5	SOC	6.5
CVG	0.5	ISC	3	SRS	0.5
DCA	3.5	ITI	2	SSS	0.5
DCL	2	LCL	3	THE	4
DRC	1.5	LIN	0.5	THO	5
DVM	2	LSR	0.5	<b>Total</b>	<b>262.25</b>

Non-parallel courses exist when different subject material is being offered in order to provide an adequate range of courses in either English or French. In order to avoid attributing incremental costs to non-parallel courses which would be offered by a unilingual institution with the same size student body, we studied only French non-parallel courses. Also, in order to avoid attributing incremental costs to non-parallel sections where the students could have been accommodated in other sections of the same discipline in the same language, we counted as supplementary only the French sections that were smaller than the University's average section size.

Non-parallel Supplementary Sections					
ADM	0,5	ECH	1	MAT	4
ANT	2	ECO	1	MDV	0,5
APA	2	EDU	8	MUS	2
API	0,5	EFR	1	NSG	2,5
ARB	0,5	ELA	0,5	NUT	8,5
ART	0,5	EPE	0,5	ORA	5,5
BCH	0,5	ERG	0,25	PAP	2
BIO	2	EVG	0,67	PED	25
BPS	0,5	FEM	1	PHI	4
CDN	0,5	FRA	20	PHT	0,25
CIN	0,5	FRE	4,5	PHY	2
CLA	1	GEG	5	POL	7
CML	13,17	GEO	2	PSY	0,5
CMN	1,5	HIS	3	RUS	0,5
CRM	1,5	HSS	1	SOC	6
CSI	0,5	IPA	3	SRS	4
DCA	0,5	ISC	7	SVS	18
DCC	2	ISI	1,5	THE	2
DCL	6	LCL	0,5	THO	8
DLS	1	LCM	1	<b>Total</b>	<b>225.3</b>
DRC	19	LIN	3		
EAS	1	LSR	0,5		

The incremental professorial cost is derived separately for full-time and part-time professors using the overall actual University proportion of 50% sections taught by full-time professors and 50% by part-time professors. For full-time faculty costs, the proportional number of supplementary sections is divided by the average teaching load for full-time professors and multiplied by the average faculty salary including fringe benefits (excluding medicine). In 2012-13, the average teaching load for all professors, computed over the entire record set of courses formally evaluated by students at the University of Ottawa, is 2 FCE. For part-time faculty costs, the relevant number of supplementary sections is multiplied by the average part-time faculty salary per section. The combined cost of parallel and non-parallel supplementary courses is presented in the next table.

Teaching staff costs			
A	Teaching FCE per full-time professor		2
B	Total supplementary FCE	(262.3 + 225.3)	487.6
C	Full-time professors required	(B x .5 / A)	121.9
D	Part-time professors required	(B x .5)	243.8
E	Full-time average salary \$120,000 + 23.98% benefits)		\$ 148,776
F	Part-time salary per FCE		\$ 18,600
G	Total professors costs	(C x E + D x F)	\$ <b>22,670,474</b>

Note that the original OCUA methodology assumed that all university teaching relied on regular full-time faculty members. Instead, we have estimated the costs of delivery using a 50/50 mix of regular full-time professors and part-time lecturers. Had we estimated the supplementary teaching costs using the OCUA full-time only methodology, the costs would have reached at \$36.3 million instead of \$22.6.<sup>6</sup>

For academic support staff, the incremental costs are obtained by applying the ratio of supplementary sections to the total number of sections (8.96%) multiplied by the total cost of all support staff in teaching related activities, including staff in faculties and services (e.g., libraries, learning support services, international office).

