



Ecoles européennes

Bureau du Secrétaire général
Unité de développement pédagogique

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Evaluation externe de la proposition de réorganisation des études au cycle secondaire (S4 – S7)

Rapport intermédiaire

CONSEIL SUPERIEUR

Réunion des 15, 16 et 17 avril 2015 – Prague

I. Contexte

Le Conseil supérieur des 3, 4 et 5 décembre 2013 a analysé la proposition du GT 'Organisation des études' et a décidé d'adopter, pour une entrée en vigueur au 1^{er} septembre 2014, les propositions relatives aux années secondaires 1 à 3.

En ce qui concerne les propositions relatives aux années secondaires 4 à 7, une demande d'évaluation externe conduite par un Centre Universitaire ou un réseau de Centres Universitaires, a été formulée au sein du Groupe de Travail et soutenue par le Conseil d'Inspection Secondaire et par le Comité Pédagogique Mixte. Cette demande a été approuvée par le Conseil supérieur de décembre 2013.

A cette fin, un appel d'offres a été lancé, dont le travail préparatoire a été supervisé par un groupe de travail, comme indiqué par le Conseil supérieur.

En date du 18 juillet 2014, à l'issue de la procédure d'appel d'offres, le contrat a été attribué à l'Institute of Education (University of London).

Suivant la planification approuvée par le Conseil supérieur, le Comité d'Inspection mixte (CIM) et le Comité pédagogique mixte (CPM) doivent être tenus informés de l'état d'avancement des travaux. De même, le Comité budgétaire et le Conseil supérieur seront informés pendant leur réunion de mars et avril 2015.

II. Planification

Les prochaines étapes à parcourir, approuvées par le Conseil supérieur des 8-10 avril 2014 (Document 2014-02-D-33-fr-4) sont :

1. Réception du rapport intermédiaire au plus tard le 15 janvier 2015.
2. Discussion du rapport intermédiaire au sein du Conseil d'Inspection secondaire et du Comité pédagogique mixte de février 2015.
3. Suite aux discussions au sein des Comités pédagogiques, envoi du feedback aux évaluateurs externes par le Bureau central, avec l'appui du Groupe de Travail mandaté par le Conseil supérieur.
4. Réception du rapport final au plus tard le 30 juin 2015.

Le groupe de travail mandaté par le Conseil supérieur se réunira le 16 février 2015 pour synthétiser les discussions qui auront eu lieu au sein des comités pédagogiques afin d'envoyer le feedback à l'équipe de l'Institute of Education.

III. Avis du Conseil d'Inspection mixte

Le Conseil d'Inspection mixte a pris note du rapport intérimaire relatif à l'évaluation externe de la proposition de réorganisation des études au cycle secondaire (S4-S7).

IV. Avis du Comité pédagogique mixte

Le Comité pédagogique mixte émet un avis partagé quant à savoir si le rapport répond complètement aux conditions indiquées dans le cahier des charges.

Le Groupe d'évaluateurs externes tiendra compte dans le rapport final prévu pour le mois de juin des remarques faites en séance et dans le feedback officiel qui lui sera envoyé ultérieurement par e-mail. Plus précisément, les demandes suivantes sont formulées :

- Une comparaison claire entre l'organisation des études actuelle et celle qui est proposée ;
- Une approche plus globale et européenne ;
- Davantage d'attention portée à l'accès à toutes les Universités en Europe pour tous les élèves des Ecoles européennes.

V. Avis du Comité budgétaire

Le Comité budgétaire a pris note du rapport intermédiaire ainsi que des autres documents repris à l'Annexe I au présent document.

VI. Proposition

Pour son information, le Conseil supérieur est invité à prendre connaissance du rapport intermédiaire et des autres documents repris à l'Annexe I au présent document.

Traduction française du résumé analytique du rapport intermédiaire

Évaluation externe d'une proposition de réorganisation des études secondaires dans le système des Écoles européennes

Sandra Leaton Gray, David Scott, Didac Gutierrez-Peris, Peeter Mehisto, Norbert Pachler et Michael Reiss

Deuxième rapport : le programme

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Résumé analytique

Le présent rapport a été rédigé en réponse à l'*Appel d'offres « Évaluation externe d'une proposition de réorganisation des études secondaires dans le système des Écoles européennes pour les années 4, 5, 6 et 7 »*, réf. BSGEE/2014/01. Ce rapport intermédiaire constitue la deuxième phase du projet et précède le rapport final, qui comprendra un examen très complet sous tous les angles, dont une évaluation approfondie et très détaillée de la proposition de réorganisation. En outre, il nous a été demandé de rédiger un résumé analytique approfondi. Il s'agit du deuxième rapport d'une série qui en comportera trois. Ce rapport porte sur le programme, et en particulier sur cinq dimensions :

1. Une compétence essentielle : communiquer en langue maternelle ;
2. Une compétence essentielle : communiquer en langues étrangères ;
3. Les compétences en mathématiques, les compétences de base en sciences et technologies, et le rôle de l'éducation religieuse ;
4. La conception du programme dans les écoles ;
5. Les Écoles européennes et l'accès à l'enseignement supérieur.

Trois principes sous-tendent les suggestions que nous faisons pour le nouveau programme. Le premier : contrairement au programme minimaliste proposé par le Conseil supérieur, chaque compétence doit être subdivisée en composantes de la connaissance, compétences et dispositions. Le deuxième : les normes des programmes d'études (découlant des huit compétences) ne sont pas les mêmes que les normes pédagogiques (les dispositions que nous prenons dans les écoles pour permettre à l'apprentissage d'avoir lieu, et qui comprennent les processus formatifs d'évaluation) ou que les normes en matière d'évaluation (comment nous déterminons si les normes des programmes sont respectées à des moments prédéfinis). Ce que signifie ceci, c'est que le fondement de tout programme est l'ensemble de normes qui s'y rapportent dont le système éducatif des Écoles européennes a décidé qu'elles constituaient les formes les plus appropriées de connaissances, de compétences et de dispositions pour l'apprentissage à l'école, et non les normes en matière d'enseignement ou d'évaluation. Les méthodes d'enseignement, d'apprentissage et d'évaluation découlent de ces normes relatives au programme. C'est pourquoi il est important qu'une telle norme ne soit en aucune manière compromise par le fait qu'elle puisse ou non servir de construction mentale vérifiable ou de méthode pédagogique. Troisièmement, les normes relatives au programme doivent être suffisamment compréhensibles pour que les enseignants, les parents et les élèves puissent les utiliser.

Communiquer en langue maternelle

La compétence de la communication dans la langue maternelle est fondamentale pour le programme éducatif offert par les Écoles européennes, et nous suggérons qu'elle comporte six dimensions : la compréhension écrite, l'expression écrite, l'expression et la compréhension orales, la multimodalité, la connaissance de la langue et de la communication, et enfin les dispositions linguistiques et les dispositions pour la communication. Toutes ces dimensions sont interconnectées, et toute réciprocity doit être exploitée par les programmes d'enseignement et d'apprentissage. Cette compétence sert quatre objectifs généraux :

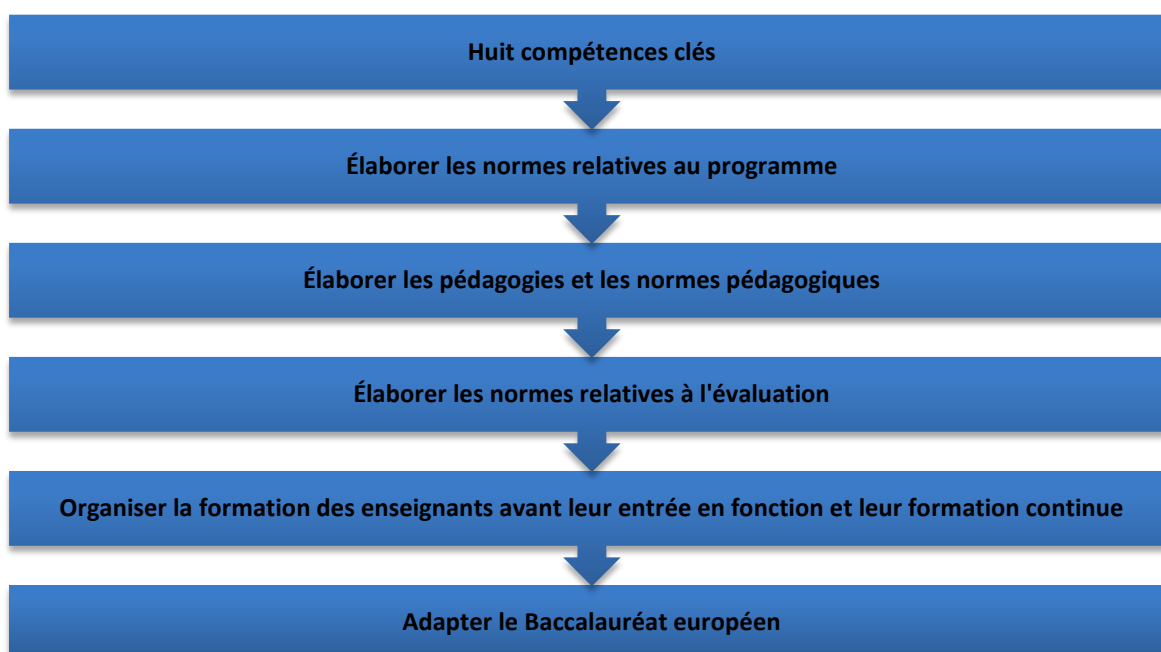
1. *Utiliser la langue pour communiquer (oralement et par écrit) et pour apprendre* – Les élèves doivent utiliser la langue pour interpréter, comprendre et transformer le monde, acquérant ainsi des connaissances qui leur permettront de poursuivre leur apprentissage tout au long de la vie. Ils devront communiquer de manière efficace et avec délicatesse dans différents contextes et situations, ce qui leur permettra d'exprimer clairement leurs sentiments, leurs idées et leurs opinions en connaissance de cause et en étayant leurs propos, et de communiquer avec les autres en respectant leur point de vue.
2. *Identifier les propriétés de la langue dans différentes situations de communication* – Les élèves devront notamment avoir conscience des caractéristiques et du sens des textes, en fonction de leur type, du contexte dans lequel ils sont utilisés et des personnes auxquelles ils s'adressent. Cette dimension désigne également l'utilisation des différents modes de lecture, en fonction du but du texte et des caractéristiques et particularités du lecteur. En outre, elle désigne la production de textes écrits tenant compte du contexte, du destinataire et des objectifs poursuivis, et l'utilisation de différentes stratégies de lecture.
3. *Analyser les informations et utiliser la langue pour prendre des décisions* – Le but est que les élèves développent leur capacité d'analyse et d'évaluation critique des informations provenant de diverses sources, afin de prendre des décisions éclairées pour ce qui est des intérêts collectifs et des normes applicables dans différents contextes, en se basant sur diverses sources d'informations écrites et orales.
4. *Valoriser la diversité linguistique et culturelle de l'Europe et des autres nations* – Les élèves doivent se rendre compte de la richesse linguistique et culturelle de l'Europe et de sa variété et les apprécier, tout comme les autres langues, qui sont des formes d'identité ; ils doivent aussi chercher à employer la langue parlée et écrite pour interpréter et expliquer divers processus sociaux, économiques, culturels et politiques dans le cadre de la culture démocratique et de l'exercice de la citoyenneté.

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En ce qui concerne les huit compétences clés, nous suggérons au Groupe de travail des Écoles européennes pour la réorganisation des études secondaires de :

1. Clarifier et étendre le programme minimaliste actuel, surtout par rapport aux huit compétences clés. Celles-ci formeront alors un ensemble de normes relatives au programme.
2. Concevoir des pédagogies et des normes pédagogiques au départ de ces normes relatives au programme, plutôt que de les fusionner.
3. Tirer les normes d'évaluation, et en particulier le Baccalauréat européen, des normes relatives au programme, et éviter les problèmes que posent les programmes qui reposent sur l'évaluation.
4. Tout ce qui précède doit être clair et compréhensible, de sorte que les élèves, les parents et les enseignants puissent aisément le comprendre.
5. La formation des enseignants avant leur entrée en fonction et leur formation continue doivent constituer un aspect capital de toute réforme, afin de mettre en place ce nouveau programme et ses composantes.
6. Le Baccalauréat européen doit être adapté à la nouvelle conception du programme, ainsi qu'aux exigences de l'entrée à l'université ou dans un établissement d'enseignement supérieur, et de l'étude à ce niveau.

Figure 1 : Procédure d'élaboration du programme



Communiquer en langues étrangères

La politique linguistique des Écoles européennes a été abordée dans notre premier rapport. Dans ce rapport-ci, nous formulons quelques recommandations à ce sujet, qui sont longuement développées et étayées. Les voici en bref :

1. Il convient d'élaborer une politique linguistique qui encourage explicitement le bilinguisme, le trilinguisme et le multilinguisme, grâce à un processus inclusif associant tous les acteurs. Celle-ci doit couvrir toute la période de scolarisation, de l'école maternelle à la fin du cycle secondaire.
2. Des objectifs linguistiques doivent être intégrés aux programmes de toutes les matières, que celles-ci soient enseignées dans la LI, la LII ou la LIII des élèves.
3. Les programmes de LII du cycle secondaire doivent être révisés afin qu'ils intègrent un contenu plus substantiel et chargé de sens, y compris un contenu culturel.
4. Les politiques d'évaluation doivent être revues afin de s'assurer qu'elles facilitent l'accomplissement de la mission d'apprentissage des Écoles européennes ; l'évaluation formative, en particulier, doit être utilisée comme outil d'apprentissage des langues.
5. La qualité de l'enseignement et de l'apprentissage des élèves doit passer au premier rang des priorités politiques, de sorte que l'apprentissage soit le moteur des Écoles européennes, multilingues et multiculturelles.
6. Des systèmes adaptés doivent être bien en place pour aider les apprenants en langues qui ont des besoins plus élevés à cet égard.

Les programmes de Mathématiques, de Sciences et d'Éducation religieuse

Il nous a été demandé d'accorder une attention particulière aux programmes de Mathématiques, de Sciences et d'Éducation religieuse dans le contexte de modifications éventuelles du programme d'études ; nous formulons donc plusieurs recommandations en la matière.

Mathématiques

Pour qu'un programme de Mathématiques soit couronné de succès, il faut des liens étroits entre ce que les élèves étudient et leur compréhension de la pertinence de cette matière. Il importe également de veiller à ce que les différents thèmes du cours de Mathématiques soient soigneusement synchronisés, et leurs interconnexions pleinement exploitées. Il faut également tenir compte de ce que l'on appelle les « grandes idées » en mathématiques (Kuntze *et al.*, 2011), et le programme doit être conçu de manière à maximiser les connaissances mathématiques de la population. Les connaissances mathématiques doivent :

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- Présenter un grand potentiel de développement de connaissances conceptuelles ;
- Avoir une grande pertinence pour l'édification de connaissances des mathématiques en tant que science ;
- Appuyer la communication et les arguments liés à aux mathématiques ;
- Encourager la réflexion chez les enseignants.

Au niveau de la classe, les connaissances peuvent être subdivisées en sept domaines mathématiques (Watson *et al.*, 2013) : les relations entre les quantités et les expressions algébriques, les pourcentages et le raisonnement proportionnel, l'établissement de liens entre mesure et décimales, le raisonnement spatial et géométrique, le raisonnement au sujet des données, le raisonnement au sujet de l'incertitude, et les relations fonctionnelles entre des variables. Des liens étroits doivent être créés entre ces aspects du programme et la progressivité, des filières spéciales destinées aux élèves qui ont besoin d'un cours de Mathématiques d'un plus haut niveau en prévision de leur profession ou de leurs études futures, et l'utilisation de contextes et d'applications pour les mathématiques dans la vie réelle.

Le programme de Mathématiques actuel des Écoles européennes comprend des demandes très différentes en S4 et en S5, et il peut largement dépasser ce que l'on demande normalement à des élèves âgés de 15-16 ans. Le programme de Mathématiques, cours approfondi, de S6 est proche du niveau universitaire. Dans l'ensemble, la majorité des élèves a peu de chances de pouvoir progresser de manière satisfaisante tout au long du programme tel qu'il se présente actuellement. Dans une certaine mesure, ce problème est atténué par l'accent mis sur ce que les élèves doivent être capables de réaliser, au lieu de simplement donner une liste de sujets, bien qu'il semble que les examens actuels ne récompensent pas suffisamment la compétence importante qu'est l'enquête mathématique, par exemple.

C'est pourquoi nous recommandons de :

1. Réduire les exigences mathématiques actuellement imposées à tous les élèves, afin de faire en sorte qu'elles correspondent aux attentes futures des universités et des établissements d'enseignement supérieur, et qu'un maximum d'élèves puisse réaliser leur potentiel en Mathématiques, plutôt que de voir un grand nombre d'élèves débrayer.
2. Abandonner le cours semi-approfondi de la S4, et renommer le cours fondamental de la S4 « cours semi-approfondi ».
3. Réécrire les programmes fondamentaux de S6 et S7 afin de mieux aider les élèves qui étudient les sciences et les autres matières pour lesquelles les Mathématiques sont utiles.
4. Utiliser davantage le contexte et les explications, surtout jusqu'en S5 et pour le cours fondamental en S6-S7.

5. Revoir la conception des examens pour récompenser les élèves qui ont acquis des compétences en matière d'enquête mathématique.

Sciences

Au cœur de nos recommandations pour le programme de Sciences, nous mettons l'accent sur l'apprentissage des élèves. En ce qui concerne le contenu, les programmes de Sciences sont bien trop souvent considérés comme surchargés, rassemblant des sujets isolés les uns des autres, et faisant peu ressortir ce que l'on pourrait appeler la « vue d'ensemble ». Dans ce rapport, nous énumérons *dix* idées de la science, et *quatre* idées au sujet de la science, tirées de Harlen *et al.* (2009), dont nous estimons qu'elles jouent un rôle déterminant dans l'élaboration d'un programme de Sciences efficace, et dont beaucoup se retrouvent déjà dans le programme existant.

Les programmes de Sciences actuels des Écoles européennes semblent solides, surtout pour les raisons suivantes :

- Ils couvrent bien la matière, et notamment des sujets importants comme l'évolution de l'homme, y compris son évolution culturelle ;
- Il existe des liens explicites entre les disciplines, par exemple entre les Sciences et l'Informatique, les Mathématiques et la Géographie ;
- Ils sont influencés par l'histoire, l'éthique, la culture et les technologies ;
- Ils comprennent de la matière en rapport avec la nature des Sciences, par exemple des phénomènes, des faits, des lois, des définitions, des concepts et des théories scientifiques ;
- Ils dépassent le programme par moments, ce qui permet aux élèves de se faire une idée de la « vue d'ensemble » sans qu'on ne leur demande l'impossible ;
- Et enfin, ils suggèrent des activités pratiques utiles.

Néanmoins, en dépit de ces remarquables points forts, une actualisation judicieuse de ces programmes est nécessaire, et nous formulons plusieurs recommandations à leur égard :

1. Pour les cinq premières années du secondaire, se concentrer sur les « grandes idées » des Sciences plutôt que d'entrer dans des détails trop pointus ;
2. Actualiser les programmes, surtout en Physique, et réduire les exigences mathématiques ;
3. Veiller à ce que le programme ne « saute » pas brutalement d'une année à l'autre ;
4. Envisager de présenter le programme sous la forme de normes d'apprentissage plutôt que sous la forme de liste de sujets à étudier ;
5. Faire attention à ce que les modifications apportées n'entraînent pas une réduction du nombre d'élèves qui étudient les trois sciences : la Physique, la Chimie et la Biologie ;

6. Veiller à ce que les examens portent sur l'ensemble des objectifs et du contenu des programmes, plutôt que seulement sur la matière la plus facile à évaluer, surtout en ce qui concerne la nature des Sciences et les influences historiques, sociales, éthiques, culturelles et technologiques des Sciences ;
7. Envisager de supprimer la possibilité de choisir des questions dans les questionnaires d'examen comportant des questions fermées ;
8. Lors des examens, rendre un plus grand pourcentage de points de Physique accessible aux candidats qui n'ont pas un très bon niveau en mathématiques.

Éducation religieuse

Dans ce rapport, nous abordons sous différents angles l'éducation religieuse et son rôle dans une société moderne. Ses buts peuvent être, entre autres, de préserver la foi, de faire découvrir une ou plusieurs religions aux élèves, et de leur présenter des thèmes philosophiques et éthiques. Nous pensons que les Écoles européennes ont de grandes chances d'aider leurs élèves à comprendre le rôle de la religion au sein de la société moderne, et nous considérons qu'elles peuvent y arriver sans affaiblir la foi des élèves de l'une ou l'autre confession ni convertir les athées. Les rôles de la religion dans les Écoles européennes nous semblent être de favoriser la compréhension, de clarifier les valeurs et de promouvoir un niveau suffisant de tolérance. C'est pourquoi nous proposons quelques pistes, qui renforceront aussi l'éducation des élèves actuellement inscrits au cours de Morale non confessionnelle :

1. Créer un tronc commun pour l'éducation religieuse qui repose sur les objectifs communs actuels des programmes existants (catholicisme, protestantisme, islam et religion orthodoxe) ;
2. Ce tronc commun devrait comprendre une version plus rigide du cours de Morale non confessionnelle actuel et présenter l'humanisme de manière aussi positive que la religion ;
3. Le nouveau programme devrait obliger tous les élèves à étudier au moins deux religions, dont une au maximum serait d'une confession chrétienne ;
4. Le but de ce programme devrait ne pas être confessionnel.

La conception du programme des Écoles

Nous sommes d'avis que le programme d'études pourrait être modifié de plusieurs façons et qu'une bonne solution à tous les problèmes que nous mentionnons dans ce rapport demande de faire des choix judicieux et cohérents entre les différentes possibilités. Une réponse complète et exhaustive au document présenté par INTERPARENTS (« Réponse d'INTERPARENTS au Premier rapport des évaluateurs de l'Institut de l'éducation de

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l'Université de Londres, et conseils d'INTERPARENTS à cet égard ») sera apportée bientôt et complétera ce rapport. Entre-temps, nous observons que la conception du programme d'études suggérée dans le document d'INTERPARENTS ne peut être pleinement expliquée et justifiée sans en exposer en détail tous les fondements dans une théorie du programme d'études, c.-à-d. sans préciser ce qu'est un programme d'études, ce que sont ses différentes composantes, et comment s'articulent ces différentes composantes. C'est là ce que nous avons tenté de faire dans notre premier rapport et dans ce deuxième rapport.

La conception du programme d'études concerne :

- Les matières du programme des Écoles européennes.
- Les types de frontières entre les matières du programme d'études des Écoles européennes. [Par exemple la langue, la littérature, les mathématiques, la physique, la biologie, la chimie, une langue étrangère, l'éducation physique, l'histoire, la géographie, la sociologie, les arts, la musique et le théâtre illustrent des frontières marquées entre les différentes matières. Voici maintenant un exemple de frontières ténues entre différentes matières : les études linguistiques, les sciences, les mathématiques, les sciences humaines, les arts, l'éducation physique et les langues étrangères. Dix modèles d'intégration programmatique peuvent être identifiés, qui vont des programmes fortement classifiés et fortement charpentés, comme dans la première approche, aux approches de la planification programmatique axées sur la mise en réseau, à peine classifiées et charpentées, comme dans la seconde approche. Entre ces deux extrêmes, à savoir les approches traditionnelles ou fragmentées et les approches axées sur la mise en réseau, il existe huit autres points sur un continuum : connecté, imbriqué, en séquence, partagé, enchevêtré, en fil, intégré et immergé.]
- La désignation de domaines obligatoires du programme que tous les élèves du système des Écoles européennes doivent étudier, ainsi que pour chacun de ces domaines l'attribution d'un nombre de périodes hebdomadaires, la détermination de la durée d'une période, et dans certains cas l'adoption d'un mode pédagogique différent (en Sciences, on peut distinguer les cours théoriques et les cours pratiques).
- La désignation de domaines facultatifs du programme que tous les élèves du système des Écoles européennes doivent étudier, ainsi que pour chacun de ces domaines, également, l'attribution d'un nombre de périodes hebdomadaires, la détermination de la durée d'une période, et dans certains cas l'adoption d'un mode pédagogique différent (en Sciences, on peut distinguer les cours théoriques et les cours pratiques).
- Les décisions prises quant à la répartition en classes homogènes et au groupement selon les aptitudes, qui se rapportent aux domaines obligatoires et facultatifs du programme d'études des Écoles européennes. De ce fait, des classes homogènes ou des groupes d'élèves d'un même niveau de compétences pourraient être créés au sein de chaque école,

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ou bien une politique visant à regrouper dans tout l'horaire des élèves de différents niveaux de compétences pourrait être adoptée dans les écoles.

- La taille des classes et les modalités pédagogiques relatives aux politiques pour la répartition en classes homogènes et le groupement selon les aptitudes, les matières obligatoires et facultatives, *et* les programmes fortement classifiés et charpentés ou les approches de la planification curriculaire axées sur la mise en réseau, qui sont à peine classifiées et à peine charpentées.
- Les ressources allouées, dont les ressources en personnel enseignant, compte tenu des enjeux du programme énumérés plus haut.
- Les mécanismes de centralisation et de décentralisation au sein du système des Écoles européennes, c'est-à-dire qu'il faut déterminer si ces décisions concernant le programme doivent s'appliquer à tous les éléments du système ou si certaines sortes d'écoles du système devraient pouvoir prendre elles-mêmes ces décisions relatives au programme. Autrement dit, la décision qui doit être prise est de savoir si le programme doit être uniforme ou s'il faut instaurer une certaine diversité au sein du système à ce niveau.
- Les conséquences de ce genre de décisions pour les Écoles ; par exemple, certaines de ces décisions ont des implications pour les éléments constitutifs du Baccalauréat. Elles ont aussi des implications pour l'accès à l'enseignement supérieur.

Ces questions seront abordées dans ce rapport puis revues dans le rapport final.

Il nous semble que plusieurs hypothèses et espoirs ancrés dans la proposition de réorganisation des études secondaires ne sont étayés par aucune donnée disponible. Dans ce rapport, nous examinons un certain nombre de questions qui y ont trait. Parmi celles-ci :

1. La possibilité de rationaliser les cours au cycle secondaire ;
2. La possibilité de faire correspondre les matières disponibles aux préférences des élèves ;
3. L'harmonisation de l'offre au sein des Écoles européennes ;
4. La conformité de l'offre avec les huit compétences clés ;
5. La réduction du taux d'échecs.

Nous formulons donc quelques recommandations :

1. Nous proposons un système de cheminement par matière qui, associé à l'emploi judicieux de matières facultatives, offre la possibilité de créer des programmes d'enseignement cohérents et flexibles pour les élèves tout en garantissant une équité accrue dans les Écoles européennes. Il convient d'observer que le système de cheminement illustré dans ce rapport est un premier jet, et que nous nous attendons à un débat animé entre les acteurs du système lorsqu'il sera peaufiné afin de créer un modèle fonctionnel et

- approprié. Nous appelons nos lecteurs à le considérer comme le point de départ d'un débat.
2. Il faudrait un système d'évaluation basé sur un portfolio qui soit utile en cas de transfert au sein du système des Écoles européennes ou en dehors de celui-ci, en cas de déménagement de la famille, et au cas où le niveau atteint par un élève varierait selon les matières à différents moments en raison de problèmes liés à la puberté, d'un déménagement compliqué ou de problèmes familiaux. Ceci contribuerait à la réduction du nombre d'élèves contraints de redoubler une classe, un incident déconseillé par la littérature.
 3. La taille des groupes devrait être revue en tenant compte de la langue. Le choix des langues enseignées et des matières concernées devrait être plus clairement justifié, et les raisons de ce choix clairement exposées, afin de déterminer le mode d'utilisation des ressources et les approches pédagogiques les plus efficaces.
 4. Les cours d'Éducation religieuse devraient être réorganisés en vue de rationaliser la taille des groupes. Le fondement philosophique et pédagogique de la réorganisation de l'Éducation religieuse est expliqué plus haut dans ce document, et nous estimons que les changements conseillés ici présenteraient de nouveaux avantages sur le plan de la rationalisation des cours.
 5. Les heures et les périodes doivent être décomposées, de sorte que la durée de l'enseignement ne soit plus considérée comme représentative de la difficulté de la matière, et donc de son statut.
 6. Pour l'enseignement de la LI, pour lequel cette disposition s'avère adaptée, il faudrait recourir de plus en plus systématiquement au regroupement vertical.

Nous sommes d'avis que le programme d'études pourrait être modifié de plusieurs façons et qu'une bonne solution à tous les problèmes que nous mentionnons dans ce rapport demande de faire les bons choix entre les différentes possibilités.

Les Écoles européennes et l'accès à l'enseignement supérieur

L'admission à l'université représente un domaine de préoccupation constant des parents et des élèves des Écoles européennes, bien que les États membres soient légalement obligés d'accepter les diplômés des Écoles européennes au même titre que ceux qui ont fréquenté une école dans leur patrie, comme stipulé à l'Article 5.2.

Nous avons donc recueilli quelques données à ce sujet, que nous présentons dans ce rapport. Bien qu'il soit relativement difficile de trouver des données définitives et détaillées concernant la destination choisie par les élèves, car elles ne semblent pas centralisées, nous pouvons affirmer qu'environ 50 % des diplômés des Écoles européennes introduisent une demande d'admission à l'université au Royaume-Uni. Nous avons donc utilisé les données de

Deuxième rapport d'évaluation du système des Écoles européennes

l'Université de Cambridge, considérée comme une université réservée à l'élite au Royaume-Uni, et de l'École de Culham, pour donner une idée de la voie typique suivie par une partie des élèves des Écoles européennes. Il ne s'agit clairement pas de données exhaustives, mais ces données doivent être considérées comme révélatrices, et nous ne voyons pas de raison de présumer qu'elles ne sont vraiment pas représentatives.

En ce qui concerne l'entrée à l'Université de Cambridge en 2013-2014, le taux de réussite avoisine les 16,3 %, ce qui est inférieur à la moyenne globale (22 %), mais supérieur au taux de réussite typique des étudiants qui n'ont pas étudié dans une école du Royaume-Uni (13 %). Ceci suggère que le taux d'admission des candidats des Écoles européennes à l'Université de Cambridge est à peu près le même que le taux auquel on s'attendrait, au vu du contexte et de l'éventail de nationalités concernées.

En ce qui concerne l'admission dans les autres universités, y compris dans des facultés à sélection très concurrentielle, nous constatons qu'entre 2009 et 2013, deux élèves de l'École de Culham ont réussi à intégrer la faculté de médecine, l'un à Munich et l'autre à Prague. D'anciens élèves de Culham ont récemment été admis dans 29 universités différentes d'Europe continentale ainsi qu'au Trinity College Dublin en Irlande, et hors de l'Europe ils ont été admis à Dunedin en Nouvelle-Zélande et dans des universités aux États-Unis telles que Berkeley en Californie et le MIT. Culham est donc typique, et une fois encore, il semblerait que les parents n'aient aucune raison de s'inquiéter.

Nous pouvons encore ajouter que le gouvernement britannique a récemment adressé des directives explicites quant au Baccalauréat européen aux responsables de l'admission des universités du Royaume-Uni, ce que nous considérons comme une étape positive qui garantira aux élèves des Écoles européennes une transition sans problème vers la formation universitaire qui leur convient, et nous espérons que d'autres universités sur la scène internationale pourront utiliser ce document très utile, qui est mis à disposition gratuitement dans le domaine public.

Dans le troisième et dernier rapport, nous reverrons quelques questions essentielles :

- La conception du programme ;
- La pédagogie dans l'ensemble du programme ;
- Le niveau de compétences du corps enseignant ;
- Le Baccalauréat européen ;
- Le taux de décrochage ;
- L'admission à l'université.

Version intégrale du rapport intermédiaire (EN uniquement)

External Evaluation of a Proposal for the Reorganisation of Secondary Studies in the European School System

**Sandra Leaton Gray, David Scott, Didac Gutierrez-Peris, Peeter Mehisto,
Norbert Pachler and Michael Reiss**

Second Report: The Curriculum

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Executive Summary

This report has been written in response to the *Invitation to Tender: External Evaluation of a Proposal for Reorganisation of Secondary Studies in the European Schools for Secondary Years 4, 5, 6 and 7, ref: BSGEE/201401*. The interim report represents phase two of the project and anticipates the final report, in which there will be extensive consideration of all areas, including an in-depth and highly detailed evaluation of the reorganisation proposal. We have been asked in addition, to provide an extended executive summary. This is the second in a series of three reports. This report focuses on the curriculum, and in particular five dimensions:

1. The key competency of communication in the mother tongue.
2. The key competency of communication in foreign languages.
3. Mathematical competence, basic competences in science and technology, and the role of religious education.
4. Curriculum arrangements in the schools.
5. European schools and higher education access.

The suggestions we make for the proposed new curriculum are underpinned by three principles. The first is that contrary to the minimalist curriculum proposed by the Board of Governors, each competency needs to be broken down into knowledge components, skills and dispositions. The second is that these curriculum standards (derived from the eight competencies) are not the same as pedagogic standards (those arrangements in schools we make to allow learning to take place, and this includes formative processes of assessment) or assessment/evaluative standards (how we evaluate whether those curriculum standards have been met at set points in time). What this means is that the foundations of any curriculum are those curriculum standards which the EU system of schooling has decided are the most appropriate forms of knowledge, skills and dispositions for learning in schools, and not teaching or assessment standards. Teaching, learning and assessment approaches are derived from these curriculum standards. It is therefore important that the curriculum standard is not compromised in any way by whether it can or cannot be used as a testable construct or teaching approach. And thirdly, these curriculum standards should be expressed at a level of comprehensibility so that teachers, parents and students are able to access them.

Communication in the Mother Tongue

The competency of communication in the mother tongue is fundamental to the education programme offered by the European Schools, and we suggest that it should have six dimensions: reading, writing, speaking and listening, multi-modality, knowledge about language and communication, and language and communication dispositions. All of these

dimensions are interconnected and any reciprocity needs to be exploited in the teaching and learning programmes. Four general purposes for this competency can be identified:

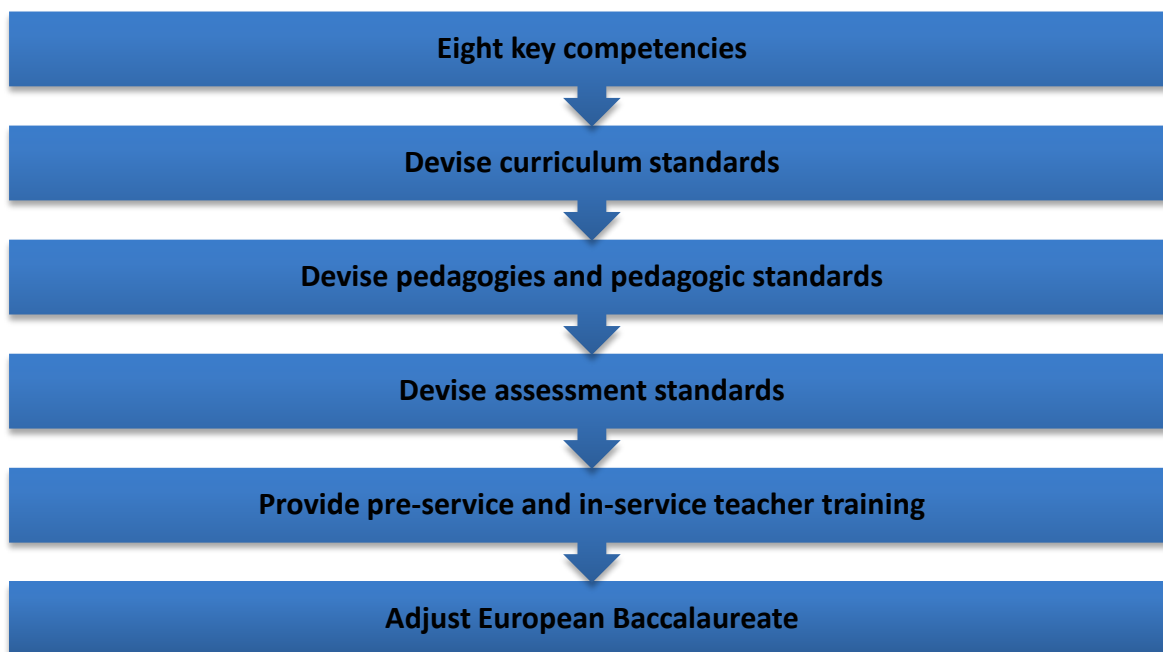
1. *Use language to communicate (in oral and written form) and to learn* - Students should use language to interpret, understand and transform the world, acquiring knowledge that will allow them to continue learning throughout life. This is to communicate in an effective and emotionally sensitive way in different contexts and situations, enabling them to clearly express their feelings, ideas and opinions in an informed manner and supported by evidence, and enabling them to communicate with others, whilst respecting those views.
2. *Identify the properties of the language in different communicative situations* - This includes an awareness of the characteristics and meaning of texts, according to their type, the contexts in which they are used and those people to whom they are addressed. It also refers to the use of different reading modes, depending on the purpose of the text and the characteristics and particularities of the reader. In addition, it refers to the production of written texts that take into consideration context, recipient and intended purposes, and the use of different reading strategies.
3. *Analyse information and use language for making decisions* - The goal is for students to develop their capacity for analysis and critical assessment of information from different sources, in order to make informed decisions, in relation to the collective interests and norms in different contexts, and based on different sources of written and oral information.
4. *Value the linguistic and cultural diversity of Europe and other nations* - Students should recognise and appreciate the linguistic and cultural richness of Europe and its varieties, as well as other languages, as forms of identity; and in addition seek to employ the spoken and written language to interpret and explain various social, economic, cultural and political processes as part of the democratic culture and the exercise of citizenship.

We suggest that with regards to the eight key competencies, the EU Schools Working Group on the Reorganisation of the Secondary Studies should:

1. Clarify and extend the current minimalist curriculum, particularly in relation to the eight key competencies. These then become a set of curriculum standards.
2. Devise pedagogies and pedagogic standards from these curriculum standards, rather than conflating them.
3. Derive assessment standards, and in particular, the European Baccalaureate, from the curriculum standards, and avoid the problems with assessment-driven curricula.

4. All the above needs to be clear and comprehensible so that students, parents and teachers can readily understand them.
5. A key aspect of any reform needs to be pre-service and in-service training of teachers to deliver this new curriculum and its component parts.
6. The European Baccalaureate needs to be adjusted to fit with the new curricular arrangements, as well as university and college entry and study requirements.

Figure 1: Curriculum Development Process



Communication in Foreign Languages

The language policy of the European Schools has been discussed in the first of our reports, and in this new report we make a number of recommendations in this regard, which are developed and substantiated at length. Briefly, these are:

1. A language policy needs to be developed that explicitly fosters bilingualism, trilingualism and multilingualism, via a stakeholder inclusive process. This needs to cover the entire period from nursery education to school leaving age.
2. Language objectives need to be integrated into curriculum documents for all content subjects, regardless of whether these subjects are taught through the students' L1, L2 or L3.
3. Secondary level L2 language curricula need to be revised to ensure they integrate more substantive and meaningful content, including cultural content.

4. Assessment policies need to be revisited to make sure they support the language learning mission of the European Schools, in particular the use of formative assessment as a tool for language learning.
5. The quality of teaching and student learning needs to be moved to the top of the policy agenda in order to ensure that the multilingual and multicultural European Schools are primarily learning-powered institutions.
6. Adequate systems need to be securely in place to support language learners with additional needs with regards to the above.

Mathematics, Science and Religious Education Programmes

We have been asked to pay particular attention to the Mathematics, Science and Religious education programmes in the context of any curriculum changes, and we make a number of recommendations accordingly.

Mathematics

In order for a Mathematics curriculum to be successful, there needs to be a close relationship between what students are studying, and their understanding of its relevance. It is also important to ensure that different mathematical topics are carefully synchronised, with any interrelationships fully exploited. In turn, this needs to take account of what is known as ‘Big Ideas’ in Mathematics (Kuntze *et al*, 2011), and it needs to be designed to maximize mathematical knowledge across the population. Mathematical knowledge should:

- Have a high potential for developing conceptual knowledge;
- Have a high relevance for building knowledge about Mathematics as a science;
- Support communication and mathematics-related arguments;
- Encourage reflective processes of teachers.

These can be broken down further into seven key Mathematical domains at classroom level (Watson *et al*, 2013): relations between quantities and algebraic expressions, ratio and proportional reasoning, connecting measurement and decimals, spatial and geometrical reasoning, reasoning about data, reasoning about uncertainty, and functional relations between variables. These aspects of the curriculum should be carefully linked to issues of progression, special pathways for those requiring higher level Mathematics for future work or study, and the use of contexts and applications for Mathematics in real life.

The current European Schools Mathematics curriculum involves an extensive shift in demand between S4 and S5 and potentially goes well beyond what is normally required for students aged between 15-16. By the S6 Further Syllabus, Mathematics is approaching university

level. Overall, the majority of students are unlikely to be able to progress satisfactorily through the syllabi as currently presented. This is mitigated to a certain extent by the emphasis on what students should be able to do rather than simply providing a list of topics, although it would seem that the current examinations do not reward sufficiently the important skill of mathematical enquiry, for example.

We recommend, therefore, that:

1. The current mathematical demands made on all students should be reduced, in order to ensure that they correspond with later expectations of universities and colleges, and to ensure that as many students as possible achieve their potential in Mathematics rather than a large number effectively disengaging.
2. The S4 Standard course should be abandoned and the S4 Elementary course should be renamed as 'Standard'.
3. The S6 and S7 Elementary syllabi should be rewritten so they better assist students studying the sciences and other subjects where Mathematics is of value.
4. There is an increase in the use of context and explanations, particularly up to S5 and for the S6-S7 Elementary course.
5. The examination is redesigned to reward students who have developed skills of mathematical enquiry.

Science

At the core of our recommendations for the Science curriculum lies an emphasis on student learning. In terms of content, all too often science curricula are regarded as overloaded, with isolated topics and little emphasis on what might be called the 'big picture'. In this report we list *ten* ideas of science, and *four* about science, derived from Harlen *et al.* (2009), that we believe to be instrumental in developing an effective science curriculum, many of which are covered by the existing curriculum.

The current European Schools Science syllabi appear to be strong, particularly in the following respects:

- They cover the subjects well, including important topics as human evolution, including cultural evolution.
- There are explicit interdisciplinary links, for example with ICT, Mathematics and Geography.
- They include historical, ethical, cultural and technological influences.
- They include material on the nature of Science, for example scientific phenomena, facts, laws, definitions, concepts and theories.

- They go beyond the syllabus in places, ensuring that it is possible for students to get a sense of the ‘big picture’ without being required to overextend themselves.
- Finally, they suggest useful practical activities.

However despite these considerable strengths, there is a need for judicious updating, and we make a number of related recommendations:

1. For S1-S5, concentrate on the ‘big ideas’ of science rather than excessive detail.
2. Update the curricula, especially for Physics, and reduce mathematical demands.
3. Ensure the curriculum does not make sudden jumps between years.
4. Consider presenting the curriculum in terms of learning standards rather than a list of topical material.
5. Be cautious about undertaking changes that might reduce the number of students studying all three Sciences: Physics, Chemistry and Biology.
6. Ensure that the examinations cover the full aims and content of the syllabi rather than just the material that is easiest to assess, particularly with regard to the nature of Science and the historical, social, ethical, cultural and technological influences on Science.
7. Consider removing choice from papers with structured questions.
8. Make a higher proportion of Physics examination marks available to candidates who do not have the highest level of mathematics.

Religious Education

In the report we discuss different views surrounding religious education and its role in a modern society. Possible aims include maintaining faith, introducing students to one or more religions, and introducing them to philosophical and ethical issues. We perceive great opportunities for the European Schools in terms of preparing students to deal with the role of religion within modern society, and we consider that this can be achieved without weakening the faith of those students who already belong to a particular faith, or converting those of no faith. We see the role of religion in the European Schools as facilitating understanding, clarifying values and promoting appropriate levels of tolerance. With regard to this, we propose a number of ways forward, and these will also strengthen the education of students currently enrolled in the Non-Religious Ethics course:

1. Create a common core for religious education that builds on current common objectives shared by existing programmes (Catholicism, Protestantism, Islam, and Orthodox Religion).
2. This common core should include a more rigorous version of the present course of Non-Religious Ethics and should present humanism as positively as it portrays religion.

3. The new programme should require all students to study at least two religions, of which no more than one should be of the Christian denomination.
4. The aim of the programme should be non-confessional.

Curriculum Arrangements in the Schools

It is our view that there is a variety of possible curriculum arrangements and that a successful solution to all the issues that we address in this report depends on sensible and coherent choices being made between the various options. A comprehensive and complete response to the document produced by INTERPARENTS ('INTERPARENTS Response and Guidance to the IOE Evaluators First Report') is forthcoming and will form a supplement to this Report. Meanwhile we note that curriculum arrangements as discussed in the INTERPARENTS document cannot be fully explicated and justified without a full and comprehensive underpinning in a theory of curriculum, i.e. what a curriculum is; what its various components are; and how these various components fit together. We have attempted to do this in the first Report and this second Report.

Curriculum Arrangements refer to the following:

- Subject areas in the EU Schools curriculum.
- Types of boundaries between those subject areas in the EU Schools Curriculum. [For example, Language, Literature, Mathematics, Physics, Biology, Chemistry, Foreign Language, Physical Education, History, Geography, Sociology, Art, Music and Drama is an example of strong boundaries between different subjects. An example of weak boundaries between different subjects is as follows: Language Studies, Science, Mathematics, Humanities, Arts, Physical Education and Foreign Languages. Ten models of curriculum integration can be identified and these range from strongly classified and strongly framed curricula, as in the first approach, to weakly classified and weakly framed networked approaches to curriculum planning, as in the second approach. Between the two extremes: traditional or fragmented *and* networked approaches, there are eight other points on the continuum: connected, nested, sequenced, shared, webbed, threaded, integrated and immersed.]
- The designation of compulsory areas of the curriculum which all students in the EU Schools system would be required to take, and the allocation to each of these areas a weekly timeframe, length of period, and in some cases different pedagogic mode, i.e. in Science theory-based and practical lessons may be distinguished.
- The designation of optional areas of the curriculum which all students in the EU Schools system would be required to take, and once again, the allocation to each of these areas of

a weekly timeframe, length of period, and in some cases different pedagogic mode, i.e. in Science theory-based and practical lessons may be distinguished.

- Decisions being made about streaming and setting processes as they relate to compulsory and optional areas of the EU Schools curriculum. This might mean that different streams or sets of students are created within each school; or a policy is adopted in the schools of mixed ability groupings throughout the timetable.
- Size of classes and pedagogic arrangements in relation to streaming and setting policies, compulsory and optional subjects, *and* strongly classified and framed curricula or weakly classified and weakly framed networked approaches to curriculum planning.
- The allocation of resources, including teacher resources, in relation to the curriculum issues set out above.
- Centralising and Decentralising arrangements within the EU School system, i.e. whether these decisions about the curriculum should apply to all parts of the system or that different types of schools within the system should be allowed to make these curriculum decisions by themselves. In other words, the decision that needs to be made is between curriculum uniformity within the system or diversity of provision within the system.
- The consequences of these types of decisions for the Schools; for example, there are implications of some of these decisions on the make-up of the Baccalaureate. There are also implications with regards to higher education access.

These issues will be addressed in this report and then revisited in the final report.

We believe there to be various assumptions and expectations embedded within the proposed reorganization of secondary studies, which are not supported by the available evidence. In this report we examine and discuss a number of issues relating to this. These include:

1. The scope for rationalization of courses in the secondary cycle.
2. The scope for aligning subject availability with student preferences.
3. Consistency of provision across the European Schools.
4. Adherence of provision to the eight key competencies.
5. Reduction in failure rates.

Consequently we make a number of recommendations:

1. We propose a system of subject pathways, which, combined with the judicious use of optional subjects, offer the scope for creating coherent and flexible courses of study for pupils whilst ensuring greater equity across the European Schools. It should be noted that the pathway system illustrated in this report is an early draft, and we anticipate a great deal of discussion amongst stakeholders as it is refined into a workable and appropriate model. We urge readers to see this as a starting point for debate.

2. There should be a portfolio-based system of assessment that is useful in cases of transfer in and out of the European Schools system, in cases of family mobility, and in cases of pupil attainment that may vary across different subject areas at different times due to issues surrounding puberty, complex relocations, and family problems. This will help to reduce the number of students being forced to repeat years, something which the literature advises against.
3. There should be a review of group sizing in relation to language. There needs to be a clearer basis for determining which languages are taught, for which subjects, and for which reason, in order to determining the most efficient pedagogical approaches and use of resources.
4. There should be a reorganisation of religious education courses in order to rationalize group sizes. The philosophical and pedagogical basis for reorganizing religious education is dealt with elsewhere in this document, and we consider that if changes were to be made along these lines, there would be additional advantages in terms of rationalizing provision.
5. There needs to be a decomposition of hours and periods, so duration of tuition is no longer seen as a proxy for difficulty of subject, and consequently its status.
6. There should increasingly be a systematic use of vertical grouping for L1 tuition, where this is appropriate.

It is our view that there is a variety of possible curriculum arrangements and that a successful solution to all the issues that we address in this report depends on right choices being made between the various options.

European Schools and Higher Education Access

University admissions presents an ongoing area of concern for parents of pupils at the European Schools, despite the fact that member states are legally obliged to accept European School graduates on the same basis as those who have attended school in their home countries, as stated in Article 5 (2).

We have gathered a small amount of data in regard to this, and present it in the report. Although definitive and detailed destination data is relatively hard to come by and does not appear to be held centrally, approximately 50% of European Schools graduates apply to attend university in the UK, so we have used data from Cambridge University, categorized as an elite university in the UK, and Culham School, in order to give an indication of typical paths for part of the student body. Clearly this is not comprehensive data, but it should be seen as indicative and we see no reason to presume that it is particularly unrepresentative.

In terms of access to Cambridge University during 2013-2014, success rates are around 16.3% and are therefore lower than the overall average (22%), but higher than the typical success rates for students who have not studied at UK schools (13%). This would suggest that candidates from the European Schools were being accepted to Cambridge University at roughly the rate that would be expected, given the background and spread of nationalities concerned.

In terms of admission to other universities, including highly competitive courses, we note that during 2009-2013, two students from Culham School successfully applied to read medicine, in Munich and Prague respectively. Culham students also recently accessed 29 universities in mainland Europe as well as Trinity College Dublin in Ireland, and outside Europe they were successful in gaining admission to Dunedin in New Zealand, and US universities including Berkeley California, and MIT. Therefore is Culham is typical in this regard, once again it would seem as though parents have no grounds for concern.

We further note that the UK Government recently issued explicit guidance on the European Baccalaureate to university admissions officers in the UK, which we see as a positive step towards ensuring smooth transitions to appropriate university courses for students at the European Schools, and we hope that other universities internationally will feel able to draw on this very useful material, which is freely available in the public domain.

In the third and final report, we will revisit a number of key issues:

- Curriculum Arrangements;
- Pedagogy across the curriculum;
- Skill and competency levels of the teaching workforce;
- The European Baccalaureate;
- Dropout rates;
- University admissions.

Chapter 1: Introduction

On the 9th and 10th February 2012 the Joint Teaching Committee, the institution with a mandate from the Board of Governors to oversee all the pedagogical issues of the European Schools' system, adopted the following document 'New Structure for all Syllabuses in the System of the European Schools' (Board of Governors, 2011). This document maps out the path that the European Schools are taking in relation to pedagogical development:

The European Schools have the two objectives of providing formal education and of encouraging pupils' personal development in a wider social and cultural context. Formal education involves the acquisition of competencies – knowledge, skills and attitudes across a range of domains. Personal development takes place in a variety of spiritual, moral, social and cultural contexts. (Board of Governors, 2011: 2)

Competencies are defined here as a combination of knowledge, skills and dispositions appropriate to the context. Key competencies are those that all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment.

The Reference Framework (cf. Recommendations of the European Parliament and of the Council (2006) On Key Competencies for Lifelong Learning) sets out eight key competencies:

1. Communication in the mother tongue;
2. Communication in foreign languages;
3. Mathematical competence and basic competencies in science and technology;
4. Digital competence;
5. Learning to learn;
6. Social and civic competencies;
7. Sense of initiative and entrepreneurship; and
8. Cultural awareness and expression.

The Reference Framework goes on to suggest that:

The key competencies are all considered equally important, because each of them can contribute to a successful life in a knowledge society. Many of the competencies overlap and interlock: aspects essential to one domain will support competence in another. Competence in the fundamental basic skills of language, literacy, numeracy and in information and communication technologies (ICT) is an essential foundation for learning, and learning to learn supports all learning activities. There are a number of themes that are applied throughout the Reference Framework: critical thinking,

creativity, initiative, problem solving, risk assessment, decision taking, and constructive management of feelings play a role in all eight key competencies. (ibid.)

The new common structure in terms of pedagogy already emphasises the will to connect the European Schools with the educational policy of the European Union. Such a change means de facto that European Schools are the first educational system across Europe to structure their curriculum in terms of the guidelines and the non-binding framework adopted at the European level. This change originates from an innovative idea, which consists in imagining the European Schools system as the first educational system in Europe with a public vocation beyond the control of the member states.

What is relevant to note here is that beyond such a debate, the decision to base the curriculum of the European Schools on the guidelines and priorities set by the European Union is already illustrative of a major development within the system. The document of the Joint Teaching Committee makes official the link between the notion of ‘European schooling’, as developed by the European Schools, and the educational policy of the European Union:

The underlying concept of this structure expresses a change from the contents-oriented syllabus to a competence-based syllabus. The structure of the syllabus is intentionally brief and precise. (Board of Governors, 2011: 1).

The tendency to bring closer the pedagogical objectives of the European Schools with the European Union is also emphasised in the Alicante Declaration on European Schooling made by Interparents, on April 2012, in particular in point 14, where parents

ask that Member States’ determination to invest in the development of quality education, youth and mobility, cultural and linguistic diversity, the European dimension and citizenship as well as a global perspective, Europe 2020-strategy and lifelong learning goals also apply to European Schools. (op.cit.: 2)

The strategy to bring the type of pedagogical curriculum offered at the European Schools closer to the educational policies set by the European institutions is also evident in the changes that were introduced for the European Baccalaureate. When the Board of Governors adopted the final report of the working group ‘Reform of the European Baccalaureate’, it was agreed that the marking/grading criteria would be inspired by the ECTS (European Credit Transfer System), which is the marking criterion used by the European Union at postgraduate level.

1.1 The Curriculum

This report will focus on the curriculum, and, in particular, five aspects:

1. The key competency of Communication in the Mother Tongue;
2. The key competency of Communication in Foreign Languages;
3. The key competency of Mathematical Competence and Basic Competencies in Science and Technology;
4. Curriculum arrangements in the schools;
5. European Schools and Higher Education Access.

The first of these is the language and communication strand.

Chapter Two: The Key Competency of Communication in the Mother Tongue

The suggestions for the proposed curriculum in this chapter are underpinned by three principles. The first is that contrary to the minimalist curriculum proposed by the Board of Governors (see above), each competency needs to be broken down into knowledge components, skills and dispositions. The second is that these curriculum standards (derived from the eight competencies) are not the same as pedagogic standards (those arrangements in schools we make to allow learning to take place, and this includes formative processes of assessment) or assessment/evaluative standards (how we evaluate whether those curriculum standards have been met at set points in time). What this means is that the foundations of any curriculum are those curriculum standards which the EU system of schooling has decided are the most appropriate forms of knowledge, skills and dispositions for learning in schools, and not teaching or assessment standards. Teaching, learning and assessment approaches are derived from these curriculum standards. It is therefore important that the curriculum standard is not compromised in any way by whether it can or cannot be used as a testable construct or teaching approach. And thirdly, these curriculum standards should be expressed at a level of comprehensibility so that teachers, parents and students are able to access them.

A curriculum is an intended programme of learning and has three elements: a set of curriculum standards which set out the expected student achievements (what they know, what they can do and what dispositions they have acquired) at set points of time; a set of pedagogic standards; and a set of summative assessment or evaluation standards.

2.1 Curriculum Standards

The curriculum standards define what a student should know, be able to do and which dispositions they should have acquired. Standards are statements of expected achievements or level-descriptors defining expected achievements. These three elements then, knowledge, skill and disposition, need to be distinguished. Knowledge of something is the traditional form a set of curriculum standards takes, to which we can add knowledge of how to do something (i.e. skills) and dispositional knowledge. Dispositional knowledge refers to relatively stable habits of mind and body, sensitivities to occasion and participation repertoires. These dispositions include characteristics of the person that persist across time, for example, a positive self-concept as a reader, a desire and tendency to read, and an enjoyment of or interest in reading.

Progression is a key element. Curriculum standards are written at different levels of achievement. Most forms of progression between these levels or grades in curricula round the

world are based on a notion of extension, e.g. at level one a student should be able to do this or that, at level two the student is expected to be able to do more of this or that, and at level three the student is expected to be able to do even more of this or that. However, there are other forms of progression between designated knowledge sets, skills and dispositions besides extension, and these should be marked out in a curriculum document. Indeed, some knowledge sets, skills and dispositions are appropriately placed at some lower-level or even some higher-level grades. For example, many countries round the world have chosen not to start formal reading processes until at least seven years of age, and as a result reading does not feature in the curriculum standards at pre-primary levels in these countries.

Modes of progression can take the following forms:

1. *Prior Condition.* In the acquisition of particular knowledge, skill and dispositional elements, there are pre-requisites in the learning process. An example might be mathematical where knowledge of addition is a pre-requisite of multiplication.
2. *Maturation.* A maturational form of progression refers to the development of the mind of the child. There are some mental operations that cannot be performed by the child because the brain is too immature to process them.
3. *Extension.* An extensional form of progression is understood as an increase in the amount, or range of an operation. Greater coverage of the material is a form of progression, so a child now understands more examples of the construct, or more applications of the construct, and can operate with a greater range of ideas.
4. *Intensification.* Related to the idea of extension is the idea of deepening or intensifying the construct or skill. Whereas extension refers to the amount or range of progression, intensification refers to the extent to which a sophisticated understanding has replaced a superficial understanding of the concept.
5. *Complexity.* In relation to the knowledge constructs, skills and dispositions implicit within the standards, there are four forms of complexity that allow differentiation between the standards at different levels or grades and indicate progression. These are: behavioural complexity, symbolic complexity, affective complexity and perceptual complexity.
6. *Abstraction.* There is also a type of progression, abstracting, which involves moving from the concrete understanding of a concept to a more abstract version.