<b>Support staff costs</b>			
H	Total FCE		5,445
I	Ratio of supplementary sections to total sections	B / H	8.96%
J	Total academic support staff costs		\$ 32,508,361
K	Support staff incremental cost	(I x J)	<b>\$ 2,912,749</b>
<b>Total Professors and Support Staff Costs</b>			
L	Teaching + Support costs	(G + K)	<b>\$ 25,583,223</b>

In order to enable the University to function bilingually in all its meetings and all its interactions with students as well as with the media and community representatives, we must ensure that our professors and staff are actively bilingual. The first strategy is to recruit individuals who are already bilingual before entering the University. But this is not always possible. Also, there are situations where highly talented individuals are not bilingual but are willing to learn a second language, which is beneficial to the University in a competitive environment. Thus the University must provide the necessary resources to support second language acquisition. The estimation of the costs includes second language training for professors and staff, language lab costs, language ability testing for professors, staff *and students* as we promote bilingualism for all. The amounts reported represent recurring yearly expenditures.

The second language training is just one part of a much wider action taken by the University to promote bilingualism. The University has created its Official Languages and Bilingualism Institute (OLBI), a breeding ground for innovation and fresh ideas, where anyone dedicated to expanding and sharing our knowledge of bilingualism can join forces with others in achieving that goal. A leader in the fields of official languages and bilingualism in Canada, OLBI provides an ideal setting for analysis, research and development designed to serve university communities, as well as public, private and non-governmental agencies and organizations in the area of official languages, bilingualism and language planning.

<sup>6</sup> Our external reviewer suggested that we should cost the teaching provided by regular professors at 40% of their total workload which also comprises research and community service. While this costing would be more *accurate* in an ideal sense, unfortunately, the University cannot hire regular professors in blocks of 40% teaching only. In effect, this economy has already been achieved by the mix of full-time and part-time in place.

<b>Second Language Training</b>	
Second Language Testing	\$ 167,510
Intensive Courses	\$ 2,616,355
General administration	\$ 2,128,207
Other support staff (contractual)	\$ 1,489,084
<b>Total</b>	<b>\$ 6,401,156</b>
At 97% to avoid double counting with administrative staff overhead	<b>\$ 6,209,121</b>

We did not include a premium wage associated with bilingualism as our salary structure, both for professors and staff, is set against comparable organizations most of which are not bilingual. The reality is that recruiting is a challenge because the pool of highly talented persons who are also bilingual is much smaller than the same talent pool regardless of language, and individuals who present both highly sought abilities are given absolute priority for hiring.

As part of its educational efforts, the University has chosen to create continuity in the bilingualism educational path of students entering from high school immersion by offering a university level French Immersion stream. Students enrolled in French Immersion study partially in French while earning their undergraduate degree. This stream is offered in 76 programs across first entry faculties. French immersion students have access to a wide variety of resources on campus, including a dedicated mentoring centre and French writing help, and numerous opportunities to learn French outside the classroom. To support the stream, the University has a program director and immersion courses which are a combination of two different activities: A regular content course taught in French and an accompanying 90-minute language course. A language professor attends the content course with the immersions students, and then teaches the language class to help the immersions students develop the French skills directly relevant to the field of study. This language support is offered in first- and second-year courses to help lay the foundation for future bilingual studies.

<b>French Immersion Studies</b>	
Salaries administrative staff	\$ 254,129
Other expenditures immersion program	\$ 82,645
<b>Total</b>	<b>\$ 336,774</b>

When it comes to the library, a fully bilingual university must maintain two full collections. This is much more than buying a few extra copies in a unilingual environment to make up for the larger institution size. Supporting studies in French as well as in English requires different items. Nevertheless, to correct for the fact that Anglophone universities do maintain a part of their collection in French especially if they have related programs such as French Studies for example, we adjusted the costs estimates accordingly.

<b>Library</b>			
A	One-time costs of purchasing French materials (e.g., monographs, etc.)		\$ 1,077,313
B	On-going costs of maintaining French collection (e.g., renewals for electronic access, etc.)		\$ 1,479,919
C	11,000 documents catalogued at an average cost of \$60 per document		\$ 660,000
D	Total bilingualism related library expenditures	(A + B + C)	\$ 3,217,232
E	Annual cost of the total collection of monographs, print and electronic serials		\$ 15,703,900
F	Proportion of costs of French language collection to the total collection minus the corresponding proportion at a comparable unilingual university	(D / E) -0.6%	19.9%
G	Total incremental costs of bilingualism in library services	(F x E)	<b>\$ 3,125,076</b>

For translation services, as for other support staff, we calculated salaries and benefits for internal translation staff. We also added the ongoing (not the capital) cost of office space for the central team as their positions are dedicated. We did not capture human resources overhead specifically for this team.