7. *Articulation*. A further measure of progression is an increased capacity to articulate, explain or amplify an idea or construct, i.e. the child retains the ability to deploy the skill and in addition, he or she can now articulate, explain or amplify what they are able to do and what they have done.
8. *Pedagogic*. A final form of progression is pedagogical, and this refers to the way that the translation of the curriculum knowledge standard, for example, into a pedagogical knowledge standard also means that progression has to take account of this translation. An example could be moving from an assisted performance to an independent one.

Curriculum standards are written so that students are expected to show progress in their learning between each of the key levels in the designated subjects. This chapter will concern itself only with secondary level standards, and we take as an example the language and communication competency. However, progression is still important. Furthermore, the type of progression is different in and between the different knowledge constructs, skills and dispositions. These eight forms of progression are therefore likely to operate at different points and in different ways in the curriculum standards.

2.2 Pedagogic Standards or Teaching and Learning Approaches

The curriculum standards do not specify how the knowledge, skills, and dispositions should be taught. As a consequence the teacher needs to rework the curriculum standards or learning outcomes into programmes of learning or action learning sets. Pedagogic approaches and strategies range from didactic to imitative to reflective and meta-reflective action learning sets. To develop a pedagogic approach there is a need to:

- Specify the circumstances in which it can be used in the specific learning environment;
- Specify the resources and technologies needed to allow that learning to take place;
- Specify the type of relationship between teacher and student, and student and student, to effect that learning;
- Specify a theory of learning – how can that construct (i.e. knowledge set, skill or disposition/inclination) be assimilated; and
- Develop a theory of transfer held by the teacher – that is, how can the learning which has taken place in a particular set of circumstances (i.e. a classroom, with a set of learners, in a particular way, with a particular theory of learning underpinning it, and so forth) transfer to other environments in other places and times.

Learning and assessment practices on the programme of learning can be regarded as formative if: there is evidence of the student's achievement; that evidence is *elicited*, *interpreted*, and *used* by the teacher, the individual student and their fellow students, and

such evidence is used by the teacher with the specific intention of deciding on the subsequent steps in the teaching-and-learning process (i.e. ‘instruction’ with the intention of further developing learning). The interaction between the teacher and their student(s) is formative when it influences the learner's cognition: the teacher's external stimulus and feedback triggers an internal production by the individual student.

2.3 Summative Assessment or Evaluation Standards – The EU Baccalaureate

A summative assessment or evaluation standard summarises those knowledge-sets, skills or dispositions which a student is required to have, and which are expressed in such a way that they can be tested in a controlled environment, such as an examination. They are different from and should not be confused with formative assessment processes, which are a central part of teaching and learning programmes. The principal problem with the way assessment or evaluation standards are used round the world is that testing a person's knowledge, skills and aptitudes is likely to have washback effects on the original knowledge or skill set. Instead of the assessment process acting exclusively as a descriptive device, it also acts in a variety of ways to transform the curriculum standards it is seeking to measure.

Washback effects work on a range of objects and in different ways. So, for example, there are washback effects on the curriculum, on teaching and learning, on the capacity of the individual and more fundamentally on the structures of knowledge, though these four mechanisms are frequently conflated in the minds of educational stakeholders. Micro washback effects work directly on the person, whereas macro washback effects work directly on institutions and systems, which then subsequently have an impact on individuals within those institutions and systems. Finally, a student may have to reframe their knowledge or skill set to fit the test, and therefore the assessment of their mastery of this knowledge or skill is not a determination of their competence, but a determination of whether they have successfully understood how to rework their capacity to fit the demands of the examination technology. As a result teaching to the test occurs and the curriculum is narrowed to accommodate those learning outcomes that can more easily be assessed.

The reason for separating out curriculum standards or learning outcomes from assessment standards is now clear. If assessment standards are treated in the same way as curriculum standards, then this is likely to have a detrimental and reductionist effect on the curriculum and more importantly on the type and content of learning that takes place. However, there are different needs within a system of schooling, and one of those needs is that at certain points in time supra-national, national, state and district educational bodies need to have information about how well the system is doing. This is a very different process from improving learning with an individual student.

2.4 The Language and Communication Strand

The first competency, Communication in the Mother Tongue, is defined in the following way (cf. Recommendations of the European Parliament and of the Council (2006) *On Key Competencies for Lifelong Learning*)

Communication in the mother tongue is the ability to express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing), and to interact linguistically in an appropriate and creative way in a full range of societal and cultural contexts; in education and training, work, home and leisure.

Communicative competence results from the acquisition of the mother tongue, which is intrinsically linked to the development of an individual's cognitive ability to interpret the world and relate to others. Communication in the mother tongue requires an individual to have knowledge of vocabulary, functional grammar and the functions of language. It includes an awareness of the main types of verbal interaction, a range of literary and non-literary texts, the main features of different styles and registers of language, and the variability of language and communication in different contexts. Individuals should have the skills to communicate both orally and in writing in a variety of communicative situations and to monitor and adapt their own communication to the requirements of the situation. This competence also includes the abilities to distinguish and use different types of texts, to search for, collect and process information, to use aids, and to formulate and express one's oral and written arguments in a convincing way appropriate to the context.

A positive attitude towards communication in the mother tongue involves a disposition to critical and constructive dialogue, an appreciation of aesthetic qualities and a willingness to strive for them, and an interest in interaction with others. This implies an awareness of the impact of language on others and a need to understand and use language in a positive and socially responsible manner.

This competency as it is expressed in the European Parliament's and Council's curriculum standards document can be grouped under six strands: reading, writing, speaking and listening, multi-modality, knowledge about language and communication, and language and communication dispositions.

The language and communication strand supports all the purposes and activities in the curriculum, but specifically competence in spoken and written language. At the same time, all six strands are related. Reading and writing are reciprocal, and a curriculum should ensure that such reciprocity is exploited in teaching and learning. Similarly, speaking and listening go together. From the perspective of the productive language skills, speaking and writing can be closely linked; just as reading and listening are both receptive skills (though they also require a good deal of active reading and active listening). It is also possible to exploit the connections between reading and speaking (as in reading out loud) and writing and listening (for example, attending to the process of writing in groups, or listening to each other's drafts).

2.5 Secondary Standards for Language and Communication

The period of secondary education is crucial for extending the range and experience of young people's use of language; and for understanding and using communication as an integral part of a wide set of social practices. To these ends, the standards for these years must be high and must be comparable with those set internationally. Young people going through the secondary school system should be equipped with the linguistic, communicative and social skills to enable them to contribute positively and effectively to their society, and also to the international world. In particular, the standards for these years include requirements for students to:

- Be able to read and write sufficiently well to engage in social practices and to express themselves individually;
- Contribute creatively to discussions, debates and other forms of spoken interchange in school, family and society;
- Know about how language and other modes of communication work, and to be able to reflect on these processes;
- Develop the communicative skills necessary to becoming an effective citizen.

The advances made in this stage will equip students for two principal future purposes: public examinations on the one hand, and the wider world of social obligation, citizenship and the world of work on the other. A widening repertoire of spoken, written and other genres, plus multimodal combinations, will enable students to feel empowered and responsible in society. The added dimensions of composition and interpretation in modes other than writing, reading, speaking and listening, along with increased knowledge about language, will prepare students for life in the twenty-first century.

Reading covers both fictional and documentary types of text. It is closely allied to writing, reading aloud (speaking), speaking and listening. The links between text and image are emphasized, and written texts should be used to allow talk about experiences and feelings as

well as about language. It includes knowledge, skill and dispositional elements. There will be an increasing emphasis on documentary texts to complement the reading of fiction, poetry and play-scripts. Documentary material includes information texts, maps, guides, menus and other ‘real world’ texts.

Reading should continue to broaden its range to include classical and historical literary works in national traditions. It should also extend to a wider range of ‘real world’ documentary texts, such as minutes of meetings, reports, opinion pieces and newspaper articles. Reading matter further extends to include magazines, newspapers, online media (if available), poetry, play scripts, and popular as well as classical fiction. There could be much variety in the way reading is introduced and taught, including formal exposition in class, small group exploration of texts, contribution to wiki-like texts online, reading for information, and reading for other purposes, like searching for evidence in support of an argument.

Writing is important to encourage as a means of communication. It is best linked to reading (so that they are seen as reciprocal), speech and other modes of communication (particularly the visual). Students will explore more specialized texts during this phase, and use writing to reflect more deeply on matters that arise from social experience and from their reading of literary and documentary texts. During this phase, there is the opportunity to embrace the written world of discourse as manifested in all aspects of society. For example, students should be exposed to the role writing plays in the creation of scripts for performance on TV, radio, film and in the theatre, as well as in public forums. They should be taught advanced word-processing skills in order to improve their capacities as writers of a wide range of texts.

Speaking is a natural part of communication and can be used for learning in pairs, small groups and in larger gatherings. It is a way of expressing feelings and thoughts in a number of different genres, and is linked to writing and reading. It is closely allied to listening. The role of speaking in secondary education and beyond must continue to be significant. Its value is that it reflects more sensitively than writing the range of regional and local diversity in the society. It is also a direct way of exploring, understanding and resolving (if necessary) difference. A wide range of spoken encounters is possible, even within school. For example, school events can be arranged and assisted by students who take responsibility for certain aspects. Campaigns and other forms of advocacy and persuasion can be encouraged.

Speech can be used as a rehearsal for writing or a follow-up to it; or as part of a multimodal composition like a play or film. Occasions could be made possible in the classroom where listening is the prime activity. Transmutation of heard texts into writing, speech or other modes of communication can arise directly from listening activities. Listening can also be a part of multimodal communication, as in a film, TV programme, or advertisement. Sound in general – as in sound effects, or ambient sound – can contribute to the overall communicative

experience of art forms and other forms of communication. They will wish to develop their own identities through spoken interaction with others: family, friends, those in authority and others. They will do this with the understanding that opposition is natural and can help clarify one's own position; but that speech is also a conduit through which resolution and consensus can be built. Listening at this stage takes on an obligation as a citizen: to listen carefully to views put forward, to reflect on them, and to respond accordingly. Listening can also play a role in the reception and enjoyment of literary texts; and it is integral to radio, film, television and other media.

As the modes of communication separate themselves from each other, there is more scope for a considered application of more than one mode in acts of communication. At the same time, the particular qualities and affordances of each mode become clearer. To understand that more permanent modes of recording, like digital archiving (if available), writing, print, drawing and other forms of composing, can be seen as more permanent forms of communication than temporary and ephemeral forms like speech, gesture and movement, is an important insight to develop. Examples of working multimodally include: the making of a short film; the creation of storyboards for sequential narration; the creation of stories, advertisements and other genres in sound; the editing and mixing of soundtracks; and the creation of performances and presentations.

This stage shows increasing awareness of language, and a concomitant increase in vocabulary to talk about language. While discussion about language and other forms of communication will continue to arise naturally from the use of language, there are opportunities for more formal attention to how language works in short periods of the language and communication curriculum. This stage reveals increasing knowledge about language so that students can talk or write about language use with insight, using it not only for its own sake, but also in order to improve their own language and communication skills. And finally, there are a series of dispositions which are persistent qualities associated with language and communication. In addition, it is important to develop and implement a cross-curricular language and communication programme. This has three elements: trilingual provision, use of digital technologies, and developing communication skills.

The years of secondary education are crucial for extending the range and experience of young people's use of language; and for understanding and using communication as an integral part of a wide set of social practices. To these ends, the standards for these years must be high and must be comparable with those set internationally. Young people going through the secondary school system should be equipped with the linguistic, communicative and social skills to enable them to contribute positively and effectively to European society, and also to the international world.

What follows is an example of what these standards might be in the strand of language and communication and in the domain of the first key competency, *Communication in the Mother Tongue*. They are grouped under six headings, and include a set of dispositions which are equally important throughout the process of schooling:

1. Reading
2. Writing
3. Speaking and Listening
4. Multi-modality
5. Knowledge about Language and Communication
6. Language and Communication Dispositions

2.6 Secondary Standards for Language and Communication

Four general purposes can be identified:

1. Use language to communicate (in oral and written form) and to learn

Students should use language to interpret, understand and transform the world, acquiring knowledge that will allow them to continue learning throughout life. This is to communicate in an effective and emotionally sensitive way in different contexts and situations, enabling them to clearly express their feelings, ideas and opinions in an informed manner and supported by evidence, and enabling them to communicate with others, whilst respecting those views.

2. Identify the properties of the language in different communicative situations

This competency includes an awareness of the characteristics and meaning of texts, according to their type, the contexts in which they are used and those people to whom they are addressed. It also refers to the use of different reading modes, depending on the purpose of the text and the characteristics and particularities of the reader. In addition, this competency refers to the production of written texts that take into consideration context, recipient and intended purposes, and the use of different reading strategies.

3. Analyse information and use language for making decisions

The goal is for students to develop their capacity for analysis and critical assessment of information from different sources, in order to make informed decisions, in relation to the collective interests and norms in different contexts, and based on different sources of written and oral information.

4. Value the linguistic and cultural diversity of Europe and other nations

Students should recognise and appreciate the linguistic and cultural richness of Europe and its varieties, as well as other languages as forms of identity; and in addition seek to employ the spoken and written language to interpret and explain various social, economic, cultural and political processes as part of the democratic culture and the exercise of citizenship.

1. Reading

The curriculum standards for this strand are as follows:

- 1.1 Identify the role of power relations in language and communication, and how those relations can affect the nature of a written text.
- 1.2 Use the different types of media to understand contemporary developments in Europe and the world.
- 1.3 Understand, analyze and appreciate the language of different literary genres, i.e. authors, periods and cultures.
- 1.4 Read, interpret and appreciate the aesthetic value of narrative, poetic and dramatic texts.
- 1.5 Recognize characters and recurrent events in the myths of different peoples and identify the values that are attached to them.
- 1.6 Understand the purposes and characteristics of informational texts.
- 1.7 Compare and contrast the different ways in which the same piece of news is presented in different media, and read such media in a critical fashion.
- 1.8 Understand and explain the different characteristics of facts and opinions.
- 1.9 Identify the formats and functions of different administrative and legal documents.
- 1.10 Read and reflect on documents that establish rights and obligations.
- 1.11 Read, interpret and enjoy a range of poetry, both of European origin and of other countries in the world.
- 1.12 Analyse and assess some effects of advertising.
- 1.13 Use the printed and electronic media available to them to obtain and select information for specific purposes.
- 1.14 Understand the function of common punctuation forms, i.e. full stop, comma, colon, semi-colon, exclamation mark, question mark and apostrophe, dash, and the various accents, and explain how they are used in a variety of written texts.
- 1.15 Understand the role and function of uppercase and lowercase conventions in written texts and know how to use them in reading.

- 1.16 Identify the form and function of different parts of speech in reading, i.e. nouns, verbs, adjectives, adverbs, prepositions, conjunctions and interjections.
- 1.17 Understand and use different reference sources in reading a range of texts.

2. Writing

The curriculum standards for this strand are as follows:

- 2.1 Identify the role of power relations in language and communication, and how those relations impact on writing texts.
- 2.2 Generate, shape, edit and re-frame written texts to suit a wide range of purposes.
- 2.3 Produce texts in a variety of modes, i.e. handwriting, word-processing and graphically.
- 2.4 Use language forms in an imaginative, free and personal way to reconstruct their own experiences and to create fictional works.
- 2.5 Write a script for a play with the appropriate characteristics.
- 2.6 Write a formal letter using the correct format.
- 2.7 Write a review of a book.
- 2.8 Write a short story, taking account of plot, its consistency, the characters and the setting.
- 2.9 Invent a possible dialogue, in the form of a short scene in a play, using the conventional format.
- 2.10 Write a report on an experiment, using the appropriate vocabulary and technical resources.
- 2.11 Write an autobiographical text, using the appropriate conventions.
- 2.12 Use conventional punctuation forms in a variety of written texts.
- 2.13 Use subordinate, compound and complex sentences in writing texts.
- 2.14 Use upper and lower case correctly in writing texts.
- 2.15 Use the different parts of speech, i.e. nouns, verbs, adjectives, adverbs, prepositions, conjunctions and interjections, correctly in writing.
- 2.16 Correctly spell words in a conventional sense, and use a spell-check if word-processing.
- 2.17 Understand and use in writing conventional referencing devices.
- 2.18 Use the linguistic resources that express temporality, causality and simultaneity, appropriately in writing.

3. Speaking and Listening

The curriculum standards for this strand are as follows:

- 3.1 Express and defend their opinions and beliefs in a reasoned manner, and use dialogue as a privileged way of resolving conflicts.
- 3.2 Use a wide range of spoken genres, from informal exchanges to formal speeches and responses.
- 3.3 Present the results of investigations they undertake.
- 3.4 Express their interpretations of, and their emotional responses to, the stories and poems that they read or write.
- 3.5 Present information on specific topics, integrating meaningful explanations and descriptions.
- 3.6 Ask relevant questions when taking part in debates.
- 3.7 Express their opinions in debates and defend their position, providing relevant data or facts to support them.
- 3.8 Listen to public debates in different media and analyse the different discursive strategies used by the participants to convince or to present an opinion about a subject.
- 3.9 Develop the skill of listening with concentration, empathy and understanding to scripts, stories, poems and other fictional works; and also to speeches, discussions and debates, expositions and other documentary speech forms.

4. Multi-modality

The curriculum standards for this strand are as follows:

- 4.1 Understand the affordances of the various modes, and be aware of new modes of communication as they appear.
- 4.2 Develop a sense of the economies of communication, as in the choices people make when they communicate, and the consequences.
- 4.3 Develop a competence in multimodal composing, by combining word, image and sound.
- 4.4 Be adept at shifting from mode to mode if the purpose of their communication requires such changes.
- 4.5 In order to become well-rounded communicators and citizens, acquire a capacity to communicate effectively in a wide range of forms (and combination of forms).

5. Knowledge about Language and Communication

The curriculum standards for this strand are as follows:

- 5.1 Understand that language and communication can be organised in a variety of ways.

- 5.2 Understand that different disciplines and fields of operation in the world have different vocabularies and grammatical/semantic rules.
- 5.3 Be disposed to find out more about language and communication with an enthusiasm and interest in them.
- 5.4 Use scientific materials, specialised dictionaries, the internet and encyclopaedias, both printed and digital, to support learning and to write informational texts.
- 5.5 Reflect on the role of literature in transmitting the cultural values of a nation and the European Union.
- 5.6 Identify how discrimination develops, and in particular, how it relates to the way people speak, and strategies for remediating it.
- 5.7 Understand the effects of writing on language stabilization.
- 5.8 Understand the importance of speaking and writing in more than one language.
- 5.9 Reflect on the relationship between literature and the social and historical context of its production.
- 5.10 Reflect on the changes that occur in language and peoples over time.
- 5.11 Understand the influence and importance of indigenous languages or other languages than their own.
- 5.12 Understand the balance and relations between a standard spoken language as used in their own country, and regional and local variations.

6. Language and Communication Dispositions

These dispositions are persistent qualities associated with language and communication.

The curriculum standards for this strand are as follows:

- 1.1 Develop an interest in learning and express this through asking questions, listening and observing.
- 1.2 Value self-authorship and develop a confidence as an author and speaker.
- 1.3 Consider the consequences of their own words and actions for themselves and for others.
- 1.4 Understand the potentiality of, and use language appropriately for, conflict resolution.
- 1.5 Understand the importance of information conservation and develop the skills to retrieve information.
- 1.6 Understand and promote the importance of equal opportunities between men and women.
- 1.7 Respect racial and ethnic differences, and recognize the value of diversity, in communicating with others.
- 1.8 Understand the usefulness of written and spoken codes for communicating and organising ideas.

- 1.9 Value the linguistic and cultural richness of Europe and other parts of the world.
- 1.10 Develop a positive self-concept as a reader, writer, speaker or listener; a desire and tendency to read, write, speak or listen; and an enjoyment of or interest in reading, writing, speaking and listening.

This breakdown of the first competency should be understood as illustrative only, and not be treated as its definitive expression.

2.7 The Essential Components of a Curriculum

The development of a curriculum therefore requires a number of sequential steps:

1. The aims and objectives or competencies of the educational programme need to be set out and these are derived from the essential forms of knowledge, skills and dispositions which a school system considers to be appropriate for living in the society as it is now and as its citizens would like it to be.
2. From these aims and objectives, a set of subject areas should be derived and a set of relations between those subject areas should be established. For example, Language, Literature, Mathematics, Physics, Biology, Chemistry, Foreign Language, Physical Education, History, Geography, Sociology, Art, Music and Drama. This is an example of strong boundaries between different subjects. An example of weak boundaries between different subjects is as follows: Language Studies, Science, Mathematics, Humanities, Arts, Physical Education and Foreign Languages. Ten models of curriculum integration can be identified and these range from strongly classified and strongly framed curricula, as in the first approach, to weakly classified and weakly framed networked approaches to curriculum planning, as in the second approach. Between the two extremes: traditional or fragmented *and* networked approaches, there are eight other points on the continuum: connected, nested, sequenced, shared, webbed, threaded, integrated and immersed.
3. From these aims and objectives and bearing in mind the decisions made about curriculum subjects and their integration, curriculum standards are derived. These should be subject-specific and written in such a way as to indicate to the learner and the teacher what the learner is required to know or be able to do, or have the disposition for, at the end of the programme of learning.
4. The next stage is to identify the most appropriate processes for the delivery of these curriculum standards. This is the identification of the pedagogic standard, and it involves choosing between a variety of teaching and learning approaches. The areas that choices have to be made about are: the pedagogic mode (the type of relationship between the

teacher and the students), the learning mode (the type of learning approach that underpins the work of the teacher), the resources and technologies needed to allow that learning to take place, formative feedback mechanisms by the teacher (the types, approaches and purposes), how learners are arranged in the classroom, timings of different activities during the lesson, the tasks that the learners are expected to complete, formative learning approaches (including assessment for learning approaches), and how the learning can be transferred to other environments. The important point to note here is that the pedagogic approach or standard is derived from the curriculum standard and not from any summative assessment or evaluation standard or approach.

5. The final stage is the development of summative assessment or evaluation standards as in the European Baccalaureate. These are derived from the curriculum standards, which in turn were derived from the aims and objectives of the whole programme. They should not be confused with formative assessment processes, as they are constructed in different ways and have different purposes. It is important that any systemic evaluative or assessment process should not impact in any direct way on the learning processes that take place in classrooms.

2.8 Recommendations

1. The minimalist curriculum as advocated by the European Parliament and Council should be clarified and extended, especially with regards to the key competencies.
2. Pedagogies and pedagogic standards are derived from curriculum standards. These curriculum standards (derived in turn from the eight competencies) are not the same as pedagogic standards (those arrangements in schools we make to allow learning to take place, and this includes formative processes of assessment).
3. Assessment/evaluative standards, expressed in the European Baccalaureate (how we evaluate whether those curriculum standards have been met at the end of the programme of learning) are derived from the curriculum standards, which in turn are derived from the eight key competencies. What this means is that the foundations of any curriculum are those curriculum standards which the EU system of schooling has decided are the most appropriate forms of knowledge, skills and dispositions for learning in schools, and not teaching or assessment standards. Teaching, learning and assessment approaches derive their credibility from these curriculum standards. It is therefore important that the curriculum standard is not compromised in any way by whether it can or cannot be used as a testable construct or teaching approach.
4. These curriculum standards should be expressed at a level of comprehensibility so that teachers, parents and students are able to access them.
5. Teachers should undergo training programmes (pre-service and in-service) to deliver this new curriculum and its component parts.

6. The EU Baccalaureate needs to be adjusted to accommodate these new curricular arrangements and to fit the demands of university and college entry procedures and their programmes of study.

Chapter 3: The Key Competency of Communication in Foreign Languages

3.1 Introduction

This part of the report focuses on language issues. The IOE's First Report: *A History and a Literature Review*, and in particular, the section on Language Provision that reviews research and best practice in bilingual education contexts, serves as a foundation piece for this chapter.

The primary aim of this chapter of the second report is (based on a review of European Schools documents and practices in reference to language learning) to make recommendations. In addition, each recommendation is followed by a rationale explaining why the recommendation is being made. This is followed by suggestions for the implementation of the proposed recommendation. This chapter will address the following issues: language policy; curriculum as it relates to language; assessment; pedagogy; and the language of instruction. A discussion of professional development pertaining to language teaching/learning is integrated with the discussion of the above issues.

3.2 Language Policy

The European Schools language policy is embodied above all: in the principle of supporting L1 learning through the creation of language sections; in the provision of additional support for students without a language section; in having students study content subjects through their L2; and by offering L3, L4 and L5 language courses. However, there is no overarching language policy document that guides the co-construction of learning environments that foster bilingualism, trilingualism or multilingualism. A policy document of this nature has the potential to better focus the schools' attention on, and therefore support, language learning.

Recommendations, Rationale and Suggestions

Recommendation – 1

The European Schools develop, through a stakeholder inclusive process, a language policy document in order to provide guidance on how the European Schools intend to meet their mission of providing 'a multilingual and multicultural education for nursery, primary and secondary level pupils.'

Rationale for Recommendation – 1

The current European Schools' language learning policy is primarily expressed through: the principle of supporting L1 learning through the creation of language sections; the creation of SWALS and the provision of additional support for these students; the right for schools to choose the national language as their primary medium of instruction which may mean that large numbers of students are studying subjects primarily through their L2; having students study content subjects through their L2 (possibly L3); and by offering L3, L4 and L5 language courses.

Language policy elements are to be found in numerous policy prescriptions (e.g. mission statement, General Rules of the European Schools, Provision of Educational Support in the European Schools – Procedural document, Reform of the European Schools System, Proposal of the 'Organisation of studies in the secondary cycle' Working Group, Control of the Level of Linguistic Competence as Part of the Procedure for Recruitment of Non-native Speaker Teaching and Educational Support Staff, Languages of tuition for Economics in the European Schools system, language and content subject syllabuses). Policy is also being developed in situ through interpretation of existing policies (e.g. discussion of whether and in which school in Brussels an Estonian language section will be opened).

Despite the fact that language learning and intercultural communication are at the core of the European Schools ethos, there is no one place the European Schools' internal and external stakeholders can turn to for direction on how these key characteristics translate into practice. Moreover, a basic tenet of bi-/trilingual education is that the pedagogy changes in bi-/trilingual education contexts. Existing policy documents including curriculum documents provide scant direction on how teaching and learning practices at the European Schools are expected to promote high degrees of language learning, or content and language learning whilst learning through a first and a second language.

It is important to note that students are likely to transfer L1 skills to their L2 and L3. The greater a student's L1 proficiency, the greater his or her meta-linguistic awareness, and the better his or her L1 language learning habits and skills, the more likely it is that this proficiency, metalinguistic awareness and these language learning habits and skills will support learning of the L2 and the L3 and through the L2 and L3.

Suggestions for Implementing Recommendation (1) on Language Policy

A language policy could include some or all of the following elements: an introduction or preamble; aims; connections to European School values and other policies; a description of

the role of language learning (including for L1, L2 and L3); in class and out-of-class language use (e.g. at assemblies, in displays); core pedagogical principles (e.g. all content and language teachers whether they teach through L1, L2 or L3 support both content and language learning); management implications; student support services; staff support services; staff professional development; student assessment; an explanation of how and when the policy will be reviewed; and a glossary of key terms (e.g. bilingualism, trilingualism, multilingualism, multilingual teaching, multicultural education).

More specifically, for example, under core pedagogical principles, the policy might include some of the following points, which would constitute a common expectation for all teachers:

- The integration of content and language instruction;
- The concurrent articulation of clear, explicit and visible content and language learning objectives in all subjects, and the regular analysis of progress toward the achievement of these objectives;
- The co-construction of learning environments by teachers and students that are safe, supportive and engaging, and that encourage rich student output;
- The building of learner autonomy and responsibility;
- The use of assessment as a tool for learning language, content and general learning skills;
- The use of differentiation, including for enrichment, for students at various stages on their content and language learning pathways;
- The concurrent scaffolding of both content and language learning;
- The encouragement of critical thinking about content, language, and learning skills.

Under management implications, the proposed language policy might include some of the following points:

- The development of a common vision of bilingual, trilingual and/or multilingual and multicultural education by parents, students, teachers, and school principals who operate as a professional learning community;
- The articulation of high expectations by school principals, teachers, and students regarding content learning and bilingualism, trilingualism and/or multilingualism;
- The expectation that all teachers are teachers of both content and language, and that management practices (e.g. professional development, performance reviews) support teachers on assuming this dual role;
- The creation of mechanisms for encouraging language and content teachers to cooperate, and for teachers to cooperate across languages;
- The language needs of each student will be assessed in order to develop an individual learning pathway;

- The use of assessment for learning to support content and language learning in all classes including those taught through the L1.

Finally, how the policy is developed and approved will also be central to whether it will be well understood, accepted and implemented. It is suggested that the policy be developed through a stakeholder inclusive process with external advice.

3.3 Curriculum and Language

Draft content subject syllabuses do not include explicit language objectives. Particularly for students who may be learning a content subject through their L2 or L3 this leaves the impression that language learning in content classes is seen as largely incidental. The lack of explicit language objectives implies that the European Schools are under utilising this key tool in language learning.

The objectives and assessment sections of English L2, French L2 and the German L2 language courses' syllabuses suggest that 'non-language' content is used above all as a carrier for language learning. This is likely to make language learning less efficient and meaningful. Ways in which language classes can support content learning particularly in content classes taught through the students' L2 could be strengthened. In addition the importance of culture is signalled as a high level aim of the European Schools, yet a review of L2 language courses syllabuses shows that there is also a certain disjunction between curriculum objectives and assessment, and the achievement of the high level aim related to culture.

Language Objectives: Recommendations, Rationale and Suggestions

Recommendation – 2

To integrate language objectives into curriculum documents for all content subjects whether these subjects are taught through the students' L1, L2 or L3. It would be important for these language objectives to support:

- The development of language awareness (e.g. how language works, making explicit academic language);
- Communication awareness (e.g. understanding the systems that operate when people communicate, student's role);
- The learning of learning skills specific to language learning; and
- The skills, attitudes and knowledge required for effective intercultural communication.

Rationale for Recommendation – 2

Language plays a crucial role in learning in general, and is a major focus of four of the key competencies defined in the European Framework for Key Competencies for Lifelong Learning:

1. Communication in the Mother Tongue;
2. Communication in Foreign Languages;
3. Learning to Learn;
4. Cultural Awareness and Expression.

Subject teachers carry the majority of the responsibility for helping students to learn and develop proficiency in using the academic language of their subject.

Language objectives are an important tool used in planning for and managing language learning (e.g. academic language; language learning skills; knowledge skills and attitudes needed for intercultural communication). It is easier to systematically scaffold student language and content learning if a teacher has a precise sense of what language and related skills are to be learned.

Language objectives focus on supporting students in noticing, using (e.g. analysing, discussing, applying) and learning the academic language that is embedded in recordings, texts and discussions about academic content. Language objectives are less focused on learning lists of vocabulary and more focused on specific language skills such as the correct use of the comparative, developing an argument, explaining a line of reasoning, using the passive voice correctly, or inquiring into a topic collaboratively. They are focussed not just on the correct use of language, but on the development of language learning skills, communication awareness and intercultural communication.

Clear and concise language objectives explain to learners what is expected of them. If expectations are not clear, it is difficult for a student to plan his or her own learning. Clear and concise language objectives also help students build, assess and maintain their motivation to learn language. Current content courses syllabi, including the new syllabi such as the Geography Syllabus (4 period course Year 6/7) and ICTC Syllabus – S1 – S3 ICT, tend not to make language learning objectives explicit.

Suggestions for Implementing the Recommendation on Language Objectives

The following are possible actions that may support the implementation of the recommendation:

- Decide to make explicit (e.g. display on a board or the class's electronic learning space) language objectives in all content classes;
- Develop a plan for how the European Schools will institute this new policy and measure its success (NB: Content teachers, in particular at the secondary level, often resist assuming responsibility for both content and language learning in their classes unless they are provided professional development in doing so, and ample opportunities to discuss the matter.);
- Review Appendix 1 of this chapter for sample language objectives;
- Provide professional development to middle management and teachers in developing language objectives. Ideally, an outcome of this professional development would be a set of language objectives for several weeks of upcoming lessons, as well as some long-term language objectives;
- Also provide professional development to content teachers in drawing out the characteristics and component parts of the language of their subject. This tends to be a major challenge for a large percentage of content teachers. The new Geography syllabus does draw out key words to be learnt, but this is only the tip of the iceberg in terms of the language of Geography that must be learned by students (see Appendix 2 for a breakdown of the language of Geography);
- Maintain attention (at the central and school levels) on creating an environment that supports teachers in making this major shift in practice – setting language objectives. The European Schools also need to measure progress in making this major shift and its impact on student learning. This will require keeping the implementation of this policy on the agenda at the central and school levels. It also invites co-operation amongst language and content teachers.

3.4 Content Enrichment: Recommendation, Rationale and Suggestions

Recommendation – 3

To revise secondary level L2 language curricula to ensure they integrate more substantive and meaningful content including cultural content.

Rationale for Recommendation – 3

The English, French and German L2 secondary level language syllabuses, with the exception of the very short enriched L2 French and English syllabuses, appear light on content and heavy on language learning. These syllabuses would benefit from the inclusion of more meaningful content topics that require greater critical thinking about both content and

language. The more substantive nature of these topics would then need to be reflected in course objectives and assessment. By enriching the L2 language syllabuses, students would:

- Be exposed to a richer range of relevant language. This includes a richer variety of topics, vocabulary (including terminology and phraseology), tenses, registers and functions.
- Be called on to use a richer range of language. Working with content subject concepts in language class requires students to use a richer variety of language than would be the case in a standard language class.
- Likely find learning more meaningful. If that content is used in meaningful ways, students are more likely to recall that language and content. Content-rich instruction helps create links between ideas and language. Links create meaning and can, metaphorically speaking, be considered the ‘glue’ that fixes language and content learning into long-term memory.
- Be helped to learn the general academic language needed in several content subjects. The language associated with certain functions is common to many content subjects. These functions include: analysing, classifying, comparing, contrasting, explaining causes and consequences, evaluating, hypothesising, inquiring collaboratively, justifying, persuading, separating fact from opinion, solving problems, synthesising and verifying.
- Have increased motivation, confidence, and success. Students are better able to cope with learning content subjects through the L2 or L3 if they are provided needed language and helped to practise key skills in language classes that are required in most content subject classes.
- Have increased opportunities to think critically about both language and content. Content-based language instruction reinforces the expectation in language programmes that teachers and students think critically about both language and content learning. It helps avoid a situation noted by researchers where some language teachers focus primarily on the language being learned and avoid substantive analysis of the content used to carry the language.

In addition, a review of secondary level English, French and German L2 language syllabuses demonstrate that these language classes could do more to help prepare students for those content subjects they are expected to study through their L2 or L3 - Geography, History, Human Sciences courses, Religion and Non-confessional Ethics.

Finally, the importance of culture, and the mission of the European Schools to provide a broad multicultural education are signalled as broad high level aims of the European Schools, yet a review of L2 language courses syllabuses shows that there is a certain disjunction between curriculum objectives and assessment, and the achievement of those high level aims related to culture. Greater attention could be given to analysing several cultures at one time. In addition, culture and intercultural competencies are not defined in language learning

syllabuses. Some language learning syllabuses provide far more cultural elements for discussion and analysis than others (e.g. English L2 versus Finnish L4).

Suggestions for Implementing the Recommendation on Enrichment of Language Syllabi

In order to enrich L2 language syllabuses, more content compatible with those subjects to be taught through the students' L2 and/or L3 could be integrated into L2 language classes. This would then need to be reflected in the content. The syllabuses could also better guide teachers in supporting students:

- In learning and using generic language needed for success across different subjects (phraseology and other formulaic sequences, collocations, connectives, phrasal verbs, tone and terminology needed for undertaking generic tasks);
- In undertaking generic tasks, which are common across the curriculum (e.g. comparing or contrasting texts; developing lines of reasoning; explaining causes and consequences; extracting a line of argument, point of view, or perspective from a text or other media; holding debates; testing hypotheses; presenting examples and evidence; separating opinions from facts; synthesising).

In order to enhance the cultural, including the intercultural, component of the syllabuses the European Schools could consider:

- Exploring diverse definitions of culture and intercultural competence;
- Agreeing on definitions;
- Drawing out more clearly objectives related to culture and intercultural competence;
- Providing professional development to teachers in integrating the teaching of culture. This can for instance include drawing on the following often interrelated categories – architecture, art (fine and applied), attitudes, beliefs, concepts of the universe, cuisine, customs, emigration, events, experience, famous people, film, hierarchies, history, immigration, knowledge, legislation, literature, material objects/artefacts, meanings, media, music, notions of time, politics, possessions, practices, public institutions, religion, rituals, role of nature, roles, sports, soap operas, social security, spatial relations, trends and values – in order to help students to engage with part of a given culture, and in order to compare and contrast cultures. At the same time, professional development could explore the reality that no cultural construct is likely to be a monolithic symbol embraced by all members of a language community, and that culture is dynamic and therefore constantly changing.
- Making explicit objectives related to intercultural competence. This could involve attitudes, skills and knowledge about the socio-cultural dimensions of language use in diverse cultures, and briefly describe ways in which intercultural competence can be

assessed. In the knowledge domain, for example, students might be expected to explain and/or demonstrate: how culture and identity can influence communication and language use; why different forms of communication are important from a socio-cultural point of view in different cultural groups; and the socio-cultural characteristics of their own language environment and how they might differ from those of other language communities. In the attitudinal domain, students might be expected to explore: their own and other people's attitudes and prejudices regarding their own and other cultures; how open they are to other cultures and languages; how much importance they accord to the L1, L2, L3 and/or L4; and their willingness to engage with other cultures. In the skills domain, for example, students might be expected to demonstrate their capacity: to use strategies for communicating with someone from another culture and, especially, speakers of their L2 and L3; to modify their behaviour and language during interactions with speakers of other languages and, in particular, speakers of their L2 and L3; to recognise cultural perspectives, affinities and preferences expressed in authentic language materials; and to analyse and understand the norms of other cultural groups and, especially, those related to their L2 and L3.

3.5 Assessment

A review of various policy prescriptions leaves the impression that the European Schools are under-attending to aspects of assessment that are unique to bilingual/trilingual/multilingual education contexts. These aspects are largely not defined and as such may not be applied systematically in building learning environments. There is a need to revise assessment policies so that they better support language learning.

Recommendations, Rationale and Suggestions

Recommendation – 4

To revisit assessment policies to ensure they support the language learning mission of the European schools, and in particular the use of assessment as a tool for language learning.

Rationale for Recommendation – 4

One clear and highly laudable policy prescriptions which is repeated in several documents is that 'language competence should not be a factor in assessment, unless it creates a serious barrier to effective communication.' However, existing key documents include little or no discussion of how assessment in a bilingual/trilingual/multilingual school is unique or different to assessment in a primarily monolingual education context. This is the case, whether one reviews references to assessment in high-level documents such as the General

Rules of the European Schools or references to assessment in old or new syllabuses for a given subject.

Furthermore, the General Rules of the European Schools state that ‘pupils’ results will be assessed on the basis of specifically defined learning objectives and competencies for each subject. Since content subjects do not provide distinct language objectives this implies students may not be receiving feedback on language growth/development in content classes. As previously mentioned, this seems to imply that language learning in content classes taught through the L1, L2 or L3 is being considered as incidental, as opposed to something that is being systematically managed and supported.

In addition, these policy documents under-attend to assessment for/as learning. This implies that assessment as/for learning may be under utilised as a tool in language learning. As discussed in the first IOE report, research indicates that there is a tendency for language learning in bilingual education contexts to level off or cease to progress in the later years of schooling unless teachers and students continue to pay attention to language learning in content classes.

Suggestions for Implementing the Recommendation on Assessment

It is suggested that an expert group identify those aspects of assessment that are unique to bilingual or trilingual education contexts. For example:

- Achievement of language objectives (pertaining to both language and communication awareness);
- Use of language for various purposes (e.g. academic, peer cooperative work);
- Use of all four language skills (listening, speaking, reading, writing);
- Ability to work with authentic materials, as well as with native and non-native speakers of the L2 and L3;
- Willingness to experiment with language and content;
- Current capacity to apply (not simply reformulate) knowledge gained through L1 in activities done through L2 (translanguaging);
- Development of intercultural competence (e.g. capacity to identify and summarise cultural points of view);
- Ongoing growth of language knowledge and skills (avoiding plateauing).

All of the above would not necessarily be assessed for a mark, but students would need feedback on all of them.

The process of identifying aspects of assessment unique to bi-/tri/multilingual education would be followed by a review of existing policy prescriptions that refer to assessment. This work would need to be integrated with the development of language objectives for content classes (see Recommendation 2 in this section of the report).

In addition, it would be helpful to define in greater detail key principles of formative assessment such as ensuring that students are provided, on an individual basis, with concrete advice on how to move forward, and that assessment for learning can be considered successful only if it leads to changes in teaching practices and/or student learning practices, and ultimately to improved student achievement (content and language).

3.6 Pedagogy

Pedagogy, the art and science of teaching, holds a powerful key to the improvement of student learning, and is currently an under represented part of the discussion about the reorganisation of studies. Particularly, in a bilingual/trilingual/ multilingual education context highly effective pedagogy can help to increase exponentially student learning of both content and language even for students who have been low achievers. Students have potentially much to gain from the European Schools increasing their focus on high quality teaching and student learning.

Recommendations, Rationale and Suggestions

Recommendation – 5

To move the quality of teaching and in particular student learning to the top of the policy and meeting agendas in order to ensure that the multilingual and multicultural European Schools are first and foremost learning powered institutions.

Rationale for Recommendation – 5

Extensive research in diverse educational settings including bilingual education contexts has shown that certain dispositions and strategies are particularly powerful in helping students to achieve at a high level (see the section on Language Pedagogy in the IOE's First Report: A History and a Literature Review).

For example, central to success for all types of students in bilingual education contexts is a belief by all educators that all students can succeed. Current high failure and drop out rates imply that many educators do not hold such a belief and/or lack knowledge of, or skill in applying, strategies which have a high positive impact on student learning of both content

and language. In addition, the failure and dropout rates vary across schools and language sections. For example, in French sections a much higher percentage of pupils fail and repeat a year than is the case in Finnish sections where there is more support and pupils rarely repeat a year.

Also, the General Rules of the European Schools state in the chapter on assessment that ‘during the second semester [if] the teacher detects a definite risk of a pupil having to repeat the year, the Director shall be required to notify his/her legal representatives in writing in late April or early May at the latest.’ This right to know about the risk is important, but more important would be the right for a student who is not meeting learning objectives to get timely advice and support in how he or she could meet those objectives. Students and teachers need a regular exchange of multi-directional feedback to address problems quickly so students can catch up with the majority of their classmates. Assessment for learning, as mentioned in the section on assessment in this chapter, appear to be under-attended to. The explicit teaching of general learning skills and learning skills specific to language learning are also considered to have a high positive effect size on student achievement. These are under-attended to in curriculum documents and other policy prescriptions.

Only fleeting mention is made to teaching methodology or other aspects of pedagogy in the minutes of the Working Group’s ‘Organisation of studies in the secondary cycle’ or in the Proposal of the ‘Organisation of studies in the secondary cycle’ Working Group. The European Schools are showing clear concern for students in particular with regards to the failure and drop out rates, but the near absence of discussion about the quality of teaching seems to covertly place the responsibility for the drop out rates on the current organisation of studies and students, but not on teaching. Professional learning communities that are ultimately focussed on improving students’ learning tend to see high levels of student achievement for a broad range of students. Finally the previous four recommendations are also tied to issues of pedagogy, and suggest the need to move issues of pedagogy to the top of the policy agenda.

Suggestions for Implementing the Recommendation on Assessment

- Agree on a small number of core pedagogical principles (e.g. content and language integrated learning - CLIL, teaching learning skills, fostering learner autonomy and responsibility, assessment for learning, concurrent scaffolding of content and language to maintain students in their Zone of Proximal Development, setting language objectives in content classes) that the schools will actively promote. Focussing on a limited number of goals can foster teacher autonomy, whilst also helping to support the adoption of under-utilised strategies. As a first step schools could take one or possible two of these pedagogical principles and focus on this/these for a whole academic year. This priority

would then be reflected throughout the system e.g. in school professional discourse, in professional development, meetings, public relations, annual reviews, as well as student and parent surveys.

- Review the extent to which meeting time is devoted to discussing student learning as opposed to organisational or other issues.
- Review the benefits of refocusing attention on placing student learning at the forefront of policy and agendas. Part of this would include a review of the professional literature on influences on student learning and the literature on becoming a learning-powered school.

3.7 Language of Instruction

In a bi-/tri-/multilingual education environment that seeks to foster additive bi-/tri-/multilingualism, the language used to teach any given subject, as long as each language is used to teach some high status subjects, is a secondary issue when compared with the quality of teaching and learning practices. Any reorganisation of studies needs to ensure the best pedagogical practices are applied and that the needs of students studying through their L2, L3 or L4 are taken into account.

Recommendation – 6

To further analyse from a language perspective the consequences of the current and planned requirements pertaining to the language of instruction for students to ensure that systems are in place to support students as needed.

Rationale for Recommendation – 6

Currently, Art, ICTC, Music and Physical Education are taught in mixed language groups. We are unaware of schools being provided any direction in how the language or languages of instruction will be decided. Decisions of this nature in bilingual and trilingual schools are often made based on the availability of teachers. It is also unknown how European Schools teachers teaching those subjects are trained, and what expectations are placed on them regarding differentiation and ‘multilingual education’. For example, will they teach through several languages or one language, encourage translanguaging, and allow for differentiation? It is possible for students in S1 to find themselves in a class such as ICTC that is being taught in their L3 whilst they are only beginning to study their L3. This begs the question as to what extent students’ needs vary in mixed language groups due to language knowledge, and how is learning being scaffolded and differentiated on a needs-be basis for students who are learning through their L2 or L3.

Suggestions for Implementing the Recommendation on the Language of Instruction

The following are possible actions that may support the implementation of the recommendation:

- Define how the language or languages of instruction will be decided for mixed language groups;
- Provide professional development to teachers, in teaching through more than one language, in translanguaging and in differentiation, and ensuring that this includes plenty of opportunities for teachers to discuss their beliefs and understandings;
- Integrate language objectives into these courses;
- Undertake the early and ongoing assessment of needs for students studying subjects through their L2, L3 or L4, and create a programme for addressing those needs;
- Help all students to become independent language learners (e.g. teaching language learning skills);
- Help develop and manage study groups and buddy systems.

Appendix 1

Sample Language Objectives

Sample language objectives related to increasing communication awareness include intercultural communication.

Learners can:

- Support their opinion with a two-point explanation;
- Articulate orally and in writing five key points from a video recording they have watched several times on their own (also, challenge one key point with supporting evidence);
- Conduct 50% of group work through their second language;
- Ask questions for clarification;
- Suspend immediate judgement whilst analysing situations and exploring their own prejudices;
- Analyse how open or closed they are to other cultures and languages;
- Explain how culture and identity can influence communication.

Sample language objectives focussed on language learning include:

Learners can:

- Scan a text for unfamiliar vocabulary, terminology and phrases;
- Read a text several times for different purposes;
- Explain how they solved a problem;
- Use analogies in scientific descriptions, including explaining their limitations;
- Formulate questions and generate and explain hypotheses orally and in writing;
- Read a graph and summarise it in a paragraph;
- Correctly use orally and in writing the comparative (e.g. greater or less than);
- Use connectives (e.g. for example, as a result, because, furthermore) to tie together a written report;
- Correctly use orally and in writing the passive voice (e.g. The saola was eaten by the tiger as opposed to The tiger ate the saola.)

Sample language objectives for secondary Mathematics and Science include:

- If the content objective in Mathematics was ‘to successfully use quadratic functions such as $y = a(x-p)^2 + q$, including the concepts: vertex; intercepts; domain and range; and axis of symmetry’, complementary language objectives/outcomes might be: a) to define the terms ‘root’, ‘intercept’ and ‘axis of symmetry’ b) to accurately use phraseology and terminology associated with conjecturing and verifying (e.g. regarding the relationship among the roots of an equation).
- If Science is the subject, appropriate language objectives could include: a) to explain a scientific concept in lay person’s terms and contrast that with how a scientist would explain the same concept, b) to use analogies in scientific descriptions, including explaining their limitations, c) to correctly use the comparative (for contrasting and comparing), d) to correctly use the second conditional, and e) to draft a lab report in writing using agreed upon conventions.

Appendix 2: Language of Geography

LANGUAGE OF GEOGRAPHY: EXAMPLES for learning Geography through English ¹	
Characteristics	Related learning skills
<p>uses graphs, maps, photographs, tables, and text</p> <p>contains many prepositions (e.g. in Asia, on Cuba, at night, resulting from urbanisation)</p> <p>often uses present tense</p> <p>includes many word collocations (e.g. the social geography of France; manufacturing industries not only; methods of collecting data)</p> <p>contains cultural universals to describe human-environmental interaction</p> <p>uses many acronyms such as MDC (More Developed Country), EMDC (Economically More Developed Country), LEDC (Less Economically Developed Country), NIC (Newly Industrialised Country) and HIC (High Income Country)</p> <p>uses large numbers of specialist terms such as anemometer, drumlins, exfoliation, horizontal equivalent, nucleated settlements, population pyramid, striations</p> <p>uses French, Greek, Latin and other foreign words and phrases (e.g. laissez-faire)</p> <p>takes for granted that the reader has a knowledge of geographical concepts</p>	<p>Students are ideally supported in:</p> <p>reading and interpreting graphs (bar graphs, divided bar graphs, line graphs, scatter graphs (including line of best fit), pie charts, proportional circles, triangular graphs, climate graphs), maps (survey, aerial, terrestrial, satellite), photographs (aerial, black and white, colour, terrestrial, satellite), tables and various kinds of text</p> <p>using GIS such as Google Maps and Google Earth</p> <p>analysing space arrangement, direction, distance, location, patterns and shape</p> <p>tracing a path along a specified feature</p> <p>identifying real and abstract divisional markers (e.g., boundary dividing motorway from housing; postal code divisions)</p> <p>conducting case studies</p> <p>accurately and objectively collecting, recording, processing, analysing, interpreting and reporting data in a spatial context</p> <p>evaluating different types and sources of information</p> <p>identifying patterns and changes in patterns</p> <p>NB: For maximum uptake, learning skills are taught, practiced and evaluated in each content subject.</p>
International/foreign terms	
<p>acquirer, algae, barrage, caldera, crevasse, boreal, fauna, Gersmehl diagrams, guyot, halophyte, Hjulstrom curve, inselberg, isostatic, laissez-faire, karst, kolkhoz, levée, magma, nunatak, oligopoly, Paleozoic, Peltier diagram, quadrat, silica, taiga, tombolo, xerophytic</p>	

¹ Authored by Peeter Mehisto. © Cambridge International Examinations

Subject-specific terminology requiring decoding

agglomeration, alluvia, amenities, Atlantic Seaboard fall line, atmospheric pressure, Badlands, barrier, biomass, braided channel, carbonation, chelation, chemical weathering, combine harvester, constraint, core-periphery, divergent and convergent plate boundaries, dust bowl, entrainment, equatorial low pressure, fluvial geomorphology, frost shattering, greenhouse effect, a high dependency ratio, hydrolysis, life expectancy, low pressure, nutrient cycling, organic action, oxbow lake, peak discharge, urban heat island, storm hydrograph, solar radiation, subduction zone, subtropical high pressure, savanna, trade winds, westerlies

Easily confused words/concepts

absorption versus adsorption; afforestation vs deforestation; ascend vs assent; capitol vs capital; corrasion vs corrosion; de facto vs de jure segregation; emigrate vs immigrate; fewer vs less; snowline vs treeline; transmigration vs migration; weather vs whether

Common functions and activities (many call for the use of formulaic language including phraseology)

annotating; avoiding repetition; being succinct; commenting on; comparing; contrasting; describing; devising; drawing; enquiring; evaluating; planning; sketching; synthesising; analysing and explaining the inter-relationships between people's activities and the total environment; extracting information from diagrams, graphs, maps, tables and text; drawing inferences; producing labelled or annotated diagrams and referring to them in the text; explaining scale including spatial scale; calculating lag time; drawing out both negative and positive effects (e.g. impact of refugees); developing and explaining a line of reasoning based on evidence; identifying factors and developing reasoning in more than one dimension (economic, social, environmental and political); explaining cause and consequence (e.g. lack of precipitation limits chemical processes and mechanical processes such as freeze thaw; in the case of human geography explaining both 'causes' and 'consequences' in a reasonably balanced manner); identifying patterns (e.g. surface winds blow from high to low pressure areas producing trade winds, westerlies and the outblowing polar winds); predicting (e.g. demographic shift); defining processes (e.g. flow and slide as well as the impact of rock slides upon slopes); substantiating an argument using evidence; condensing material into a digestible and appropriately structured form for essay writing or revision purposes; weighing up different arguments and forming a supported view; locating points on maps

Common structures and phrases

predicted vs actual; originates from; low/high pressure systems are usually associated with...; it is caused by a variety of factors, such as ...; the pattern of rural settlement is characterised by...; volcanoes/eskers/deserts are generally found in/where...; earthquakes/weather systems/volcanoes can

pose many hazards for...; the current level of economic development is indicated by...; over time, the repeated freeze-thaw action/in and out flow of water/...; their distribution is strongly dependent on... For sequencing: the process begins with/by...; first; initially; to begin with; second; third; subsequently; previously; furthermore; from thereon; finally; based on..., it is possible to conclude that...; another issue is a lack of...; in conclusion. For comparing and contrasting: however, but, on the other hand, in contrast, in the same way, conversely, on the contrary. For discussing data: this table shows...; over 90% of...; a significant increase in...; ...has reached an all-time high; The Y-axis runs north-south...;. For connecting: thus, however, furthermore, although, nevertheless, in addition. For speaking of cause and consequence: abrasion; absorption; breakdown; bring about, cause; constraint; deterioration; division; impact, influence; pressure; origins; react; reason; responsible for; shift; tensions, unemployment, one of the primary causes of...; the immediate cause is...; a downward spiral is created by...; when unfavourable X conditions are combined with...; this leads to...; ...is caused when...

Chapter Four: Mathematics, Science and Religious Education Programmes

4.1 Mathematics Curricula for European Schools

Arguments about what makes for a good mathematics curriculum largely rely on conceptual work and professional wisdom. We lack sufficient high quality, large-scale evaluations that rigorously test interventions. For this reason an evidence-based research synthesis (let alone any sort of systematic review) is simply not possible (Watson *et al.*, 2013).

Nevertheless, there is a growing body of evidence-informed work about what makes for a good mathematics curriculum. The approach adopted here is therefore to draw on this consensus, at the same time pointing out where substantial differences of opinion exist. We then examine the present European Schools mathematics curricula in the light of this work. Finally, we make recommendations.

Throughout, the emphasis is on student learning. It is likely that other factors are also involved in determining whether or not students continue to study mathematics once they are no longer required to do so. This aspect of mathematics education is relatively under-researched but choosing to continue one's study of mathematics is likely to have much more to do with pedagogy than with curricula (Black *et al.*, 2009; Rodd *et al.*, 2014).

What makes for a good Mathematics Education Curriculum?

Content

In mathematics education there has been a growing acknowledgement that students often fail to appreciate why they are studying what they studying. In addition, mathematics can come across as a series of distinct topics with their interrelationships being neither explored nor understood. There has been a move towards identifying the 'big ideas' of mathematics. At a high level, a European Commission report characterised the 'Big Ideas' in mathematics as:

- Having high potential for developing conceptual knowledge;
- Having high relevance for building knowledge about mathematics as a science;
- Supporting communication and mathematics-related arguments;
- Encouraging reflection processes of teachers (Kuntze *et al.*, 2011, p.8).

At a level more grounded in the specifics of the school classroom, Watson *et al.* (2013) produced a list of seven key mathematical domains:

- Relations between quantities and algebraic expressions;
- Ratio and proportional reasoning;
- Connecting measurement and decimals;
- Spatial and geometrical reasoning;
- Reasoning about data;
- Reasoning about uncertainty;
- Functional relations between variables.

Progression

It is clearly important to have a curriculum that facilitates (or at the very least enables) students to progress in their learning as best they can. In mathematics there are a large number of studies that look at how students of different ages differ in their conceptual understanding. However, such cross-sectional studies have a number of limitations; in particular, they do not track learning at the individual level. The number of longitudinal studies is much smaller (e.g. Tarr *et al.*, 2013).

Studies on students' progression in learning (whether in mathematics or more generally) have often been interpreted as though learning progresses up a ladder or in stages, so that each rung of the ladder (or stage) needs to be reached before subsequent progression can occur. Unsurprisingly, fine-grained observation of students' learning in mathematics, such as that by Streefland (1991), reveals that learning is rarely like this. Not only do learners sometimes regress, they also at times 'jump' a stage (or rung on the ladder). The implication for curriculum developers is that concepts need to be ordered in a logical sequence that facilitates learning but it should not be assumed that learning proceeds inflexibly along such a route. Learning can be more like putting together the pieces of a jigsaw, where this can be done successfully in a number of ways rather than in one predetermined order.

Pathways

Related to the concept of progression is that of pathways. School mathematics can be envisaged as serving at least three constituencies. First, there is the entire population. We live now in a world where to be mathematically illiterate is to be disadvantaged. Accordingly, a function of school mathematics should be to provide what is sometimes referred to as 'mathematical literacy' or 'functional mathematics'. Secondly, there are those who will draw on mathematics in their jobs without mathematics playing a central part. Many scientists, engineers, doctors, nurses and other professionals, including ones in the manufacturing and financial services, fall into this category (e.g. Hoyles *et al.*, 2010). Finally, there are the relatively small number of individuals for whom mathematics is a core aspect of their work.

These include researchers and teachers of mathematics, including secondary school mathematics teachers, as well as those who work in such professions as actuary.

It is not easy to cater for these three constituencies via a single curriculum. The key issue therefore tends to be the age at which students have a choice as to the type of mathematics with which they continue, or whether to drop mathematics altogether. If this age is set too early, students may choose not to continue with mathematics, or with a comprehensive mathematics course, where they might otherwise have done so. This is unfortunate for a number of reasons not the least being that in Europe and worldwide there is, has been for many years and is projected to continue to be a shortage of mathematics graduates. However, if this age is set too late, students who love mathematics and find it easy may become bored and fail to reach their potential while others may find more and more of the curriculum to be of little relevance for them.