<b><i>Translation Services</i></b>	
<i>Central university translation department</i>	
Expenditures and honoraria for external translators	\$ 169,500
Internal staff costs	\$ 622,248
Office Space	\$ 12,500
<i>Decentralized translation initiatives</i>	
Honoraria for external translators (paid by faculty)	\$ 145,187
Internal staff costs (at the departmental level)	\$ 367,215
Expenditures by services (e.g., sports services)	\$ 4,435
<b>Total</b>	<b>\$ 1,321,085</b>

The cost of publishing, printing, stationary and supplies is for the production of administrative materials (e.g. Minutes, official reports, and public documents). It excludes the expenditures of DocUcentre, a self-recovery service photocopying course notes for students. The 30% ratio was estimated through a survey of relevant staff.

<b>Publishing, Printing, Stationary and Supplies</b>	
Total cost of photocopying	\$ 2,414,219
Total cost paper and printing	\$ 1,920,684
Total cost of supplies	\$ 425,315
Total	\$ 4,760,218
Incremental cost estimated at 30%	30%
Incremental cost	\$ 1,428,065

To calculate the administrative overhead due to bilingualism, we took the total administrative salary mass, subtracted positions already captured elsewhere, and added a 3% overhead. The 3% figure is derived from the work of Vaillancourt and Coche (2009 and 2012)<sup>7</sup> but reduced from 5% because we already capture other costs such publishing, advertising, etc. directly in other steps of this report. Finally we added the full cost of positions that exist strictly because of bilingualism, including office space for these last positions. Examples of such positions include Associate deans responsible for francophone affairs in the faculties of Medicine and Education, and liaison officers for Ontario francophone students.

<b>Administrative Overhead</b>		
A	Total salary mass, support staff	\$ 154,886,164
B	Minus	
	1) administrative staff Immersion	\$ (254,129)
	2) administrative staff Language Services	\$ (622,248)
	3) administrative staff in positions due to bilingualism	\$ (1,245,188)
C	Adjusted salary mass (A - B)	\$ 152,764,599
D	Adjusted salary mass + benefits (C + C x 23.98%)	\$ 189,397,550
E	Bilingual overhead associated with administrative staff (D x 3%)	\$ 9,469,878
F	Costs associated with positions directly attributable to the bilingual nature of the university	\$ 2,238,357
G	Total administrative staff costs (E+F)	<b>\$ 11,708,235</b>

The cost estimates for computer services are based on expenses for software and work time spent by computer staff producing bilingual databases and interfaces as we have an in-house Student Information System, fully bilingual on content, administrative and client interfaces, similar to the Federal Government presence on the web. The 30% ratio was confirmed recently in replies to a request for proposal to replace our in-house system by a commercial one. It is only by coincidence that it is similar to the proportion of francophone student population.

<sup>7</sup> Vaillancourt, F.; Coche, O. (2009) *Official Language Policies at the Federal Level in Canada: Costs and Benefits in 2006*. Fraser Institute. Vaillancourt, F.; Coche, O.; Cadieux, M.A.; Ronson, J.L. (2012) *Official Language Policies of the Canadian Provinces: Costs and Benefits in 2006*. Fraser Institute.

<b>Computing Services</b>	
Software rentals	\$ 113,276
Software purchases	\$ 3,577,574
Software maintenance	\$ 4,797,660
<b>Total</b>	<b>\$ 8,488,510</b>
Incremental cost at 30%	30%
<b>Estimated incremental cost</b>	<b>\$ 2,546,553</b>

We used the same 30% ratio for publicity and advertising.