The Use of Contexts or Applications

Much of school mathematics has the reputation of being difficult, dull, out-of-touch with students' aspirations and irrelevant to society as a whole (e.g. Hodgen *et al.*, 2013). Specifications have traditionally been constructed from the perspective of professional mathematics educators with the concepts being presented in ways that are seen to be sensible by such educators. But many students see things differently and want teachers to show them *why* the concept is important. One possibility is to concentrate on 'realistic mathematics education' (Treffers, 1987; Freudenthal, 1991).

A number of curricula in mathematics have adopted this approach, sometimes with near-evangelical zeal, with claims that such curricula will enhance both learning and motivation. It is difficult to undertake rigorous evaluations of the effectiveness of this approach, not least because it is often the case that schools can choose whether or not to adopt such courses; this means that valid controls are hard to come by. By and large, though, evaluations have been positive, indicating benefits for students who would otherwise be low attainers with respect both to their attainment and their motivation (Holt, Rinehart and Winston Department of Research and Curriculum, 2005; Searle and Barmby, 2012).

The Current European Schools Mathematics Curricula

Content

There is widespread agreement among mathematics educators that mathematics is a process of enquiry, and that mathematics is best learned through active student involvement rather than by just following the teacher's directions (Tatto, 2013). This is in accord with the stated

aims of the European Schools mathematics syllabuses, as stated in the preamble to the S4-7 syllabuses:

Mathematics instruction must progress systematically and create a lasting foundation for the assimilation of mathematical concepts and structures. The aim is to develop pupils' mathematical skills, such as creative, logical and analytical thinking. Pupils should develop the skills of formulating mathematical problems appropriately, then finding the solutions to the problems and finally presenting their methods and conclusions in a neat and orderly fashion. Problems that come up in day-to-day situations, and that can be resolved with the aid of mathematical thinking or operations, are to be utilised effectively.

Overall, it is clear that the various mathematics syllabuses do an excellent job at providing students with a rigorous and coherent mathematics education. The coverage of algebra/analysis, geometry, statistics and probability is very strong and the treatment of the use of calculators and other technological tools (e.g. computer software) is systematic and better than obtains in certain comparable national curricula.

However, by far the most obvious point that strikes one when examining these syllabuses is that as soon as one moves beyond the Elementary S4 syllabus, the depth of the mathematical demands made on students seems very high. To give an example, the following is taken from the S5 Elementary syllabus:

TOPIC	KNOWLEDGE & SKILLS
Trigonometric Ratios	<p><i>Pupils must be able to and/or understand :</i></p> <ul style="list-style-type: none"> ▪ deduce and know by heart values of $\sin\varphi$, $\cos\varphi$ and $\tan\varphi$ for standard angles : $\varphi = 0, 30, 45, 60, 90$ and also in radians ▪ know by heart values of $\sin^{-1}(a)$ and $\cos^{-1}(a)$ for $a = 0; \frac{1}{2}; \frac{\sqrt{2}}{2}; \frac{\sqrt{3}}{2}; 1$ with $0 \leq \varphi \leq \frac{\pi}{2}$ ▪ deduce $\tan^{-1}(a)$ for standard values with $0 \leq x \leq \frac{\pi}{2}$ ▪ use the graphs to understand that other angles will give the same trigonometric ratios as the standard angles ▪ solve simple equations of the kind $\sin\varphi = \pm \frac{1}{2}$, $\cos\varphi = \pm \frac{\sqrt{2}}{2}$ by only using graphs in both degrees and radians

It is very difficult to defend the inclusion of all of this material in an ‘Elementary’ course for 15-16 year-old students.

The S6 Elementary curriculum has a small number of places that very helpfully indicate why material might be of value other than for intrinsic considerations, for example:

TOPIC	KNOWLEDGE & SKILLS
Periodic functions	<p><i>Modelling cases such as sound waves, daily or seasonal temperature fluctuations, cycles of ovulation, the coefficients of the tides.</i></p> <p><i>Pupils must be able to and/or understand:</i></p> <ul style="list-style-type: none"> • interpret graphs of functions related to circular functions, such as $x \rightarrow a \sin(bx + c)$ or $x \rightarrow a \cos(bx + c)$, in terms of amplitude, period, phase shift and roots

However, this example also illustrates the fact that it seems that it is mathematics educators who have sought to find instances of how mathematics might be applied in real life. In reality, though, as far as this example goes, it is virtually inconceivable that such mathematics would ever be of use to S6 students hoping to understand more about ovulation cycles.

Much of the S6 Further Syllabus is of university standard and this is even more the case for the S7 Further Syllabus, the majority of which is of university level at even strong European universities. A strength of the curricula is that they are presented in terms of what students should be able to do and understand rather than simply as a list of topics that teachers need to teach.

It is good to see that there are some written papers in which students are allowed to use technological tools ('calculators') and others where they are not. The written papers do an excellent job of determining the extent to which students understand the mathematics they have been taught. The Elementary examinations do quite a good job of setting the mathematics in real-life contexts. However, there is little evidence that any of the examinations reward students who have developed skills of mathematical enquiry.

Progression

The syllabuses enable progression in terms of their sequencing of topics. What is at issue, though, is the rate at which students are expected to progress. It seems clear that, however good the teaching, this is likely to be beyond the capabilities of a substantial proportion of students.

Pathways

There is a common syllabus for S1-3 and then increasing specialisation with two routes: (Elementary and Standard) for S4-5 and three for S6-7 (Elementary, Standard and Further). Given the high level demand of the S4 syllabus, as discussed above, there is much to be said for abandoning the S4 Standard course and renaming the S4 Elementary course as 'Standard'. This would mean that students would have an additional year of studying a common curriculum before deciding whether to take a more advanced mathematics course. The question of whether such a new S4 Standard course should be taught in 4, 5 or even 6 periods a week is a separate one; indeed, its answer might well be left to individual schools to decide, depending on the nature of their intake and other factors.

Quite a bit of what is in the S5 Standard curriculum could be left to the S6 Standard curriculum. There is a strong argument for completely recasting the whole of the S6 and S7 Elementary syllabuses so that they explicitly function to assist student who are studying the

sciences and any other subjects (e.g. economics, geography) where a better understanding of mathematics as a service subject would be of value to them.

The Use of Contexts or Applications

The approach taken in the syllabuses is not one of ‘realistic mathematics education’ though attention is given to the use of contexts and applications. There is little doubt that the use of these, particularly up to S5 and for the S6-7 elementary course, could be increased without decreasing mathematical rigour. Such an increase would be likely to benefit many of the students who find their mathematics hard and of limited relevance.

Recommendations

- With the exception of the Elementary S4 syllabus, reduce the mathematical demands made on the students in all the syllabuses and accompanying examinations.
- Abandon the S4 Standard course and rename the S4 Elementary course as ‘Standard’.
- Rewrite the whole of the S6 and S7 Elementary syllabuses so that they better assist students studying the sciences and any other subjects where an understanding of mathematics is of value.
- Increase the use of contexts and applications, particularly up to S5 and for the S6-7 elementary course.
- Ensure that the examinations reward students who have developed skills of mathematical enquiry.

4.2 Science Curricula for European Schools

Arguments about what makes for a good science curriculum largely rely on conceptual work and professional wisdom. We lack high quality, large-scale evaluations that rigorously test interventions. For this reason an evidence-based research synthesis (let alone any sort of systematic review) is simply not possible.

Nevertheless, there is a growing body of evidence-informed work about what makes for a good science education curriculum. The approach adopted here is therefore to draw on this consensus, at the same time pointing out where substantial differences of opinion exist. We then examine the present European Schools science curricula in the light of this work. Finally, we make recommendations.

Throughout, the emphasis is on student learning. It is likely that other factors are also involved in determining whether or not students continue to study science once they are no longer required to do so. This aspect of science education is relatively under-researched but

choosing to continue with science is likely to have much more to do with pedagogy than with curricula (Cleaves, 2005; Rodd *et al.*, 2014).

What makes for a good Science Education Curriculum?

Content

Perhaps the most fundamental issue is that of content. In science education there has been a growing acknowledgement in recent times that many school curricula are overloaded. Too much time is spent covering a myriad of specific, often isolated, pieces of content with the result that the ‘big picture’ is lost. In contradistinction to this, the ‘big ideas’ of science education have been identified. A frequently expressed hope is that concentrating on these big ideas will not only facilitate the development of secure knowledge and understanding but also enhance student motivation.

The best known of the attempts in science education to map what these big ideas might consist of is provided by Harlen *et al.* (2009) who came up with ten ideas *of* science and four *about* science:

Ideas of Science

1. All material in the Universe is made of very small particles.
2. Objects can affect other objects at a distance.
3. Changing the movement of an object requires a net force to be acting on it.
4. The total amount of energy in the Universe is always the same but energy can be transformed when things change or are made to happen.
5. The composition of the Earth and its atmosphere and the processes occurring within them shape the Earth’s surface and its climate.
6. The solar system is a very small part of one of millions of galaxies in the Universe.
7. Organisms are organised on a cellular basis.
8. Organisms require a supply of energy and materials for which they are often dependent on or in competition with other organisms.
9. Genetic information is passed down from one generation of organisms to another.
10. The diversity of organisms, living and extinct, is the result of evolution.

Ideas about Science

11. Science assumes that for every effect there is one or more causes.
12. Scientific explanations, theories and models are those that best fit the facts known at a particular time.

13. The knowledge produced by science is used in some technologies to create products to serve human ends.
14. Applications of science often have ethical, social, economic and political implications.

At a level above such lists of ‘big ideas’, there are considerable differences between countries in the extent to which certain of the sciences are included within school science. While biology, chemistry and physics are universally found within the fold, countries vary in the degree to which they include astronomy, earth science(s), electronics and psychology.

Progression

It is clearly important to have a curriculum that facilitates (or at the very least enables) students to progress in their learning as best they can. In science there are a large number of studies that look at how students of different ages differ in their conceptual understanding. However, such cross-sectional studies have a number of limitations; in particular, they do not track learning at the individual level. The number of longitudinal studies is much smaller – a classic instance is Shapiro (1994).

Studies on students’ progression in learning (whether in science or more generally) have often been interpreted as though learning progresses up a ladder or in stages, so that each rung of the ladder (or stage) needs to be reached before subsequent progression can occur. Unsurprisingly, fine-grained observation of students’ learning in science, such as that by Shapiro (1994), reveals that learning is rarely like this. Not only do learners sometimes regress, they also at times ‘jump’ a stage (or rung on the ladder). The implication for curriculum developers is that concepts need to be ordered in a logical sequence that facilitates learning but it should not be assumed that learning proceeds inflexibly along such a route. Learning can be more like putting together the pieces of a jigsaw, where this can be done successfully in a number of ways rather than in one predetermined order.

Pathways

Related to the concept of progression is that of pathways. Many science courses at some age divide into two or more pathways. A common dichotomy is between (a) academic/pure and (b) vocational/applied. In principle this could be independent of ability/attainment – and sometimes this proves to be the case. For example, in higher education, courses in medicine and veterinary science, while manifestly vocational/applied, often have higher entry requirements than their academic/pure counterparts. At school level, however, those taking vocational/applied routes are generally lower attaining students.

A particular issue in science is whether the various sciences should be taught separately or together. With younger children (e.g. in primary schools), the sciences are typically taught by one teacher, and this facilitates, but does not require, a more interdisciplinary approach. As students age, they are more likely to be taught science by two or three different teachers though some schools continue to teach combined science to the end of compulsory schooling. There is no evidence that studying combined sciences reduces failure rates. Indeed, one of the arguments in favour of having separate sciences (assuming they are not all compulsory) is that students can concentrate on the sciences they most enjoy and/or are good at – e.g. chemistry and physics, dropping biology. On the other hand, one advantage of combined sciences (even if taught by teachers teaching to their specialism within science) is that it makes it easier to cover subjects like earth sciences, which tend to get rather messed about if forced into the separate boxes of biology, chemistry and physics.

An important issue about course choice within a subject is whether the choice of particular courses cuts off the opportunity for subsequent study. This possibility is especially acute in science. For example, before the introduction of the National Curriculum in England and Wales in 1989, a student (often, in reality, the school on their behalf) could choose how many, if any, of the three subjects, biology, chemistry and physics, to study. The result was that only a small minority of students studied all three to age 16, with a gendered pattern resulting so that girls were more likely to choose biology and boys chemistry and physics. Such choices are resilient to change so that decisions made during secondary schooling, often with little conscious reflection, can have lifelong consequences.

The Use of Contexts or Applications

Much of school science has the reputation of being difficult, dull, out-of-touch with students' aspirations and irrelevant to society as a whole (Osborne *et al.*, 1998). Specifications have traditionally been constructed from the perspective of professional science educators with the concepts being presented in ways that are seen to be sensible by such educators. But many students see things differently and want teachers to show them *why* the concept is important. One possibility is to make the context – or storyline – the driving force (Hall *et al.*, 2003).

A number of science curricula in science have adopted this approach, sometimes with near-evangelical zeal, with claims that such curricula will enhance both learning and motivation. It is difficult to undertake rigorous evaluations, not least because it is often the case that schools can choose whether or not to adopt courses that have this sort of approach; this means that any notion of valid controls is hard to come by. By and large, careful evaluations seem to suggest that any generalisable benefits are probably small in terms of conceptual development, if they occur at all, but that such courses may serve to motivate certain students (Barker and Millar, 2000; Bennett *et al.*, 2007).

The Development of ‘Skills’

The notion that skills exist independently of content has been widely critiqued yet the development of ‘practical skills’ features as an aim in many science courses. Practical work in science encompasses a broad range of activities that can have widely differing aims and objectives (Lunetta and Tamir, 1979). As such, the effectiveness of *specific* practical tasks, rather than the effectiveness of practical work in general, is what needs to be considered. An analytical framework that is increasingly being used in research on school practical work derives from Millar and Abrahams (2009). It can be summarised by thinking about practical work in terms of *doing* things with objects and ideas and/or *learning* about objects and ideas. For some activities, the teacher just wants the students to ‘do things’ with objects or materials in order to see a phenomena or an event, and remember what they saw. Such activities usually described as ‘hands-on’ are essentially just about ‘doing’ things. For others, the aim of the teacher is to help students understand some of the ideas that science uses to describe or to explain what they observe – and only really make sense as activities if one looks at them from the perspective of a particular set of ideas. For such activities, thinking is as important as doing and such activities can be thought of as being both ‘hands-on’ *and* ‘minds-on’ (Abrahams and Reiss, 2012).

The Current European Schools Science Curricula

Content

The present science syllabuses, particularly the ones revised in 2011, have some great strengths:

- They cover the subjects extremely well, including, in some cases, material often omitted in national curricula (e.g. material for S4 and S5 on human evolution, including cultural evolution).
- They make explicit certain interdisciplinary links (especially links to ICT, mathematics and geography).
- They include historical, social, ethical, cultural and technological influences.
- They include material on what might be called ‘the nature of science’, notably scientific phenomena, facts, laws, definitions, concepts and theories
- They sometimes state detail that is *not* required (“limits of the syllabus”), thus helping to ensure that students see the ‘big picture’ rather than get overwhelmed with detail
- They suggest relevant practical activities.

Nevertheless, the chemistry and physics curriculum, physics in particular, could do with updating. At both S4-5 and S6-7, there is little on either astronomy or electronics. Inclusion of such material would broaden the subject's popularity; astronomy is regularly identified in international surveys, e.g. Schreiner (2006), as being one of the most popular topics within science for both boys and girls (something that is rare, as usually boys and girls have marked differences with regards to the science topics they say they like). To avoid the curriculum simply increasing in size, which would not be desirable, inclusion of new material on topics like astronomy and electronics would allow some of the more abstruse material presently in the syllabuses to be omitted. A further advantage is that this would reduce the mathematical demand in the physics syllabuses, which is high and unrelenting; this should reduce the failure rate and enhance the subject's popularity and uptake.

A separate point is that the curricula are presented simply as lists of material that is to be covered. In a number of countries the focus has moved from what teachers need to cover in their teaching to what students can expect to learn, e.g. as expressed by learning outcomes. Such a shift is not a panacea but would be worth considering.

The examinations do a fine job of requiring students to think, so that not too many marks reward rote learning but, instead, require students to do such things as:

- Translate information from one form to another;
- Manipulate numerical and other data;
- Identify patterns, report trends and draw inferences;
- Present reasoned explanations of phenomena, patterns and relationships;
- Make predictions and propose hypotheses, solve problems, including some of a quantitative nature.

Indeed, the Baccalaureate examinations are very well designed. There are some easier marks available (as is desirable) and the questions are clear. It is clear that these examinations are of at least the same sort of standard that one would find for 'A' level examinations in the sciences in England and other countries that take 'A' levels. Given the number of different subjects that are taken in the European Baccalaureate, compared to A1 levels where only three subjects are normally taken, this suggests that the demands on the candidates are very high. At the same time, it seems clear that some of the content is under-examined, in particular material relating to the nature of science and historical, social, ethical, cultural and technological influences. The examination questions therefore come across as very 'pure'. There is surprisingly little on health in biology or on green chemistry, for example. The physics S6 and S7 syllabuses and accompanying examination make very high mathematical demands on students.

The time allowance for the written examinations is generous and candidates have some choice as to the structured questions they answer. There is an argument for removing such choice as it is very difficult to ensure that different structured questions have equal difficulty, while choice can lead to teachers not teaching all of a course or to students revising only selectively.

Progression

Ensuring that students progress in their learning is more to do with pedagogy and formative assessment than with the curriculum. The present European Schools science curricula seem well designed to enable student progression, with two caveats. First, there is quite a jump in difficulty from S1-3 to S4-5; secondly, some students will find the mathematical demands in physics at S4-5 and S6-7 to be too great. Indeed, too high a level of mathematical demand can be counterproductive, leading some students to conclude that they ‘can’t do the maths’ and therefor dropping physics.

Pathways

Much of science education consists of students moving from everyday, common sense understandings of the natural world to more abstract understandings. For many students, science does, therefore, become more difficult throughout their secondary education and this problem is compounded by the reliance, especially within the physical sciences, on mathematics.

The present S1-3 curriculum in science is an integrated curriculum and many students find the jump to three separate sciences for S4-5 to be a challenge. It has therefore been proposed that the present structure of S1-3, S3-5 and S6-7 be replaced by one of S1-4 and S5-7 on the grounds that this would allow one further year (S4) of integrated science. We can see the force of this argument – and very strongly support any proposal that reduces student failure and drop out. Furthermore, it is rare that much is gained by having students repeat an entire year of a course (Hattie, 2008).

Nevertheless, it is important to realise that the issue is fundamentally *not* a structural one. It is more one about having age-related content that is appropriate for students. Many countries perfectly successfully teach the separate sciences in primary school. What are needed are curricula and pedagogies that do not make sudden leaps between years. In addition, a problem with the S1-4 and S5-7 proposal is that it would lead to many more students not taking science at S5. This would make European Schools different from the great majority of schools in Europe where science (including biology, chemistry, physics and often elements of earth science) is a compulsory subject up to and including S5. Finally, S5 seems quite early

for students keen on science to choose between the sciences (e.g. to drop biology but continue with chemistry and physics). This seems more appropriate for S6-7.

There seems to be no appetite within the European School movement for an alternative pathway in science, e.g. ‘applied science’ that would suit students going straight into science-related employment on leaving school (e.g. as science technicians). Given the nature of the student intake that exists at European Schools, we see no reason to advocate the development of such a pathway.

The Use of Contexts or Applications

The curricula quite often make reference to contexts or applications. However, the examination questions are light on the use of contexts or applications. Increasing the use of these in examination questions might lead to desirable shifts in pedagogy and help some students to appreciate more the usefulness (e.g. for health, for industry, for society) of much of what they are learning in science.

The Development of ‘Skills’

The syllabuses include a good spread of practical skills (e.g. work safely, plan and carry out investigations, use appropriate apparatus and materials, make and record observations and measurements, present data in a range of formats, interpret and evaluate findings). Encouragingly, there is also explicit mention of more ‘general’ skills that are often wanted by universities and employers, e.g. organising one’s time and co-operating with others.

Recommendations

- Ensure that the curricula do not get swamped in excessive detail but, at least for S1-5, concentrate on the ‘big ideas’ of science.
- Update the curricula, especially for physics, so that contemporary aspects and material that engages students is included, abstruse material that can be covered later if students progress to more advanced stages is omitted, and the mathematical demands are reduced in some areas.
- Ensure that curricula do not make sudden jumps between years in the academic demands placed on students.
- Consider whether the curricula might be presented more with regards to student outcomes (e.g. via learning objectives) than solely by material to be taught.
- Be cautious about making any structural changes that would lead to more students not studying the full breadth of science (biology, chemistry and physics) up to and including S5.

- Ensure that the examinations cover the full aims and content of the syllabuses rather than concentrating on material that is easier to assess. In particular, it would be good to have more examination questions that address the nature of science and historical, social, ethical, cultural and technological influences.
- Consider removing choice from papers with structured questions.
- Make a higher proportion of marks in the examination for physics available to candidates who do not have the highest level of mathematics.

4.3 Religious Education

What do we want in a European Schools Religious Education Curriculum?

Disagreement about the nature of the curriculum occurs in all subjects and religious education is no exception. However, controversy about the purpose of the religious education curriculum can be particularly intense. Here we identify the three main aims for a religious education curriculum (making use of general debates in the religious education community and as discussed in Jackson, 2004; Parker-Jenkins *et al.*, 2005; Hand, 2006; Conroy *et al.*, 2013; Chapman *et al.*, 2014), discuss which of these, or which combination of these, might be most appropriate for European Schools and then examine the present European Schools religious education curricula and the non-confessional ethics course in the light of our examination.

Possible Aims for Religious Education

Maintain the Faith

A well-established aim of much religious education is to maintain the faith of students in one particular religion or denomination (i.e. confessional religious education). Such an approach is often popular with certain parents who want to see a school promoting the same religious way of understanding the world that they provide in their homes. This aim is often found in what are typically referred to as ‘faith schools’ (whether publicly or privately funded), by which is meant that one particular understanding of religious faith predominates. Proponents of this approach may argue that parents have a right to ensure that their children are educated within a particular religious framework or ethos.

Schools that have this approach vary greatly in the amount of time that is explicitly devoted to religious education in the curriculum. In some schools this can take up half the timetabled curriculum. In others the time spent on religious education may be much less, typical of or less than that spent on other subjects.

A related aim is to proselytise (convert) students from no religious faith or (more rarely) from one religious faith to another. However, such an explicit aim is increasingly uncommon within Europe.

Introduce Students to One or More Religions

An aim of religious education that has become more common in recent decades is to introduce students to one or more religions, typically one or more of what are often referred to as the five world religions – Christianity, Islam, Hinduism, Buddhism and Judaism (even though at a global level Judaism has fewer adherents than a number of other religions). Students are generally introduced to a number of dimensions of each religion, including its scriptures, main doctrines and practices. The aim is typically to get students to understand what it is like to be an adherent of a religion, without in any way implying that they should develop a religious faith if they do not already have one, and to help students appreciate the similarities and differences between religions. Done well, of course, such an approach to religious education should not undermine a student's own religious faith, if they have one.

Proponents of this approach typically argue that religions play an important role in society, even in countries where only a minority of people profess a religious faith, and that better understanding of religions might increase social cohesiveness and perhaps reduce religious extremism. In certain respects this approach is akin to what teachers of geography, history and even foreign languages do when they attempt to help students understand what it is to live elsewhere or at a different time or to have a different home language and culture.

Introduce students to philosophical questions, e.g. about the meaning of life, and to ethical thinking

One aim of religious education, which can co-exist with either of the other two, is to use the subject expertise of religious education teachers to help students improve the quality of their reasoning about such major philosophical questions as 'What is a good life?' and 'How should we behave?' Of course, in pluralist and liberal societies, a high proportion of people hold that the answers to such questions are not to be found only within a religious worldview but the pragmatic reality is that religious education teachers often have a more rigorous philosophical training than do teachers of most other subjects and so are particularly suited to teaching such topics, whether or not they are addressed within a religious framework.

This aim of religious education can be popular with many students, especially those for whom religion has little or no attraction. Such students are unlikely to be much interested in the practices, doctrines or history of religions but may be much more interested in a range of possible answers, religious and non-religious, to questions about meaning and ethics.

What aim for religious education might be most appropriate for European Schools?

Every age may think that things are changing faster than they have before, yet it seems clear that with the last generation or two European society has changed hugely in terms of the importance of religion. These changes have been of three main types. First, the proportion of people who openly state that they are atheists, humanists or simply don't have much or any interest in religion has increased very substantially. Secondly, the importance of religion in public life has eroded considerably so that in a number of European countries, religion now plays almost no public role beyond the occasional ceremonial or traditional. Thirdly, there has been an increase in religious diversity. This has been most notable in the case of Islam. Countries in Europe that only a generation or two seemed to have very few Muslims may now have large Muslim communities and questions to do with Islam and Muslims are much higher up the political agenda.

Accordingly, it seems to us that European Schools have a great opportunity, perhaps even a duty, to prepare students to deal with these changes. Given the firmness with which many people hold views about religion (whether for or against), it seems valuable to have education in schools that would both inform students about religions and allow them, within the sort of structured environment that a good teacher can provide, to explore and come to understand different points of view about religious faith, doctrine and practice. Done well, such teaching should neither weaken the religious faith of those students who have such a faith nor seek to convert students to any religious adherence; rather, it should facilitate understanding, values clarification and, within appropriate limits, such virtues as tolerance.

How does the present European Schools religious education curriculum fare in the light of these considerations?

There are four programmes for religious education in European Schools: for Catholicism (i.e. Roman Catholicism), for Islam, for Orthodox Religion (i.e. Orthodox Christianity) and for Protestant religious education. Each of the relevant syllabuses has an Introduction, which describes the “common objectives for all religion classes being taught in the European Schools”. These include:

- Religion classes taught in the European Schools are intended to provide a special educational environment. Through these classes, individual pupils acquire points of reference for their future lives, learn how to select from different options for their daily lives, and also how to organise themselves and to live in a way that is carefully thought out and responsible.

- They implement a comprehensive education which principally searches for meaning and poses questions, “drawing inspiration from cultural, religious and humanist inheritance of Europe” such as defined in the Preamble of the Lisbon Treaty.
- Religion classes provide rigorous information on the articles of faith that belong to each religion. They stimulate initiatives which develop a consistent approach to values in order to prepare all pupils to become responsible citizens, capable of contributing to the development of societies that are democratic, supportive, pluralist and open to other cultures, and to access the wealth of cultural diversity, whilst encouraging the recognition and respect of the diversity of beliefs.

As an alternative to these four programmes, there is a ‘course of non-religious ethics’. This has worthy aims and a content that is appropriate for any young person growing up in today’s Europe. However, it lacks detail and, unlike the four religious education programmes, fails to provide any sort of coherent framework within which ethics may be studied.

There is much in the present arrangements that is good. While the four programmes differ in their depth of treatment, they contain much valuable material. Indeed, the one on Protestantism even includes material on the poems of Emily Dickinson, the films of Ingmar Bergman and the works of Rembrandt, Bach and Handel. Furthermore, as one might expect, there are considerable overlaps among the four programmes and the course of non-religious ethics.

Building on this, a number of ways forward can be proposed:

- There should be a common core to a new programme. This can build on the common objectives that the four programmes share and existing material that occurs in several of the syllabuses. As a possible model, the Protestant programme explicitly includes material on Judaism, Islam and Buddhism.
- This common core should include a more rigorous version of the present course of non-religious ethics and should present humanism as positively as it portrays religions.
- The new programme should require all students to study at least two religions, of which no more than one should be one of the Christianity denominations.
- The aim of the programme should not be confessional.

Chapter Five: Curriculum Arrangements in the Schools

It is our view that there is a variety of possible curriculum arrangements and that a successful solution to all the issues that we address in this report depends on sensible and coherent choices being made between the various options. Though we discuss these issues here, we also propose to revisit them in the final report.

Curriculum Arrangements refer to the following:

- Subject areas in the EU Schools curriculum.
- Types of boundaries between those subject areas in the EU Schools Curriculum. [For example, Language, Literature, Mathematics, Physics, Biology, Chemistry, Foreign Language, Physical Education, History, Geography, Sociology, Art, Music and Drama is an example of strong boundaries between different subjects. An example of weak boundaries between different subjects is as follows: Language Studies, Science, Mathematics, Humanities, Arts, Physical Education and Foreign Languages. Ten models of curriculum integration can be identified and these range from strongly classified and strongly framed curricula, as in the first approach, to weakly classified and weakly framed networked approaches to curriculum planning, as in the second approach. Between the two extremes: traditional or fragmented *and* networked approaches, there are eight other points on the continuum: connected, nested, sequenced, shared, webbed, threaded, integrated and immersed.]
- The designation of compulsory areas of the curriculum which all students in the EU Schools system would be required to take, and the allocation to each of these areas a weekly timeframe, length of period, and in some cases different pedagogic mode, i.e. in Science theory-based and practical lessons may be distinguished.
- The designation of optional areas of the curriculum which all students in the EU Schools system would be required to take, and once again the allocation to each of these areas of a weekly timeframe, length of period, and in some cases different pedagogic mode, i.e. in Science theory-based and practical lessons may be distinguished.
- Decisions being made about streaming and setting processes as they relate to compulsory and optional areas of the EU Schools curriculum. This might mean that different streams or sets of students are created within each school; or a policy is adopted in the schools of mixed ability groupings throughout the timetable.
- Size of classes and pedagogic arrangements in relation to streaming and setting policies, compulsory and optional subjects, *and* strongly classified and framed curricula or weakly classified and weakly framed networked approaches to curriculum planning.
- The allocation of resources, including teacher resources, in relation to the curriculum issues set out above.

- Centralising and decentralising arrangements within the EU School system, i.e. whether these decisions about the curriculum should apply to all parts of the system or that different types of schools within the system should be allowed to make these curriculum decisions by themselves. In other words, the decision that needs to be made is between curriculum uniformity within the system or diversity of provision within the system.
- The consequences of these types of decisions for the Schools; for example, on the make-up of the Baccalaureate, or higher education access.

These issues will be revisited for the final report.

5.1 Current Curriculum Arrangements for Secondary School

In the secondary school, students are taught in 45 minute periods with a minimum of 31 and usually a maximum of 35 periods per school week. The secondary school curriculum is divided into three stages.

Year 1 to 3

Students follow a broad academic curriculum including languages 1 and 2, language 3 from year 2 onwards, mathematics, integrated science, religion/ethics and sport. Human science is taught in language 1 in years 1 and 2 and in language 2 from year 3 onwards.

Year 4 and 5

Students continue to follow a broad curriculum during these two years which includes a large number of compulsory subjects. They must take mathematics for 4 or 6 periods per week and languages 1, 2 and 3 (all taught in the language concerned). Biology, chemistry and physics are studied for 2 periods per week each. History and geography are studied for 2 periods each in the student's second language. At least two elective subjects must be chosen from, for example, language 4, economics, Latin, Greek, art, music and IT. There is no GCSE examination equivalent at the end of year 5 but students are awarded an overall year grade in each subject based on coursework assessment and two sets of examinations, the second of which is harmonised across language sections.

Year 6 and 7

These two years lead to the Baccalaureate. Students must study at least ten subjects and are examined by means of written and oral examinations and by continuous assessment. There is a core of compulsory subjects, which include language 1 (mother tongue), language 2 (first foreign language), mathematics, history, geography, philosophy, religion/ethics and sport. In

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addition, if no science subject is taken as an elective subject, students must also take a course of two lessons per week in biology. Students must take a minimum of two elective subjects of four lessons per week and may take as many as four. These subjects may include each of the separate sciences, social sciences, Latin, art, music, philosophy and languages 3 and 4. Mathematics can be taken as a 3-lesson or 5-lesson per week course. Additional advanced courses of three lessons per week may be taken in mathematics, language 1 and language 2. Students may also choose complementary courses of two lessons per week such as practical science, introductory economics, art, music and theatre. The table below is an example of the choices available for students. There are some variations within the system but we have noted that these variations are considered important by the various stakeholders, and therefore will need particular consideration.

Sample Course Structure: Years 6 and 7**Subject Choice – General Rules**

Total Study Programme: **minimum 31 periods.**

Columns 1 to 4: **minimum 29 periods**

Column 3: **minimum 2 options, maximum 4 options**

Compulsory Subjects

Column 1		Column 2	
Language 1	4p	History	2p
Language 2	4p	Geography	2p
Maths 3	3p	Philosophy	2p
Or		Biology	2p
Maths 5	5p	[These courses are compulsory unless they are chosen in Column 3. Biology 2p is compulsory unless Biology, Chemistry or Physics is chosen in Column 3]	
Ethics/Religion	1p		
Sport	2p		
Total	13-15p	Total	2-8p

Optional Courses (Elective Subjects)**Compulsory Courses**

Column 3		Column 4		Column 5	
Art	3p	Advanced L1	3p	Art	2p
Music	4p	Advanced L2	3p	Economics	2p
Biology	4p	Advanced Maths	3p	ICT	2p
Chemistry	4p	[Advanced Maths only if Maths 5 is chosen in Column 1]		Lab Bio	2p
Physics	4p			Lab Chemistry	2p
Geography	4p			Lab Physics	2p
History	4p			Music	2p
Philosophy	4p			Sociology	2p
Economics	4p			Politics	2p
Latin	4p			Theatre Studies	2p
Ancient Greece	4p			Advanced Sport	2p

[Art2, Music2 and Eco2 are excluded if chosen in Column 3. Lab course only if corresponding Science option is chosen in Column 3. L5 is a new language.]

Language 3 4p
Language 4 4p

Language 5 2p

Our investigations into this area are ongoing and we propose to revisit them in more detail in the final report.

5.2 The proposed reform of creating streams starting from S4

In this section we look at the issues linked with the idea of creating ‘streams’ (partially at S4-5 years, consistently for S6-7 years). In doing so, we draw on the different opinions expressed by the stakeholders and in particular, the following literature: the minutes of the Working Group on the Reorganisation of the Secondary Studies (from 2012-2014), including seven meetings; the minutes of the Board of Governors (2013), two meetings; the documents provided by the rest of the competent stakeholders (Minutes of the JTC in 2013, communication from Interparents regarding the alternative proposal, the minutes of the enlarged meeting of the Board of Inspectors in 2013); and the minutes of the meetings between the evaluators and the stakeholders, five meetings (including Culham).

Often setting and streaming are used as mechanisms in schools to allow for ability grouping and specialisation. Used strictly as a technical term, setting involves students being tested and divided into ability groups for particular subjects. They will then continue through with these groups unless they later are seen to be very much in advance of their group peers, or behind, in which case teachers will arrange for a more appropriate setting for an individual student. With setting, it would be possible to be in, say, a top set for mathematics whilst being in a lower set for, say, science, depending on what was thought to be in the student’s best interests. If setting is done sensitively and appropriately, any student in any set should be able to achieve the highest grades; in other words, being in a lower set should not condemn a student to low aspirations, or mean that they need to drop a subject later on. Rather the teaching needs to be arranged to ensure the most appropriate approach for the students at any given time to ensure best results. Streaming, on the other hand, is a technical term often used to describe a system when a student will be in a group for most or all of their subjects, regardless of their individual ability in any particular subject. Whilst being in a consistent peer group has advantages for some students, this model of grouping can be rigid as it does not reflect differential ability and prior attainment in individual subjects.

Both setting and streaming come with a number of inherent, and often erroneous, assumptions and expectations, for example:

1. *Groups are evenly distributed.* In reality, the top and bottom sets or streams may contain statistical outliers, in student ability terms, and the remaining middle groups may largely comprise students of broadly similar ability levels.

2. *Setting anticipates higher education trajectory.* It is sometimes considered that, in order to do something at university, you need to have been in a top set for this subject, or a top stream, as this demonstrates your ability level. In reality, if setting is carefully organised, its aim should be to achieve a careful match between teaching style and student, in order to maximise attainment.
3. *Ability is fixed.* Sometimes, it is thought that the set or stream where you start determines where you finish. Once again, if ability grouping is carefully practised, the groups should be reviewed regularly (at least annually) to ensure a correct fit. The role of puberty, rate of cognitive development, and effect of peer group relationships needs to be taken into account in the case of all students, to ensure they are well served by such ability groupings, and there needs to be routine movement up and down accordingly, in consultation with students and parents.

The evidence from primary and secondary education suggests that, overall, structured ability grouping (streaming and setting), of itself, has no positive impact on average attainment, and indeed can widen the gap between low and high attainers (Ireson et al., 2002; Kerckhoff, 1986; Schofield, 2010; Wiliam and Bartholomew, 2004). Therefore as a mechanism for ensuring a good match between teacher style and student learning approaches, it may have some validity as an administrative convenience, but should not be relied upon as a mechanism that automatically leads to improved academic attainment for the majority of students.

In terms of the upper secondary curriculum reorganisations proposed by the European Schools, the term ‘streaming’ is being used in a slightly different sense, namely as a kind of ‘pathway’ for different subject areas. This mixing of terms is leading to a degree of confusion. However if we take into account the principles of the Working Group and the Board of Governors (2013-09-D-17-en-5, approved 3, 4 and 5 December 2013), we can see the main issues of concern in rationalising educational programmes, and the conflicting imperatives of relevance, coherence and breadth:

The philosophy of the current proposals requires any curriculum reorganisation to:

- Adapt the studies offer to *students’ interests* faced with the modern world’s demands. (Relevance)
- Take account of the opening up of the European Schools system and of the recommendations made in the different reports: January 2009 University of Cambridge,

recent reports of the Chairmen of the European Baccalaureate Examining Board, May 2011 Cavada report. (Relevance)

- Propose solutions for *greater rationalisation* of courses in the secondary cycle. (Coherence)
- Present students with the *same offer of courses* for all the European Schools and Accredited Schools and bring together in a single document information which is currently to be found in various places. (Coherence)
- Guarantee a general education for all students around the *eight key competencies* for lifelong learning. (Breadth)

It is also important to consider how the secondary curriculum can best prepare students for access to further and higher education, as this is an understandable ongoing concern for students and their parents. We therefore need to consider how a series of pathways might look that offer sufficient coherence, relevance and breadth, whilst still being manageable administratively, and allowing smooth transitions to further and higher education.

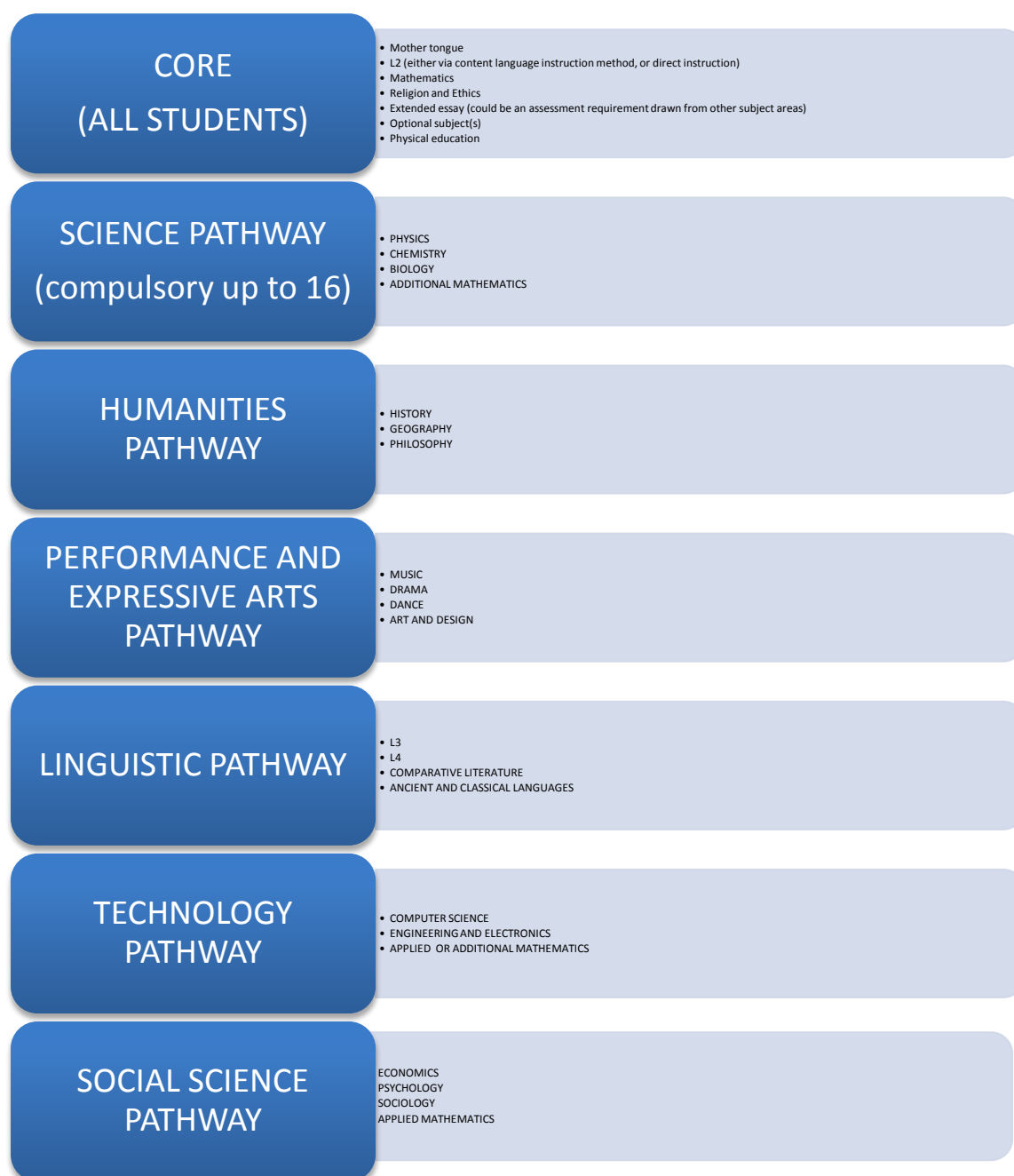
Moving forwards, it is possible to conceive of a series of educational pathways for students at the European Schools that allows a degree of semi-specialisation, promoting coherence of study and provision of subject teaching across all schools without sacrificing too much in the way of breadth. This can be combined with the requirement to take one or more optional subjects from a local list of offerings, which would allow students to complement, say, a primarily scientifically-orientated programme of study with a study of history or music or an additional language, for example, through what we might call an ‘optional course’. An approach such as this is likely to reduce existing coherence problems associated with subject choices at individual schools, as manifested in the yearly ‘clash tables’, and lead to a greater degree of predictability and parity across all European Schools, minimising local variations. In Figure 2 on page 75, therefore, we present our early conceptualisations of what such a pathway system might look like in practice. This is naturally open to discussion, and we anticipate healthy disagreement regarding the titles and contents of pathways, but we hope it gives an indication of a system that:

1. Offers coherence combined with the possibility of selection within a pathway to avoid overloading of timetables.
2. Would be easy to replicate across schools in almost all cases, leading to greater parity of provision.

3. Encourages breadth and flexibility through the provision of optional subjects, for example, allowing students to continue with some Science in addition to a strong focus on Arts or Humanities subjects, or vice versa.
4. Encourages independent study and/or interdisciplinary work (extended essay). This does not need to be taught as a separately timetabled subject, but can be seen as part of the final assessment process.
5. Offers scope for students to study on the core programme plus two pathways (one of which needs to be the Science pathway) up to the end of S5, dropping to the core programme plus one pathway during S6 and S7 (some within-pathway selection may be desirable in order to ensure a sensible workload for students).
6. Fits coherently with the expectations of university admissions officers in selective universities.
7. Introduces more sophisticated and appropriate provision for technological and technical subjects, in keeping with developments globally in terms of higher education and employment, and acknowledging the need for high quality technical and vocational education at school level within Europe.²

² Existing technical and vocational provision is very limited and dates from 1969. It includes: (Group 1) Geometric drawing, Notions of technology, Handicraft; (Group 2) Accounting and Commercial arithmetic, Typewriting, Shorthand and Commercial correspondence; (Group 3) Child care, Domestic science and Art. These represent short non-academic courses and while still permissible under the regulations, do not seem to be offered any longer in European Schools, leaving no vocational programmes at all.

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**Figure 2: Pathways**

In addition we need to give consideration to the pedagogical vision behind the current proposal, and most specifically the role that an intermediate certificate should play at the end of S4-5. The debate on the creation of such a ‘middle’ certificate at the end of S5 has been discussed by the Working Group on several occasions. We consider that a model for consideration could usefully be based on that developed by the UK Head Teachers’ Roundtable as an alternative to GCSE examinations taken at 16, which can be seen in considerable detail here:

<https://headteachersroundtable.files.wordpress.com/2013/05/the-headteachers-roundtable-qualifications-framework-proposal-final.pdf>

In summary, this is a system of holistic assessment that allows for the tracking of academic achievement at different stages in a school career, in combination with personal development, leading to the development of a portfolio-based profile. We believe that something similar to this would be very much in the spirit of the European Schools, which are comprehensive in intake and regard pupils as individuals. A particular advantage would be that it allows for flow in and out of European Schools, accommodating family mobility, and it presents a useful resource should students wish to transfer to, say, a further education college for a highly vocational education at 16, or return to their home country after a period abroad. It would be relatively straightforward to systematise portfolios across different language sections and types of European School, leading to improved consistency. The portfolio could then form the basis of the awarding of the European Baccalaureate, as academic attainment would already have been tracked as part of the reporting process.

5.3 Failure Rates

It is clear from examining failure and repeat rates that they vary greatly across different European Schools, and this is something we attribute to social and cultural factors rather than any intrinsic shortcomings on the part of particular groups of pupils. This is a particular issue in relation to S4/S5 and the sciences, and we have made some recommendations in this regard to smoothing the curriculum transitions from year to year, which lies at the root of many of the curriculum and assessment difficulties. This also applies to Mathematics.

In response to specific discussions that have taken place surrounding this, the Working Group has discussed the possibility of weighting the mark of different sciences courses, by evaluating the student from a general point of view (so failure of one course would not mean repeating the entire year, something which the literature indicates is generally harmful in educational terms). Similarly, another proposal has been to teach combined rather than separate sciences, but our position is that this should be discouraged on educational grounds where possible, and pupils encouraged to continue with separate sciences as far as possible. In addition it is clear that it would be difficult to find general science teachers at this level, which renders such a proposition largely unworkable. Such an approach seems to have been abandoned in the current proposals for S4 but it reappears for the years S6-7 (HUMSCI, GENSCI) and we would urge great caution here when revising the curriculum in this manner.

In addition we have the question of marking to consider. Evaluators have noted that some stakeholders, in particular INTERPARENTS, consider that the root of the problem is to be found in the system of notation, and therefore it is the system of notation that should be

changed; a vision that is examined in other sections of this report, in particular regarding the recommendations for evaluating sciences courses. A particular area of concern for us is the emphasis on mathematical ability during physics assessment, for example – this presents a form of ‘double jeopardy’ for keen Physics students who may not be the strongest of mathematicians, and are therefore effectively penalised twice. However we think an emphasis on the finer points of the notation system misses the main issue, which is that students develop in different ways at different times, and the curriculum needs to be designed in a way that can accommodate this without stigmatising students undergoing a difficult adolescence, a complicated relocation, or family problems, to name three typical situations. Our early model for possible pathways would only provide a partial solution. As we have argued throughout this report, significant complementary efforts should be made to address assessment related issues such as the introduction of a portfolio based system, pre- and in-service teacher training, pedagogical structures and systems, syllabuses, and so on. Similarly, the rationale for grouping PHY-BIO-CHI in a common course of 3 periods for S6-7, as well as the grouping of HIS-GEO, requires further examination regardless of the subject grouping method that is eventually adopted. We intend to go into this in more detail in the final report.

5.4 Options

Several tables are in existence highlighting subject ‘clashes’ and potential combinations in light of the current proposal (in particular the ones in the document 2013-D-01-78-Annexes; as well as the comparative clash table presented by the communication from INTERPARENTS).

Often the rationale for each set of eliminatory options from S4 onwards remains unspecified, and some of the timetabling choices that are being made have the effect of appearing relatively arbitrary to the outsider. In S4 for example the options are presented as follows: MUS or ICT, ART or MAT+, L4 or LAT, ECO or GRE. Some options are opposed to courses that correspond to the same ‘family’ of knowledge (for example LAT or L4), but other eliminatory choices cut short the capacity to explore divergent worlds (a good example being the need to choose between Music or ICT at the early age of S4, which effectively precludes the useful study of Music Technology). A new rationale based on competencies could support the idea of keeping together a strategic range of options. It is important to address this issue, as current satisfaction with existing subject choices is comparatively low:

BERGEN: 79.1%

EEBII: 81.4% (2014); 85.6% (2013)

EEBIII: 90%-80%

LUX1: 69% (2013-14); 71% (2014-15)

LUX2: 53.5% (2012-13); 55,1% (2013-14); 61,4% (2014-15)

MUNICH: 84% (2013-14); 77.9% (2014-15)

We hope that a sensibly conceived pathways model, along the lines of the model we have just proposed, will lead to a reduction in anxiety for students and their parents when trying to determine which courses are likely to be available to them at the European Schools, and reduce the complexity of the clash table, leading to greater student satisfaction.

5.5 Mathematics

The current proposal argues for a partial break of horizontal differentiation in S4 (with a common course + optional Mathematics+). From S5 onwards the proposal allows the possibility to keep horizontal differentiation with Math4 and Math6. This report has studied the issue in detail, and in particular the limits and potential benefits of keeping early horizontal differentiation. It should be noted that early horizontal differentiation is one of the main factors that explain the setting up of many courses with very small numbers of pupils (which are also taught in L1)³, and that this can be usefully rationalised without necessarily having detrimental consequences for the future careers of highly able mathematicians who plan to study this subject at university.

5.6 Potential Tools for Rationalisation

Group Sizing and Language

The language policy of the schools is based on a specific vision. In some cases, teaching in L1 or L2 could be a decision that should not be affected when discussing a process of rationalisation. Based on such a vision, some courses should remain in L1/L2 for civic and European reasons, while others - in particular options - could be rationalised and taught more generally in L2/L3/HCL. We would draw attention to our earlier comments on effective approaches to language teaching and learning in this regard, as we consider that there needs to be a much more carefully planned and consistent approach to how this is achieved within the European Schools, based on sound educational principles.

³ Note that the class size is more and more often discarded as an essential causality explaining better learning outcomes, see for example the PISA reports since 2009 ('What Makes a School Successful', 'School Factors Related to Quality and Equity').

Religion

Our proposal for a universal Religion and Ethics course would simplify provision dramatically and virtually eliminate the need for very small groups of pupils studying a single confessional religion in particular languages.

Decomposition of hours/periods

Hours are invariably used within existing timetabling documents as a proxy for the difficulty and status of a subject, which causes particular problems for advanced scientists and mathematicians who have very heavy timetables, whereas this need not be the case. Again, we refer readers to our earlier recommendations.

More (and systematic) use of vertical regrouping for L1, which we understand is already being implemented.

Finally, there is a need to extend the systematic use of vertical regrouping for L1.

Chapter Six: European Schools and Higher Education Access

University admissions presents an ongoing area of concern for parents of pupils at the European Schools, despite the fact that member states are legally obliged to accept EU Schools graduates on the same basis as those who have attended school in their home countries. As it states in Article 5 (2), holders of the Baccalaureate should:

1. Enjoy, in the member state of which they are nationals, all the benefits attaching to the possession of the diploma or certificate awarded at the end of secondary school education in that country; and
2. Be entitled to seek admission to any university in the territory of any member state on the same terms as nationals of that member state with equivalent qualifications

Despite the clear statutory position of the European Baccalaureate in this regard, and consistent efforts centrally to make sure Article 5 (2) is adhered to by members states as well as individual institutions, there appear to be three areas of concern consistently raised by parents during the course of our enquiries:

1. Elite university admissions;
2. Admissions to highly competitive courses such as medicine;
3. Whether the European Baccalaureate is properly understood by university admissions officers.

Each of these areas of concern will be discussed in the next section.

6.1 Elite University Admissions

Approximately 50% of European School graduates attend university in the United Kingdom, particularly those who have been members of an English language section, and many of these students attend Russell Group (top international research) universities, including the elite universities of Oxford and Cambridge. In view of the dominance of applications to UK institutions, we have been in communication with Mr Jon Beard, Head of the Cambridge Admissions Office at the University of Cambridge, to establish a more detailed picture of the admissions process in his university, and we expect the situation to be more or less mirrored at Oxford.

Mr Beard reports that in the academic year 2013-2014, Cambridge University received 98 applications from 14 schools offering the European Baccalaureate (the University only makes a distinction on the basis of qualification rather than whether a candidate has attended a Type 1 or Type 2 European School, for example.) Candidates applied to 22 of the standard age

colleges, and to 18 of Cambridge's 25 undergraduate courses. Given the number of applicants this was considered by the University to be a good spread; the only feature of note is that one third applied to study Natural Sciences and Engineering. Cambridge admitted 16 of those students, or 16.3%. Though this is lower than the overall success rate for students applying to the University (c. 22%), it is reported as being higher than the success rate for students not at UK schools (c. 13%). Successful applicants are typically asked for 85-90 per cent overall, with 90 per cent in subjects most closely related to the course they wish to study. This would suggest that candidates from European Schools during the academic year 2013-2014 were being accepted at roughly the rate that might be expected, given the spread of nationalities and backgrounds, and that the percentage being requested was reasonable in terms of discriminating amongst pupils to find those most suited to an elite university education (roughly equivalent to A*AA and A*A*A for the Natural Sciences in terms of UK Advanced Level examinations). However there may be merit in continuing to track this with reference to how long individual pupils had spent in a) the British education system, b) the European Schools system, and c) other systems within Europe and internationally, to ascertain whether there is any relationship between the length of time in any particular system, transfers in or out of systems at particular times, and successful applications to elite universities in the UK.

Broader destination data is not kept centrally by the European Schools in this degree of detail, but we have been able to find good destination data from Mr John Little in relation to ex-students of Culham School. During the period 2009-2013, 256 students from this school went on to further and higher education. 83% of these students enrolled in UK institutions, and of this group, 62% achieved places at Russell Group universities including Oxford and Cambridge. This represents roughly three times as many successful Russell Group applicants as would be normally expected from the general applicant population. Outside the UK, 8 Culham students were accepted by the elite Sciences-Po in France during this period, and two at MIT and Berkeley in the USA. If Culham is typical of the European Schools, and we have no reason to believe that it is not, then there would not seem to be a particular problem with access to elite higher education institutions for European Schools graduates.

6.2 Admissions to Highly Competitive Courses

Anecdotal accounts imply that some parents perceive problems when students are applying to highly competitive university courses. We could not find evidence to support or refute this. However we note that, working again from the Culham data, two students successfully applied to study Medicine in Munich and Prague. Culham students have also recently accessed 29 universities in mainland Europe as well as Trinity College Dublin in Ireland, and outside Europe, have been successful in gaining admission to Dunedin in New Zealand, and US universities including Berkeley California, and MIT. Again, if Culham is seen as typical

for the European Schools in this regard, it would seem as though parents have no grounds for concern.

6.3 Admissions Officers and the European Baccalaureate

In the UK, which is the destination for approximately half of the European Schools graduates as stated above, explicit guidance has been given to university admissions officers in order to ensure a full understanding of the European Baccalaureate qualification (Department for Education, 2013). Within this document, the qualification is described as ‘demanding’ and it is made clear that candidates are expected to perform well across a range of subjects. It should be noted that, as part of the UK university entry process, candidates are required to complete a centralized Universities and Colleges Admissions Service application form, known as the ‘UCAS’ form. It is made clear in the Department for Education (DfE) guidance document that on this form, candidates may give their Year 6 results, with some additional Year 5 results if this is felt to be appropriate. The document states clearly that around half of European School applicants to UK universities are likely to be non-British or Irish nationals and many will therefore not have studied English as their mother tongue, but that further proof of proficiency in English should not be required. Typical offers to candidates have included specifying an overall European Baccalaureate score (as a percentage), or specifying an overall European Baccalaureate score (%) combined with marks out of 10 in specific subjects. In addition to this, institutions are given specific guidance on making offers with respect to four points:

1. Offers asking only for a final EB score are seen as most suitable for subjects requiring a broad education, with evidence of attainment across a wide curriculum.
2. For degree courses not requiring any specific subject knowledge on entry, the DfE advises that breadth of the EB should be seen as an advantage.
3. For courses prescribing certain A level subjects, institutions may wish to specify the marks to be attained in particular subjects.
4. It would be very unusual to specify marks in more than three subjects, even for the most competitive courses.

(Department for Education, 2013: 16)

This document has been widely circulated amongst UK university admissions officers and from our informal enquiries, there appears to be good recognition of the qualification overall.

We have been unable to find the existence of similar documents outside the UK, but we would hope that as this document is in the public domain, and freely available on the internet, it would provide a useful guide to institutions in other countries when seeking to determine the appropriate levels of European Baccalaureate scores in relation to particular courses.

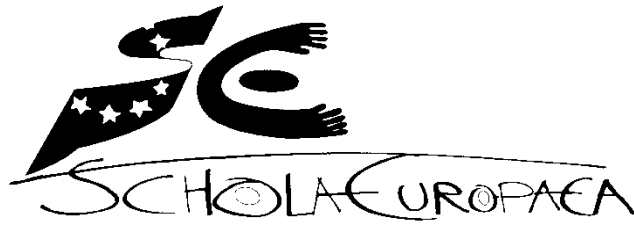
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Feedback du GT 'Suivi des rapports' envoyé à
l'équipe d'évaluateurs le 16 février 2015



Schola Europaea

Office of the Secretary-General

Ref.: 2015-02-D-26-en-1

‘Follow-up on the External Evaluation Reports’ Working Group

Feedback to the External Evaluators’ Interim Report

Brussels, the 16th February 2015

FEEDBACK FROM THE OFFICE OF THE SECRETARY-GENERAL OF THE EUROPEAN SCHOOLS ON THE EXTERNAL EVALUATION INTERIM REPORT REGARDING PROCUREMENT PROCEDURE 'BSGEE/201401 PROPOSAL FOR REORGANISATION OF SECONDARY STUDIES IN THE EUROPEAN SCHOOLS FOR SECONDARY YEARS 4, 5, 6 AND 7'

The Working Group (WG) mandated by the Board of Governors to scrutinise the interim report and to assist the Office of the Secretary-General in providing the evaluators with feedback on the interim report met on 4 and 16 February 2015.

The following feedback is based on the discussions held at the meetings of:

1. the Working Group charged with follow-up on the External Evaluation Reports, on 4 February 2015;
2. the Joint Board of Inspectors, on 11 February 2015;
3. the Joint Teaching Committee, on 12 February 2015;
4. the Working Group charged with follow-up on the External Evaluation Reports, on 16 February 2015.