<b>Publicity and Advertising</b>	
Total cost of publicity/advertising	\$ 2,093,651
Total cost of web design (professional contracts)	\$ 134,491
<b>Total</b>	<b>\$ 2,228,142</b>
Incremental cost estimated at 30%	30%
<b>Incremental cost estimated</b>	<b>\$ 668,443</b>

In summary, the incremental costs of bilingualism for the current level of service provided by the University to its students and the community amounts to \$49M. Taking into account the existing funding of \$32M the University still has to divert \$17M from its operating budget, an amount which should really be devoted to the quality of programming in terms of reducing class sizes and improving the student/professor ratio.

<b>Summary for Current Level of Service</b>	
Incremental costs of teaching staff	\$ 22,670,474
Incremental costs of academic support staff	\$ 2,912,749
Sub-total	\$ 25,583,223
Second Language Training	\$ 6,209,121
Immersion	\$ 336,774
Library	\$ 3,125,076
Translation	\$ 1,321,085
Publishing, printing, stationary and supplies	\$ 1,428,065
Administrative overhead	\$ 7,920,284
Computing services	\$ 2,546,553
Publicity and Advertising	\$ 668,443
Sub-total	\$ 23,555,401
<b>Total incremental cost of current level of service</b>	<b>\$ 49,138,624</b>
<b>Current financing</b>	<b>\$ 32,154,329</b>
<b>Current Shortfall</b>	<b>\$ 16,984,295</b>



## Accessibility and Equity Enhancement

The OCUA methodology focused almost exclusively on costs incurred at the current level of service provided. However, from an equity perspective, it is important that we also address the breadth and quality of programs that are made available to Franco-Ontarians. Accordingly, it is necessary to expand our educational offerings to address the needs of the francophone community and to ensure that existing programs in French are of the same quality as those offered in English. This implies offering more diverse and advanced courses and programs in French. In 2005, the Rae Review has indicated that “the funding formula for both colleges and universities needs to reflect the additional challenges of providing French language higher education in a province that has a substantial English-speaking majority”. One such challenge is precisely that of offering the same diversity of access and choice in course content.

For 2012-13, the University of Ottawa’s database indicated that 1,824 distinct course topics were scheduled in English while only 740 were scheduled in French<sup>8</sup>. Thus, 1,084 topics or 542 FCEs would be required to equate the richness of teaching in both languages. However, since the French speaking student body is smaller than its English speaking counterpart, it would not necessarily be possible to populate as many distinct courses. To take this into account, we further prorated by .45 according to the ratio of French (13,000) to English (29,000) speaking students on campus.

<b>Accessibility and Quality Enhancement</b>	
Teaching Cost of supplemental courses	\$ 25,583,223
FCE in supplemental cost above	487.6
Estimated share to calculate cost (542 / 488)	111%
Estimated cost of richness	\$ 28,397,378
Proportion French to English students (fall 2012)	45%
Share of richness	<b>\$ 12,778,820</b>

## Total Costs and Benefits

The ultimate goal of the University of Ottawa is to be able to offer an education that is equally diverse and comprehensive in both French and English. Adding the costs currently incurred to the costs necessary to equate richness, the total cost is realistically evaluated at \$62M.

<b>Description</b>	<b>Annual Amount</b>
Supplementary costs for current service	\$ 49M
Accessibility and equity enhancement	\$ 13M
<b>Total Cost</b>	<b>\$ 62M</b>
Current financing	\$ 32M
<b>Total Shortfall</b>	<b>\$ 30M</b>

As explained in the historical context, opening a separate French only university would duplicate fixed costs easily reaching a similar value but being unproductive. By comparison, the \$62M

<sup>8</sup> This database assessment was based on the new trend of designing courses at 3 rather than 6 credits per course. To convert to FCE, the number of courses is divided by two.

identified here would not only alleviate the current underfinancing and thus improve quality in terms of class size and student/professor ratio, but also enhance the richness and diversity of the education available to Franco-Ontarians. This is a high performance solution.