The WG welcomes the interim report, which was expected *"to present the preliminary results of the analysis, in particular the assessment of the proposed reorganisation of studies compared to the current situation and possible alternative options to be considered."* (page 8 of the specifications).

The report seems to show some resistance to responding to what is fundamentally requested: *a comparison between the current situation and the proposed reorganisation, accompanied by recommendations.*

That request was reiterated in the feedback to the inception report.

The WG notes that several aspects of the proposed reorganisation are already explicitly evaluated in the interim report.

At the same time, the WG notices on page 9 that *"a comprehensive and complete response to the document produced by INTERPARENTS is forthcoming and will form a supplement to this report."* The WG notes that to date, it has not yet received such a supplement.

Broadly speaking, the report seems to be lacking in attention to the principles defined in Article 5 of the Convention¹.

¹ **Article 5 of the Convention defining the Statute of the European Schools**

1. Years of study successfully completed at the School and diplomas and certificates in respect thereof shall be recognized in the territory of the Member States, in accordance with a table of equivalence, under conditions determined by the Board of Governors as laid down in Article 11 and subject to the agreement of the competent national authorities.

2. The European baccalaureate, which is the subject of the Agreement of 11 April 1984 amending the Annex to the Statute of the European School laying down the regulations for the European baccalaureate, hereafter referred to as the 'European baccalaureate Agreement', shall be awarded upon completion of the cycle of secondary studies. The Board of Governors, acting by a unanimous vote of the Member State representatives, shall be able to make any adaptations to that Agreement which may prove necessary.

Holders of the European baccalaureate obtained at the School shall:

(a) enjoy, in the Member State of which they are nationals, all the benefits attaching to the possession of the diploma or certificate awarded at the end of secondary school education in that country;

(b) be entitled to seek admission to any university in the territory of any Member State on the same terms as nationals of that Member State with equivalent qualifications.

For the purposes of this Convention, the word 'university' applies to:

(a) universities;

(b) institutions regarded as of university standing by the Member State in whose territory they are situated.

The WG would therefore remind the evaluators that the tasks which the study is expected to perform, as specified in the call for tenders (on pages 5 and 6 of the specifications), and the outcomes thereof are as follow:

“Task 1: Description of the alternative options

The study will need to start from a clear understanding and explanation of the proposed reorganisation as well as the current situation (status quo).

All studies undertaken and propositions formulated during the work of the Working Group, also by the stakeholders, will be made available too.

Task 2: Criteria to be used in evaluating the proposal

Task 2 involves an identification of the different evaluation criteria that are relevant. Effects on pupil's education, compared to the current situation, should be identified: how it is affected and when.

In assessing the proposal, the Contractor should consider (but is by no means restricted to) the following:

- *impacts in relation to the access to national secondary and higher education systems in Member States;*
- *impact on student mobility to and from the European Schools and the national education systems;*
- *feasibility of options and combinations offered (i.e. whether and under what circumstances, courses and course combinations will be offered across the system), also taking into account past students' choices;*
- *impact on specific groups, such as students without a language section, students with special education needs, students from countries with more than one national language and small language sections;*

Task 3: Assessment of the alternative options

Task 3 involves assessing the impact of the different evaluation criteria used to evaluate the proposal and the "status quo", and will form the main part of the contract. The evaluation of different alternatives including the "status quo" (business as usual), should be presented in terms of their characteristics and of the results that they would produce.

The Contractor should provide a general outline of the content of the programmes of the newly created courses/subjects, foreseen in the proposed new organization of the secondary cycle studies.

The study should also consider the risks and uncertainties in each alternative.

After identifying the impacts, the study should also determine the extent to which the proposal considered meets the objectives of the reorganisation. This should allow for a presentation of the pros and cons of the different options, based on collected evidence and assessment of impacts.

Task 4: Recommendations

Based on the findings from tasks 1 to 3, the Contractor will make recommendations on the proposal of the secondary school curriculum and its content (as needed), together with an implementation plan.”

The interim report appears not to provide a real response to the fundamental missions and tasks mentioned in the specifications.

The opportunity to engage in exchanges with the external evaluators was, however, welcomed.

The WG understands from the explanations given by the external evaluators at the JTC meeting that it is difficult at this stage to provide the requested comparison in the interim report and that the evaluators will return to this point in their final report. Nevertheless, the WG reserves the right to propose the following steps to the Secretary-General:

- ✓ to request the external evaluators to provide further explanations,
- ✓ to request an amended report,
- ✓ or even to refuse the report, should the final report not be satisfactory.

The WG also notes that any recommendation or alternative solution proposed by the external evaluators should take into consideration the practical constraints on the organisation of a European School.

As foreseen in the specifications, the WG would be willing to convene a second meeting. The WG leaves it to the team of evaluators to propose a date and also the timeframe for this meeting: as soon as possible, in a few weeks' time, but in any event, well before the final report is delivered. The Chair of the WG will contact you in that connection.

Brussels, 16 February 2015

'Follow-up on the External Evaluation Reports' Working Group

INTERPARENTS response and guidance to the IOE Evaluators following delivery of their October 2014 'Inception Report'

External Evaluation of
Proposals for Reorganising European School Secondary Studies S4-7
***INTERPARENTS response and guidance to the IOE Evaluators
following delivery of their October 2014 ‘Inception Report’***

Introduction

This document has been prepared by INTERPARENTS, the official representative of parents, through the fourteen Parent Associations of the European School system.

INTERPARENTS has longstanding familiarity with the secondary studies programme and various possibilities and proposals for its reorganisation. Its members are key stakeholders with a unique perspective gained through daily exposure to the reality and consequences of the system’s structures, practices and policies. This experience informs parent participation in the governance of the European Schools at all levels right up to the Board of Governors.

INTERPARENTS sends this document as follow-up to the guidance given by the Steering Group to the IOE evaluators, documented in 2014-10-D-33-en-1. The Steering Group reiterated its specific requirements of the interim and final report “deliverables”, which had only been partially met by the inception report. Particular attention was drawn to the “assessment of the proposed reorganisation of studies compared to the current situation and possible alternative options to be considered.” (Specification 2.2.3)

In this document INTERPARENTS provides information, data and insights which we believe will be helpful to such as assessment. Specifically, this document aims to share detailed and practical information for **Task 1 (Description of the alternative option)**:

“The study [should] start from a clear understanding and explanation of the proposed reorganisation as well as the current situation [additionally taking into account] all studies undertaken and propositions formulated during the work of the Working Group, also by the stakeholders...”

by providing a detailed description of (i) the baseline (current) situation, (ii) the proposal being assessed and (iii) the alternative proposal for S6 and S7 developed by INTERPARENTS.¹ In the course of the discussion, INTERPARENTS also hopes to clarify some of the defining characteristics of the European School system as well as a few of its inherent contradictions that we felt might have been passed over or misunderstood in the Inception Report.

INTERPARENTS fully expects and encourages IOE to consider and elaborate other alternatives, which might:

- reflect a broader and deeper view of the challenges faced by the European Schools,
- take into account the critical success factors for a modern secondary studies programme (a non-exhaustive list of which was itemised in the Objectives section of the Specifications document and in the description of **Task 2**),
- be informed by the professional expertise and research-based insights which the IOE team brings to the project.

¹ Here we would note that the INTERPARENTS proposal was developed in response to the proposal from the Working Group and suggests a somewhat different approach to the perceived problems in upper secondary. It was devised in “good faith” and in a spirit of constructive engagement with the project as a way of demonstrating that, even with *limited reworking* of the proposal, some of the shortcomings noted by parents and other stakeholders could be eliminated while still combining “rationalisation with flexibility.”

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APPENDIX: 'Clash Table'

1. Presentation of the Current Situation (Baseline)

The current structure of European school system is based on Article 3 of the Convention defining the Statute of the European Schools that establishes the basic principles of the structure of the European Schools: 2 years of nursery, 5 years of primary and 7 years of secondary.²

1.1. Nursery and Primary

In nursery and primary pupils are taught almost exclusively in their dominant language³ (L1). When no dominant language section is available, the pupils are considered to be “Students Without A Language Section” (SWALS) and are enrolled in a vehicular language (VL, i.e. EN, FR, DE) section, generally of the family’s choosing.⁴ Such pupils continue to learn their dominant language for several periods a week as part of the SWALS programme.

The first “foreign”⁵ language (L2) is introduced in first primary. Starting in nursery or primary, eligible nationals are also given the right to learn an “Other National Language” (ONL, e.g. Maltese, Irish, Swedish, Finnish) over and above their first foreign language. For SWALS pupils, their dominant language on entry is considered their L1, while the language of their linguistic section is treated as their second language (L2).⁶

There is an ongoing discussion at the individual school level (e.g. in the Education Councils) and at the system level about how to ensure language skills are sufficient for pupils transitioning from primary to secondary.⁷ It should likewise be remembered that there is often a significant influx of students into the individual schools in the first year (or even in the higher levels) of secondary, which means that pupils entering the European School secondary cycle are marked by wide variation in language competence and learning support needs.

² Article 3

1. The instruction given in each School shall cover the course of studies up to the end of secondary school. It may comprise:

- *a nursery school;*
- *five years of primary school;*
- *seven years of secondary school.*

Technical education requirements shall as far as possible be covered by the Schools in cooperation with the education system of the host country.

³ The classification “dominant language” replaced that of “mother tongue” in recognition that an increasing proportion of students are fluent (or at least conversant) in two or more languages on entry into the school. Testing of children is routinely used to determine an individual’s dominant language and facilitate allocation to a linguistic section.

⁴ Note, Category III students are never considered SWALS; these students must enrol in one of the existing sections.

⁵ Just as “mother tongue” has been replaced by “dominant language” so too L2 denotes a second language which may or may not be “foreign” to the child. Some children enter the school - even in Secondary - with no previous experience of their chosen L2 (which can only be English, French or German). At the other extreme, a child’s official L2 may in fact be their “mother-tongue” or a language spoken at home.

⁶ This becomes important in Secondary when SWALS begin a formal L1 course in their dominant language and join, rather belatedly, the L2 classes for their vehicular language. The SWALS, many of whom have been taught their L2 through immersion since nursery with extensive learning support, generally have very developed skills in their vehicular language by this point.

⁷ The curriculum for second language in primary was approved by the Joint Teaching Committee in October 2012 (document 2012-08-D-13-en-2A; http://www.eursec.org/fichiers/contenu_fichiers1/1904/2012-08-D-13-en-2.pdf). The call to ensure adequate L2 skills for primary 5 pupils entering secondary was emphasised in a large, multi-school parent petition delivered to the Board of Governors in December 2013.

1.2. Secondary

The organisation of the secondary studies was the object of a broad reform in April 1990.⁸ Additional reforms to S1-S3, originally introduced as part of the current proposal for the reorganisation of secondary studies, were implemented starting from September 2014.⁹

Broadly it is worth noting:

- The school day is divided into periods of 45 minutes separated (at minimum) by a break of 5 minutes. The figures presented in the various tables below are the number of 45-minute periods dedicated to each course per week.
- The curricula for the three cycles in secondary comprise, in differing proportions:
 - **core (compulsory) subjects** which are run irrespective of the number of students; non-viable group sizes are managed by grouping students across several levels (so-called “vertical grouping”) or across languages (“horizontal grouping”); if this is not possible teaching hours are reduced according to the following table:

Number of periods/week timetabled	Number of periods to be organised
5 or 6	4
4	3
3	2
2	1 (Religion and Ethics)

A group is not considered viable if it has less than seven pupils for S1 to S5 and less than five for S6 and S7.¹⁰

- **optional courses** which run in a language only if there are a sufficient number of students selecting the option; for optional courses, students are often given the choice to take the course in a vehicular language, if it is offered.¹¹

In exceptional circumstances derogations to these rules may be granted. More detail is given at various points below to illustrate how these rules are applied throughout the three secondary cycles.

1.2.1. Language of Instruction

The number of courses using a student’s “non-dominant” language (i.e. not L1) as the language of instruction increases as the student progresses into secondary. In particular, by the end of the first cycle of secondary and into the second cycle there is a marked increase in the number of courses taught in L2; in the second cycle, options are also added, which likewise increases the chance of students (particularly in smaller language section) taking courses in their L2 or other vehicular

⁸ ARBG, 24 -25 April 1990, pp. 1-5.

⁹ Decisions of the Board of Governors, 3-5 December 2013, p. 7, endorsing proposal 1.1, document 2013-09-D-17-fr-4.

¹⁰ The rules governing when such classes can be created, and with what composition, are set out in a document 33 (2011-01-D-33-en-9), which was recently updated to reflect changes made to S1-S3. The size of groups is also regulated at a higher level through restrictions on the creation and continuity of sections. Section viability is controlled by application of the so-called “Gaignage criteria” (*Critères pour la création, la fermeture ou le maintien des Ecole européennes*; 2000-D-7510):

¹¹ For this reason, as noted in the Inception Report, in practice the available combinations of course options and languages of instruction may be much more limited than they appear on paper. (p. 52)

language. The progression is meant to follow students' linguistic development, i.e. by S3 students are believed to be equipped with the skills to learn academic subjects in their L2.

In the current structure, students have some degree of personal choice over how much of their secondary education they undertake in their L2 or other languages. However, in most instances they are only able to exercise this control by confining their choice of subject options according to the specified language of instruction. This situation may favour multilingual students, but it can have strong disadvantages for students who are not linguistically able/advanced due to learning difficulties or late entry into the system—quite common given the mobility of the target population between countries and systems of education.¹² There is also a wide range of experiences depending on the size/viability of the language section to which one belongs, with students in smaller sections more often compelled to take courses in vehicular languages.

1.2.2. Current Organisation of Studies in S1-S3¹³

The lower cycle of the secondary programme is organised along the following lines.

Subject	Year 1	Year 2	Year 3
Dominant language (L1)	5	5	4
Mathematics	4	4	4
L2	5	4	4
L3	2	3	3
Physical Education	3	3	3
Religion/Ethics	2	2	2
Human Sciences	3	3	3
Integrated Science	4	4	4
Latin (optional)		2 (optional)	2 (optional)
Art	2	2	2
Music	2	2	2
ICT	1	1	2 (optional)
Total	33	33 or 35	31 or 33

¹²The Inception Report states that the “plurality” and vision of “equality of esteem” of languages and cultures characterising the European Schools’ approach is one of its “main strengths” and something “unique” which sets them apart from international schools. It is important to realise moreover, that education in the child’s mother-tongue (or dominant language) is essential to serve the European Schools’ mobile population who will need, at some point in their educational careers, to transition into a national secondary or tertiary education system. This is primarily true of the children of EU Institution staff, whose existence drives the system and the majority of the funding, but it is also the case for the wider mobile workforce whose children attend the European schools and many of those who have chosen one of the growing number of national schools which have gained accredited status precisely because they want to access this unique education for their children, the success of which drives opening up of the system.

¹³ The Board of Governors decision of December 2013, which mandated that the proposals for reorganising S4 to S7 studies be submitted for external evaluation, was not extended across the whole Secondary cycle. Consequently, a package of changes to the S1-3 programme came into force in September 2014, predominantly increasing the foreign language component of the programme. Decisions of the Board of Governors, 3-5 December 2013, p. 7 endorsing proposal 1.1, document 2013-09-D-17-fr-4.

The timetable ranges between 31 and 35 periods per week for these years.¹⁴

In S1, a second foreign language (L3) is introduced (it previously started in S2). Students are required to take their second foreign language through to S5, after which it becomes an option.¹⁵ Some subjects (Physical Education, Music, ICT and Art) are taught in a working language (WL, one of the three vehicular languages or the HCL, host country language).¹⁶ The practice of teaching these courses in a working language continues throughout the whole of the secondary cycle.

In S2, the timetable remains unchanged in its main features. L2 is decreased by 1 period and L3 increased by the same amount. Students are also given (since September 2014) the option to take 2 periods of Latin. Currently, Latin can be taken as an option through to the Baccalaureate, though many students stop after S3 or S5.

Beginning in S3, Human Sciences and (since September 2014) Religion/Ethics are taught in L2, with some exceptions. The L1 course is decreased by one period to 4 periods. In S3, ICT becomes a 2-period option; students may choose either Latin or ICT but not both. Currently, ICT can be taken as an option through S5 and as a complementary (non-Baccalaureate subject thereafter).

As options, Latin is not guaranteed in S2 or S3 nor ICT in S3; both are offered only when 7 students from a given language section request the course. If a group is not created, students may be given the choice to take the option in a vehicular language, subject to availability. Religion and ethics are also treated as options in relation to whether particular classes are sufficiently popular to be created but have exceptional rules controlling the creation of groups.¹⁷

In S1 through S3, eligible nationals may continue to take an ONL for 2 periods a week; Greek students are introduced to Ancient Greek for 2 periods a week. SWALS students are enrolled in their dominant language as L1 and the vehicular language as L2. They take all other classes in their vehicular language; this sets them apart from other students.

¹⁴ Note that recent reform has redistributed the periods. In S1, there has been an increase in the number of periods—from 32 to 33; in S2 there has been an increase in the *maximum* number of periods—from 34 to 35; and in S3 there has been a decrease in the *maximum* number of periods—from 35 to 33.

¹⁵ L3 is nevertheless one of the most common Baccalaureate options. See for instance, 2013-01-D-78-en-3-Annexes.

¹⁶ Students of different language sections are mixed in working language courses. As a rule of thumb, the working language is generally the L1 or L2 of all students in the class, though this is not always the case. In practice, this means that working language courses are more mixed and more flexible in relation to language than courses taught in L2. They provide an opportunity to mix native speakers with learners of a language. A working language is generally used for non-core and less strictly academic subjects, in which the language of instruction is deemed of secondary importance.

¹⁷ Digest of decisions of the Board of Governors, page 145. See also, document 2011-01-D-33-en-9.

1.2.3. Current Organisation of Studies in S4-S5¹⁸

S4 and S5 fall within the scope of this evaluation and should therefore be examined in more detail. The structure and organisation of studies in the S4 and S5 were approved by the Board of Governors on 18 and 19 December 1979.¹⁹

Each student must take 31 to 35 periods per week²⁰: 27 to 29 periods of core subjects, common to all students, plus 2 to 8 option periods. For the latter, students have to choose from seven subjects. Additionally, eligible nationals may take ONL and Ancient Greek. The same timetable applies in both S4 and S5.

Subject	Number of periods	Language (as a rule)
CORE SUBJECTS		
L1	4	L1
Mathematics	4 or 6	L1
L2	3	L2
L3	3	L3
Physical Education	2	WL (VL/HCL)
Religion/Ethics	1	L2
History	2	L2
Geography	2	L2
Biology	2	L1
Chemistry	2	L1
Physics	2	L1
Total	27 or 29	
OPTIONS		
Economics	4	L2
L4	4	L4
Latin	4	L1
Greek / Ancient Greek	4 (2)	L1
Music	2	WL (VL/HCL)
Art	2	WL (VL/HCL)
ICT	2	WL (VL/HCL)

Beginning in S4, L2 is reduced by one period to 3 periods per week. Physical Education is also reduced from 3 to 2 periods and Religion/Ethics from 2 periods to 1 period (still taught in L2). 3 periods of Human Science is replaced with separate History and Geography courses (also taught

¹⁸ ARBG I, 18-19 December 1979, pp. 41-43.

¹⁹ ARBG I, 18-19 December 1979, pp. 41-42. For updated information, please consult the latest version of document 2007-D-4010-en, 'General Rules of the European Schools', approved by the Board of Governors of the European Schools at its meetings of 21, 22 and 23 October 2008 (new reference number: 2011-04-D-11-en-1).

²⁰ Students are allowed, with the approval of the directorate, to have more than 35 periods per week if they wish to attend other existing courses which can be combined with their personal timetable.

in L2) of 2 periods each. 4 periods of Integrated Science is replaced with Biology, Chemistry and Physics of 2 periods each. Latin, L4, Economics and Greek are introduced as 4-period options (with Economics taught in L2 and Latin/Greek in L1), while Music, Art and ICT are introduced as 2-period options (still taught in a working language).

1.2.3.1. Creation of Courses²¹

As noted above, courses in compulsory subjects are always created, though in some cases students may be vertically or horizontally grouped or course hours reduced. Courses in option subjects are created only when seven students chose them. Where necessary, students who have chosen courses which might not be created are invited to choose a subject corresponding to the courses created. Students who have not taken an option in S4 and/or in S5 but wish to take it in S6 and S7 are required to pass an examination before going into S6. The examination covers the necessary prerequisites to keep up successfully with the desired course in S6 and S7. Generally though, a subject lost at S4 is lost as a future option. It should be noted that all courses also depend on the successful secondment (or increasingly, local recruitment) of a suitably qualified subject teacher.

1.2.3.2. Mathematics

Currently, in S4 students choose between a 4-period and 6-period advanced course in mathematics. If students find the 6-period course too difficult, it is possible to drop it for the 4-period course during the first semester (upon approval of the Director and the Class Council). There is another opportunity to move to the basic course during the transition to S5 (again with the approval of the Director and the Class Council). The only additional provision is that when dropping the 6-period course, the minimum number of periods must not fall below 31. This possibility encourages students to try the advanced mathematics without locking them into this choice.

1.2.4 Promotion

The rules of promotion in secondary were modified in 2013.²² The reform of the promotion has drastically reduced the overall retention rate, which dropped from 2.2% in 2012 to 1.2% in 2013 though rebounded to 1.7% in 2014.²³ The new rules grant more discretionary power to the year-end Educational Council to decide whether a student may or not be promoted to the next year group.²⁴

²¹ Digest of decisions of the Board of Governors, p. 143. See also, 2011-01-D-33-en-9.

²² Article 61 of the General Rules was modified by 2013-01-D-47-en-1.

²³ 2014-09-D-44-en-1.

²⁴ Rules can be found in Article 61 of the General Rules of the European Schools.

1.2.5. Leaving the System Early

The reasons for leaving the system are difficult to identify and to quantify, as most students leave without consulting or informing the schools.²⁵ The system counts the children who fail to pass the year but not those who are not fulfilling their academic potential. The European School population is mobile by nature so a certain amount of flow into and out of the system is expected through the full cycle. It is often hard to determine whether students are leaving due to relocation, because of the high academic level, or more because families are seeking more appropriate options.²⁶ It is nevertheless clear that the European Schools fail to serve a certain group of less academic students and that for these there is often no obvious alternative. There is an ongoing debate as to how best to serve these children who have full right to European schooling but do not have the skill set or inclination to follow the programme.

1.2.5.1. Shorter Leaving Courses

In 1969, the Board of Governors decided to introduce a shorter leaving course for S4 and S5.²⁷ *No School has run a shorter leaving course class since 1986.* Nevertheless, the structure has not been abolished.²⁸

	Periods (courses common to all students)²⁹	Periods (courses for students taking only the shorter course)
L1	4	1
L2	3	-
L2+	3	-
History	-	2
Geography (in WL)	1.5	-
Economic geography (in WL)	-	1
Mathematics		3
Science		2
Physical education	2	-
Music	1	-
Options*	-	6
Religion/Ethics	1	
Total	15 ½ periods	15 periods

²⁵ Several Parent Associations have attempted ad hoc surveys of leavers and INTERPARENTS and its member associations have contacts among families who have withdrawn their children who may provide anecdotal information about their reasons for leaving.

²⁶ In fact, these patterns are often cultural, e.g. some British consider boarding school in the UK a viable (though possibly prohibitively costly and family-unfriendly) alternative to European schooling.

²⁷ ARBG, 12-13 May 1969, pp. 34-37; ARBG, 2 -3 December 1969, pp. 29-30; ARBG, 13-14 May 1971, pp. 50 and 63; and ARBG, 7-8 December 1971, p. 38.

²⁸ 2014-02-D-14-en-2-pdf, p. 111.

²⁹ The periods and offerings in this column vary from today's S4 and S5 timetable. For example, music and geography are currently 2-period courses and intensive L2 is no longer offered.

As regards the options, students may choose between the following groups:

Group 1		Group 2		Group 3	
Geometric drawing	2	Accounting + commercial arithmetic	2.5	Child care	2
Notions of technology	2	Typewriting	2	Domestic science	2
Handicraft	2	Shorthand	2	Art	2
		Commercial correspondence	1		
Total	6	Total	7.5	Total	6

Students may not pick subjects from different groups.³⁰

It is important to underline that this is indeed a proper short leaving certificate, certifying an achieved level of studies that could eventually be recognised by member states.

1.2.5.2. Leaving Certificates

The possibility of a leaving certificate at the end of S7 and/or certification at the end of S5, has already been debated in the Board of Governors and its committees, but with conclusions drawn being unsatisfactory.³¹ Any leaving certificate introduced should NOT have the status of a certificate of failure, but rather should represent certification of the level of attainment. Clearly, such certification needs in-depth discussion, including with the Member States, in order to ensure that it has useful practical application within the framework of the European School system and in relation to its Baccalaureate.

In 2008, the Board of Governors already endorsed the following:³²

- It is not possible to create any form of alternative certification to the Baccalaureate at the end of year 7.
- However, the Directors will be required to issue a school report showing the marks awarded, plus a description of the school career and the competences acquired (a record of achievement), to all students who have failed the Baccalaureate but who wish to continue their studies in certain national systems by moving into alternative forms of education, e.g. vocational training.
- A centralised examination, in three compulsory subjects—Language 1, Language 2 and Mathematics, to start with—will be organised at the end of year 5. Its main objectives are as follows:
 - to guarantee that students in all the European Schools are assessed on the same basis in three main subjects,
 - to serve as a criterion for standard of attainment (competences and knowledge) at the end of the fifth year of secondary education.

The objective of such a harmonised exam, if not to lead to a certification recognised by member states, remains unclear.

³⁰ If the organisation of courses so permits, students may choose a subject from another group as an optional extra.

³¹ See, for instance, document 2013-05-D-34, *Harmonised assessment at the end of year 5 and written examinations leading to B marks in year 5*.

³² Decisions of the Board of Governors, 22-23 January 2008, p. 2.

1.2.6. Current Organisation of Studies in S6-S7

The proposals introduced for the reorganisation of the upper secondary cycle (S6-7) were the most far reaching and have thus been the most divisive. These were also the most deeply analysed by the working group, parents and other stakeholders.

Currently, each student must take 31 to 35 periods per week: at least 29 periods must be covered by core subjects and options.³³

Current Organisation of Studies in S6-S7

Core Subjects			Options				Complementary Subject
<i>Column 1/periods</i>	<i>Column 2</i>	<i>Column 3</i>	<i>Column 4</i>	<i>Column 5</i>			
L1 4	Biology 2	Latin 4	Advanced L1 3	Lab-Physics 2 Lab-Chem 2 Lab-Bio 2 Computing 2 Elementary Econ 2 Sociology 2 Art 2 Music 2 Sport 2			
L2 3	History 2	Greek 4	Advanced L2 3				
Mathematics 3 / 5	Geography 2	Philosophy 4	Advanced Maths 3				
Rel. / Ethics 1	Philosophy 2	L3 4					
Physical Ed. 2		L4 4					
		History 4					
		Geography 4					
		Economics 4					
		Physics 4					
		Chemistry 4					
		Biology 4					
		Art 4					
		Music 4					
Total: 13-15 p.	Total 0-8 p						
	These courses must be taken if not chosen in col. 3. Bio. is compulsory unless Physics , Chem. or Bio. is chosen in col. 3.		Adv. Maths only with 5-period Maths in col. 1.	Art, Music and Economics not allowed if taken in col. 3.			

The current structure is organised along the following lines:

- Core subjects must be offered.
- Options and complementary subjects may be offered if there are enough students in a section or school interested. (The minimum number of students required to create a course at this level is five).
- Some subjects are offered at both basic (2 periods, 3 for mathematics) and advanced levels

³³ A Student can ask for a derogation and get a timetable of 36 periods. This is particularly useful for scientific-oriented students as it allows to combine Physics, Chemistry, Biology 4 with Advanced Maths.

(4 periods, 5 for mathematics). These include: Mathematics, Biology, History, Geography and Philosophy.

- Physics and Chemistry are offered only in 4 periods (no 2-period option is offered).
- It is compulsory to choose History, Geography and Philosophy, either at a basic or a superior level.
- It is compulsory to choose at least one Scientific Subject, i.e. Biology, Physics or Chemistry.

The possible choices are restricted by the Baccalaureate written and oral exam rules.

1.2.6. Baccalaureate Examination³⁴

Studies in S6 and S7 are intended to lead to the Baccalaureate examination. As explained, the rules of the Baccalaureate influence the possible options available to students. The Baccalaureate exam is composed of eight exams: five written and three oral.³⁵

Written Exams	Oral Exams
Language 1 Basic course	Language 1 (Basic or Advanced)
Language 2 Basic course	Language 2, Geography or History
Mathematics 3 or 5 periods	Advanced Maths, compulsory if chosen Language 3, Language 4 or ONL or Biology or Chemistry or Physics
4-period option	
4-period option	

The Baccalaureate mark is calculated according to the following:

A1 mark across all subjects (first semester):	10%
A2 mark across all subjects (second semester):	10%
B mark (Pre-Bac examinations):	30%
Written exams:	35% (7% each)
Oral exams:	15% (5% each)

The minimum overall mark to pass the Baccalaureate is 60%.³⁶

³⁴ Regulations for the European Baccalaureate, 2014-11-D-11-en-1. New rules apply for the Baccalaureate in 2015, see document 2014-11-D-11-en-1. Rules foreseen in point 6.6.1.2 of the Arrangements for implementing the Regulations for the European Baccalaureate (document 2014-12-D-6-en-1) will also apply.

³⁵ It should be noted, however, that the Chair of the Baccalaureate in 2014 proposed in his written report to reduce the number of oral exams to two and to increase the number of written exams to six he believes that an oral exam is not the best type of exam for Maths or Sciences, but should be limited to subjects for which language skills are important. 2014-09-D-22-en-1.

³⁶ Note, the form and content of the Baccalaureate examination has recently been reorganised and a reconsideration of its structure is not within the scope of this study. Nevertheless, comments on assessment from the IOE would be welcome in so far as the proposals contain a number of new subjects for which syllabi will need developing. Good practice would dictate that the form of assessment is an integral part of each course and is an important factor to consider in the balancing of a programme of studies and is also relevant to acceptance by tertiary education establishments. Moreover, the idea raised in the Inception Report of making accommodations for students taking tests/exams in their L2 or L3 is an interesting point in line with European School efforts to support students with learning difficulties/needs but fraught with complicating factors, especially given the language heterogeneity of the pupil population. It would be worth examining the issue in much more detail.

1.2.8. Access to University

According to a study carried out by Van Dijk Consultants on behalf of the European Parliament in 2008³⁷, 56% of the European School students that attend university begin their studies in their country of origin and 32% in their country of residence/European School. 71% of the students follow tertiary education in their mother tongue. According to a survey carried out in Brussels I in 2014, 34.21% of the students who responded gained access to a university in Belgium, 28.29% in the United Kingdom, 9.87% in France, 4.61% in the Netherlands, 3.29% in Spain and 2.63% each in Italy and Germany.³⁸ This seems to correspond roughly to the numbers that would be expected based on the Van Dijk analysis.

Within this general picture, it should be noted that the academic destinations of students are affected by a variety of factors within and outside of the European School sphere of control. There is, for instance, growing awareness and scrutiny of problems³⁹ encountered by European School students accessing university courses which operate a competitive entry system, which is the norm in some Member States and not in others. The causes include slippage of equivalency of the (criterion-referenced) European Baccalaureate against national school leaving qualifications which are norm-referenced or those which have floating grade boundaries and may experience grade inflation.

2. The Proposal for Reorganisation of Studies in S4-S7

2.1. Proposed Organisation of Studies in S4 and S5

For both S4 and S5, the proposed timetable requires a minimum of 31 periods and a maximum of 35 periods. Options in the same horizontal line are incompatible. However, schools are allowed to reverse the position of Music and Art, taking into account the choices made by students.

Subject	Number of periods	Language (as a rule)
CORE SUBJECTS S4		
L1	4	L1
Mathematics	4	L1
L2	3	L2
L3	3	L3
Physical Education	2	WL (VL/HCL)
Religion/Ethics	1	L2
History	2	L2
Geography	2	L2
Biology	2	L1
Chemistry	2	L1
Physics	2	L1
Total	27	

³⁷ [http://www.europarl.europa.eu/RegData/etudes/etudes/join/2008/408949/IPOL-CULT_ET\(2008\)408949_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2008/408949/IPOL-CULT_ET(2008)408949_EN.pdf)

³⁸ The language sections at EEBI include: French, English, German, Spanish, Italian, Danish, Polish and Hungarian.

³⁹ The European Parliament Petitions Committee has asked (November 2014) to be kept abreast of developments in this area. It is expected that the IOE Report will explore these issues.

OPTIONS S4		
Economics 4 / Greek / Ancient Greek	4 (or 2 Ancient Greek)	L2/L1/L1
L4 / ONL / Latin	4	L4/ONL/L1
Music / ICT	2	WL/WL
Art / Maths+	2 (or 3 Maths+)	WL/L1

Subject	Number of periods	Language (as a rule)
CORE SUBJECTS S5		
L1	4	L1
Mathematics	4 or 6	L1
L2	3	L2
L3	3	L3
Physical Education	2	WL (VL/HCL)
Religion/Ethics	1	L2
History	2	L2
Geography	2	L2
Biology	2	L1
Chemistry	2	L1
Physics	2	L1
Total	27 or 29	
OPTIONS S5		
Economics 4 / Greek / Ancient Greek	4 (or 2 Ancient Greek)	L2/L1/L1
L4 / ONL / Latin	4	L4/ONL/L1
Music / ICT	2	WL/WL
Art	2	WL

The proposals for S4 and S5 are based on the current timetable with a few changes. The principal change is that in S4 (but not in S5) the choice between Maths 4 and Maths 6 is removed. Instead, all students are required to take Maths 4 in mixed ability groups. A concurrent 3-period Maths+ option has been added for advanced students. This is informally known as the “modular mathematics proposal.” The syllabi for Maths 4 and Maths+ would be adapted from the current syllabuses for the Maths 4 and Maths 6 courses in S4.

The other change is that whereas currently, options are scheduled independently by each school, according to demand and available resources, in the proposal options are presented as a predictable set of choices, in which a student may choose one per row. While this may prevent schools from exceptionally opening certain options and option combinations, it has the advantage of increased predictability, as students can foresee option clashes and may make informed decisions during the earlier phases.⁴⁰ It remains the case that not all options must be given in each language. Unless a

⁴⁰ There is unfortunately an inconsistency in the timetabling of options between S3 and S4. While students in S3 must choose between ICT and Latin, in S4 and S5 these courses do not conflict. As it stands, it is thus a false choice. The same may be said about Economics and Greek during the transition from S5 to S6 and S7.

derogation is made, an option is not created for fewer than seven students.

2.1.1. Mathematics

As mentioned, one of the key proposals for S4-S5 concerns the creation of so-called “modular mathematics” in S4. In its December 2013 meeting, the Board of Governors expressed serious doubts as to the pedagogical consequences of this proposal and voted to extend the scope of the evaluation to include S4 and S5.⁴¹

There are also practical considerations. Currently, in S4 students choose between a basic and advanced course in mathematics; these are 4 and 6 periods respectively. If fewer than seven students request either course, then the number of periods for Maths 4 can be reduced from 4 to 3 and for Maths 6 from 6 to 4. If modular mathematics is introduced, then Maths+ takes on the status of an option taught in L1 rather than a core course. In this case, the course will not be offered if seven students from a given language section do not request it. Students will likely be given the option to take the course in a vehicular language if it is available at all. This will disproportionately affect the smaller schools and small language sections, those with class sizes of sixteen pupils or fewer.

2.2. Proposed Organisation of Studies in S6 and S7

In S6 and S7, the proposed curriculum breaks into three specialised courses of study: Science, Economics, Humanities/Languages/Arts. There is a common core of 14 periods with 3 to 5 periods of add-on subjects.

Students must choose at least three additional options (for this purpose, advanced courses are not counted as options). Students may choose an additional advanced option, from among three available “appro” options (L1+, L2+, Maths+). Advanced Maths may only be chosen by students taking Maths 5. The total number of periods is a minimum of 29 and a maximum of 35.

Subject	Number of Periods	Language (as a rule)
CORE SUBJECTS S6 and S7		
L1	4	L1
L2	3	L2
Physical Education	2	WL (VL/HCL)
Mathematics	3 or 5 (i.e. 2 add-on)	L1
Cross Curricular Project	1 (only in S6)	na
Ethics and Religious Studies	2 (1 in S6)	L2
Total	14 or 16	
ADVANCED OPTIONS S6 and S7		
L1+/L2+/Maths+	3	L1/L2/L1

In the Science Specialisation, students are obliged to choose at least two options from Biology, Chemistry, ICT, Physics and Geography. Maths 5 is compulsory for students choosing Physics. Human Sciences is compulsory for those students not choosing Geography.

⁴¹ Noting the Inception Report’s comments (pp. 46-47) on “progression” (particularly the sequencing of concepts by curriculum developers) and on “pathways” (especially given the variable marks attained in Mathematics courses currently across the system – see document 2014-09-D-44-en-1, a report on school failures and repeat rates in the European Schools presented to the JTC, October 2014), the reflections on this proposal by the IOE Evaluation team are keenly anticipated.

SCIENCE SPECIALISATION: COMPULSORY ADD ON		
Human Sciences	3	L2
SCIENCE SPECIALISATION: OPTIONS		
Biology	4	L1
Chemistry/ICT/ONL	4	L1/? ⁴² /ONL
Physics/Geography/Latin	4	L1/L2/L1
Greek/L3	4	L1/L3

In the Economics Specialisation, students are obliged to take Economics and at least one of the History or Geography options.⁴³ General Science is compulsory for those students not choosing scientific options.⁴⁴ Maths 5 is compulsory for students choosing Physics.

ECONOMICS SPECIALISATION: COMPULSORY ADD ON		
General Science	3	L1
ECONOMICS SPECIALISATION: OPTIONS		
Economics	4	L2
History/ICT/ONL	4	L2/?/ONL
Physics/Geography/Latin	4	L1/L2/L1
Greek/L3	4	L1/L3

In the Humanities Specialisation, students are obliged to take at least one option from History and Philosophy. General Science is compulsory.

HUMANITIES SPECIALISATION: COMPULSORY ADD ON		
General Science	3	L1
HUMANITIES SPECIALISATION: OPTIONS		
Music/Philosophy	4	WL/L1
History/L4/ONL	4	L2/L4/ONL
Art/Geography/Latin	4	WL/L2/L1
Greek/L3	4	L1/L3

Beginning in S6, the religion/ethics course becomes a non-confessional ethics and religious studies course (still taught in L2).⁴⁵ L1 and L2 courses remain 4 and 3 periods respectively, but advanced options are added to allow specialisation in these subjects. Mathematics changes from a 4/6-period course in S5 to a 3/5-period course in S6. Maths+ is offered to allow students taking Maths 5 to further specialise. (Maths+ is not required for scientific options⁴⁶; Maths 5 is required for Physics.) All options are 4 periods in S6 and S7—including Art, Music and ICT; options in S6 and S7 are all part of the Baccalaureate examination.

⁴² Document 2013-09-D-17-en-4-Annex I does not provide information on the language of this course.

⁴³ There is in fact inconsistency on this point in document 2013-09-D-17-en-4-Annex I. Page 11 states that both Economics and History are required, while page 12 states that Economics is required plus one of the options History or Geography.

⁴⁴ It is unclear from the proposal whether ICT is included among the “scientific options” in this case or only physics.

⁴⁵ The change in the language of instruction for religion courses is a proposal extending the reform introduced in September 2014 at the S1-S3 levels and is intended to carry through to the Baccalaureate. The teaching of ethics/religion (a course in which students are encouraged freely discuss issues in relation to their spiritual beliefs) in L2 has been quite controversial with parents and has resulted in an increased number of students being compelled to join groups outside their confessional fold. With the additional requirement, proposed by the working group, that the new S6 and S7 combined course be followed by a compulsory written Baccalaureate exam in students’ L2, parents question that the original intention of the religion/ethics option may have been lost.

⁴⁶ This distinguishes Maths+ at this level with the Maths+ proposed for S4, which would be required for students planning to continue in the Maths 5 stream, and therefore for upper-level Physics.

According to this proposal, core and add-on courses which are compulsory are automatically created, though in some cases with grouping or reduced course hours. If the minimum number of applicants (five students at this level) does not request an option and a derogation is not granted, then the school allows a second choice from amongst the options created (this may include the same option in another language). Students wishing to take an option from outside of the chosen specialisation will be regarded as independent candidates according to Article 13 of the Baccalaureate regulations.

2.2.1. Cross-Curricular Project (CCP)

Based on the recommendation presented in a report prepared by the University of Cambridge-International Examinations on the European Baccalaureate in their External Evaluation of the European Baccalaureate,⁴⁷ a cross curricular project is being proposed. The project is proposed as a 1-period course whereby students work under the tutelage of a teacher-tutor to prepare an extended essay. The project has already been piloted and is viewed quite favourably by stakeholders. The administrative details, including a guarantee that pedagogical support will be available, remain vague.

2.2.2. Human Sciences and General Science

The education provided to all European citizens should include structured reflection on scientific and environmental phenomena as well as on the historical, geographical and philosophical aspects of modern society. The complexity of those questions make it necessary to provide a full programme through to Baccalaureate level.

Human Sciences and General Science are add-on courses which are compulsory depending on a student's specialisation and option choices. The 3-period courses are intended to cover a range of topics across the disciplines of Biology, Chemistry and Physics for the General Sciences course and History and Philosophy for the Human Sciences course. It is likely that several teachers will be involved in teaching, according to their area of specialisation. Details of the syllabi and of the practical organisation of these two courses still have to be developed, which remains a concern to some stakeholders.

The current choice from a number of 2-/4-period options is felt to suffer from several disadvantages, which the proposed courses are intended to address. First, the current requirement in the scientific fields for those not focusing on the sciences (a minimum of 2-period Biology) is viewed as too lightweight and narrow. Second, the acceptance of the 2-period courses in the tertiary education of some member states is in question. And finally, decreasing the sheer number of courses may help consolidate groups and optimise class numbers / resources.

On the other hand, the two new courses also have potential drawbacks to consider. First and foremost, it is unclear whether these subjects will be widely recognised by university programmes. It is questioned whether these courses will be even more “difficult to sell” than the lightweight versions of traditional disciplinary subjects. Second, it may prove difficult to staff these multi-disciplinary courses with teachers educated and trained in the various member states, many of which do not offer certification to teach such interdisciplinary subjects.⁴⁸ With its reliance on a

⁴⁷ http://www.eursec.eu/fichiers/contenu_fichiers1/1261/External%20Evaluation%20-%20Final%20Report.pdf

⁴⁸ In this regard, it is worth looking into the experience with the S1-S3 Integrated Science courses, which have had a varied reception across the different language sections.

transient teaching staff from across Europe, the system is in its nature conservative and suited to courses set along more traditional disciplinary lines.⁴⁹

⁴⁹ In the terms of the Inception Report, one could say that due to its dependence on teachers from a variety of backgrounds the European School system leans toward a more “strongly classified and strongly framed curriculum”. However, a connected, nested (as now being attempting with the “learning to learn” module) or even sequenced approach may be feasible in the current environment.

3. Interparents Proposal for S6-S7

In Autumn 2013, INTERPARENTS prepared an alternative proposal for S6 and S7. This alternative proposal was officially presented in November 2013 (see footnote to Introduction of this document). The INTERPARENTS proposal analysed the actual course combinations taken in S6 by students in Brussels and Luxembourg (the so-called “clash tables”)⁵⁰ and tried to minimize the clashes based on the empirical evidence of courses offered and selected in those schools.⁵¹

The INTERPARENTS proposal takes many of elements from the working group proposal with two major differences: 1) the 2-period options are kept in lieu of Natural Sciences and Human Sciences courses; 2) students are allowed to choose between those add-on courses and options presented in a single row—practically speaking, these would be those options that were timetabled simultaneously. It also keeps the possibility for Laboratory courses and offers the space for a new Sociology course.

The proposal requires a minimum of 29 required periods and a maximum of 35 periods, as in the working group proposal. There is a common core of 13 periods with 6 periods of add-on subjects. Students should take at least two, but not more than four 4-period options.

Subject	Number of Periods	Language (as a rule)
CORE SUBJECTS S6 and S7		
L1	4	L1
L2	3	L2
Physical Education	2	WL (VL/HCL)
Mathematics	3 or 5 (i.e. 2 add-on)	L1
Cross Curricular Project	1	NA
COMPULSORY ADD ONS		
History 2	2	L2
Philosophy 2 / Religion	2	L1/L2?
Biology 2 / Geography 2	2	L1/L2
OPTIONS		
Chemistry / Geography 4 / Philosophy 4 / Art	4	L1/L2/L1/WL
Biology 4 / History 4 / Music / ICT	4	L1/L2/WL/WL
Physics / Economics / Sociology / Latin	4	L1/L2/L2/L1
Greek / L3	4	L1/L3
Maths+/L1+/L2+/L4/ONL/Lab	3/3/3/4/4/2	L1/L1/L2/L4/ONL/L1

In the INTERPARENTS proposal, Religion / Ethics becomes an optional course and is timetabled against Philosophy 2. Like the working group proposal, the INTERPARENTS proposal introduces a 4-period ICT option. Beyond this, it also introduces a 4-period Sociology option.

The restrictions are that students may not choose a 2-period and 4-period version of the same subject, and students may not choose two subjects in the same row. Otherwise, they are given considerable leeway to develop their own programme in line with their interests and the requirements of specific national systems.

⁵⁰ 2013-D-01-78 Annexes.

⁵¹ It is unclear which years these data cover.

Core and add-on courses are obligatory with the following exceptions:

- History 2 is compulsory for those not choosing History 4.
- Biology 2 is compulsory for those not choosing Physics, Biology, Chemistry or ICT.
- Geography 2 is compulsory for those students not choosing Geography 4, History 4, Philosophy 4, Economics or Sociology.

The schools should integrate the Cross Curricular Project into the timetable as fits the existing infrastructure and teaching capacities. The subject is foreseen as a 3-month module. Optionally, in S7 the hour slated for the Cross Curricular Project could be used for extra-curricular subjects necessary to ensure the admission to a national universities (e.g. to enable students independently to follow topics of enquiry which might be needed to fulfil a university admission requirement). The timetable could be modified or adapted by directors taking into account the local needs of the students if the organisation of the school so enables.⁵²

The INTERPARENTS proposal is an attempt to take what is best from the current and proposed timetables: the adaptability of the former with the predictability of the latter. Of course, neither the current nor proposed structures guarantee that all options will be offered at each school and in each language.

⁵² It should be noted that the structure proposed by INTERPARENTS seeks to ensure predictability for students, who would know in advance which combinations of options would be possible or not according to the rules. This however is not intended to prevent a director from organising timetables as best fits their infrastructure and resources, provided that the rules on combinations of options are respected.

4. Perceived Strengths and Weakness of the Three Alternatives

4.1. Strengths and Weakness of Current Structure (S4-S7)

Perceived strengths of current structure:

- *Flexibility.* Students can choose courses and course combinations that suit their interests and comply with the requirements for secondary education and/or university admission in their member states. This suits the needs of a highly mobile population.
- *School Autonomy.* Schools can tailor the offering and the timetable to suit the demands of their population⁵³ as well as their infrastructure and teaching resources.
- *Generalist Profile.* The offer is a balance of scientific, social science and humanities courses providing a generalist education through to the Baccalaureate examination.
- *Traditional Disciplinary Boundaries.* The system, with its dependence on teachers from a variety of backgrounds, seems to lend itself to a more traditional disciplinary structure. We suspect that courses that fall within disciplinary boundaries are also more readily recognised by a range of university systems.
- *Basis in Foreign Language.* Second language learning is enhanced through the use of the second language as a language of instruction and learning in social science courses.

Perceived weaknesses of current structure:

- *Lack of Predictability.* Course offerings and course combinations/clashes are not structured in a predictable way that allows students to plan their programme over the short and longer terms.
- *Many Small Groups.* The structure still results in a large number of small groups of ten students or fewer. This is considered needlessly costly and inefficient.
- *Overloaded Schedule for “Scientists”.* Compared with their peers, science-oriented students have a needlessly rigid timetable, which requires a minimum of 6 periods of Philosophy, History and Geography through to the Baccalaureate. This practically renders the choice of a second foreign language or even Maths+ difficult.
- *Availability of Options.* Options are not offered if fewer than seven students (five students in S6-S7) have opted for them, unless a derogation is granted. As a result, many options are only “theoretical” in smaller schools or sections.
- *Uneven Offer.* The rules reduce the number of periods allocated for a core subject if a course is created with fewer than seven students (five students in S6-S7). This can work against uniformity in the educational offer. The extent to which course syllabi must be adapted to support this is unclear.
- *Academically Rigorous.* The school curriculum is oriented toward university-bound students with effectively no active vocational programme for those who are not academic. There are high failure rates particular in certain courses, levels and language sections.
- *Incomplete Harmonisation between Sections and Schools.* There is variation in the educational offer available to different schools and sections. Distortions include differences in the language and number of periods of tuition and options available to students. The pedagogical background and approach of teachers originating from the different member states also contributes to this.

⁵³ This is the case, for example, in Alicante, which offers Valencian and Technical Drawing as complementary courses, two subjects useful for access to local universities.

4.2. Strengths and Weaknesses of Working Group Proposal (S4-S7)

Perceived strengths of the working group proposal:

- *Fewer Small Groups.* It is claimed to increase group sizes with “generic” Human and Natural Science courses, modular maths in S4 and religion taught in L2. Clear choices between options should also increase class sizes.
- *Predictability.* Proposes a more predictable timetable with set option combinations / clashes that allow for forward planning by students and schools.
- *Specialisation Structure Easily Comprehensible.* The structure of specialisations is comprehensible across national boundaries and is particularly well suited to countries without generalist secondary and tertiary education.
- *Balanced Load for Sciences.* Presents fewer compulsory options for science-oriented students.
- *Basis in Foreign Language.* Second language learning is enhanced through the use of the second language as a vehicular language in social science courses. The use of second language is extended to religion courses. The third language is well supported in this structure.
- *Introduction of Cross Curricular Project.* The proposal introduces a cross disciplinary group project that encourages student initiative and independent thinking with the aim of supporting the ‘Lisbon’ eight key competencies.

Perceived weaknesses of the working group proposal:

- *Modular Maths Not Feasible.* The pedagogical value of the modular maths proposal is debatable,⁵⁴ but beyond this, modular maths is also not uniformly feasible. The Maths+ course becomes an option, and as a result, if fewer than seven students choose Maths+ in S4 the option may need to be taken in a vehicular language⁵⁵ or will not be offered at all. This has an obvious chain effect on the Science subjects, in particular Physics (for which is remains a requirement in S6) and, to a certain extent, Chemistry.
- *Unnecessarily Restrictive.* Given the array of programmes and national systems to which students from the European Schools may apply, the proposals seem needlessly restrictive, particularly given the fact that the structure of the proposed timetable makes possible a broader choice of options. The restriction of option choices goes directly against the Board of Governors’ mandate to create a “flexible” structure and potentially prevents students from “playing to their strengths.”

⁵⁴ It remains unclear why the modular maths proposal has been included in the reform against the explicit recommendations of the European Schools maths inspector. 2013-08-D-17-en-4.

⁵⁵ The implications of teaching in L2 go beyond mere comprehension and accessibility of the lesson: “Although mathematics is generally regarded as ‘the universal language’, the reality is that different countries have very different cultures when it comes to the teaching and learning of mathematics. There are significant variations in the pre-university mathematical experience, in terms of the curriculum content, learning styles, levels of abstraction and assessment methods.” (*Investigation of International Mathematical Cultures*” Xu 2013, <http://www.mathcentre.ac.uk/resources/uploaded/aipingxuintlmathscultures.pdf>) It is partly in recognition of these differences that European Schools use teachers who are seconded from Member States i.e. to ensure that, within the limits of the syllabi, coherence with national systems and national approaches to the teaching of the subject are maintained, this in order 1) to maintain the link with the national secondary education as students move between the systems and 2) to prepare students for the transition to their national tertiary systems. However, ‘non-native’ teachers are increasingly common in the system. Aware that for at least a decade, “international comparative research in mathematics education [has been] a growing field” at the heart of which is the aim of “grasping and making use of diversity,” (*Contrasting Comparative Research on Teaching and Learning in Mathematics*” Emanuelsson and Clarke <http://www.emis.de/proceedings/PME28/RF/RF004.pdf>), INTERPARENTS expects that the IOE team’s recommendations on Maths teaching from S4 will be informed by latest thinking in this area.

- *Introduction of New Courses with Unclear Content and Viability.* The content (curricula) of the new courses Human and Natural Sciences, Baccalaureate-level ICT, Religious/Ethical Studies and modular Maths is not explained in detail. It is, moreover, not clear whether Human and Natural Science courses will be recognised by university programmes in the various member states nor whether the schools have the teachers with the correct specialisation and experience to teach such a multi-disciplinary programme.
- *Economic and Humanities Specialisations Potentially Not Popular.* According to the data on courses chosen by students,⁵⁶ several of the key subjects in the Economics and the Humanities specialisation are not popular among students. This may jeopardise the viability of those specialisations in some schools.
- *Specialisation Selection Haphazard.* The choice of options given for each specialisation is not well thought out.⁵⁷
- *Option Choices Not Consequent.* Choices are timetabled at each phase, but several do not follow from the lower to the upper cycles in a consequent manner.⁵⁸ In these cases, student choice is not supported over the long term. This is another needless limitation to the educational offer.
- *ONL Conflicts.* In S6 and S7 ONL conflicts with History, Chemistry and ICT. This would make it difficult for certain students to study their national language and prepare appropriately for university programmes in the sciences or humanities. In S4 and S5, ONL conflicts only with Latin and L4; it is not clear why this was not continued through to S6 and S7. (In fact, ONL groups are regularly small, and thus often require grouping across years and therefore ad hoc timetabling.)
- *Missing History.* It is possible for students in the Humanities and Economics specialisations to obtain a Baccalaureate without studying History for the last two years of school. In the current curriculum, the history of the 20th century would be missed out completely. Science students have no possibility to take history in S6 and S7, though in some member states upper-level history is a requirement for university admission.
- *Renewed Emphasis on Religion.* A compulsory ethics and religious studies course has been added as an examined subject. The number of periods dedicated to the subject has been increased from 1 to 2 in S7. It is unclear why compulsory hours are being given to religion rather than, for instance, more essential courses, like biology or history (see above).
- *Religion Course Less Relevant.* At the same time, the religion course has transformed into an L2 option. As has been seen in S3 this year, this measure serves to “break up” the religious groupings typical of each particular language section; in practice this means that due to group size rules more students are being educated in a confession and cultural context different from their own. The spiritual role which the course was once intended to serve is being hollowed out.
- *L4 Not Viable.* The teaching of L4 becomes practically nonexistent, as it is offered only in the Humanities specialisation and there it clashes with History (see above).

⁵⁶ 2013-D-01-78 Annexes.

⁵⁷ For instance, why is Physics the only 4-period science offered in the Economics specialisation—and why can't the choice be extended to the Humanities specialisation? Why is Latin but not L4 included in all specialisations, especially considering the relative popularity of L4 as an exam subject? Why can't Art and Music be offered to the Economics and Science specialists in a context of the 8 key competences?

⁵⁸ In S3 students can choose either Latin or ICT, but not both. In S4 and S5, the timetable suggests that students can choose both. It is in fact a false option that could be better used, for instance by realigning the options to allow students to take Music and ICT.

Similarly, in S4 and S5 ICT and L4 may both be taken, but in S6 and S7 students would have to choose between these. Latin and Art may also be taken in S4 and S5, but in S6 and S7 students would have to choose between these. At the same time, Latin may not be taken with L4 in S4 and S5, but by S6 and S7, there is on paper the possibility to take these together.

- *Availability of Options.* Options would still not be offered if fewer than seven students (five students in S6-S7) request them, unless a derogation is granted. As a result, many options would be “theoretical” in smaller schools or sections.⁵⁹
- *Uneven Offer.* The rules would still reduce the number of periods allocated for a core subject if a course is created with fewer than seven students (five students in S6-S7). This may continue to work against uniformity in the educational offer.
- *Academically Rigorous.* The school curriculum is oriented toward university-bound students with effectively no active vocational programme for those who are not academic. It does not address high failure rates in certain courses, levels and language sections.⁶⁰
- *Incomplete Harmonisation between Sections and Schools.* Does not address the variation in the educational offer available to different schools and sections. Distortions would still include differences in the language and number of periods of tuition and options available to students. The pedagogical background and approach of teachers originating from the different member states remains a factor.

4.3. Strengths and Weaknesses of INTERPARENTS Proposal (S6-S7)

Perceived strengths of the INTERPARENTS proposal:

- *Rationale and Predictability.* Proposes a more predictable timetable with set option combinations / clashes that allow for forward planning by students and schools. Option combinations / clashes are rationalised based on previous student choice.
- *Flexible Within Boundaries.* Allows students to “read across” rows on the timetable, enabling them to take any option that is logistically feasible. This allows a degree of flexibility well suited to the array of programmes and national systems to which student from the European Schools may apply. It is also in line with the Board of Governors' mandate for flexibility.
- *Fewer Small Groups.* Clear choices between options should increase class sizes.
- *Traditional Disciplinary Boundaries.* The system, with its dependence on teachers from a variety of backgrounds, lends itself to a more traditional disciplinary structure. We suspect (and thus look to the IOE for verification or otherwise) that courses that fall within disciplinary boundaries are also more readily recognised by a range of university systems.
- *Balanced Load for Sciences.* Presents fewer compulsory options for science-oriented students.
- *Basis in Foreign Language.* Second language learning is still enhanced through the use of the second language as a vehicular language in social science courses. The third and now fourth foreign language are both well supported in this structure.
- *Introduction of Cross Curricular Project.* The proposal keeps the cross disciplinary group project that encourages student initiative and independent thinking in line with the 8 key competences and uses the Cross Curricular period in S7 to allow students to take complementary or extra-curricular courses needed for university entrance.
- *Introduction of Sociology.* Currently a complementary course in several schools, this option is included to redresses the balance between social sciences and sciences.

⁵⁹ This perhaps brings into the question the practicability of the one-size-fits-all model in this context.

⁶⁰ In relation to the proposal to create General Science courses, we note that p. 47 of the Inception Report states that, “there is no evidence that studying combined sciences reduces failure rates.”

- *Religion/Ethics Optional.* Religion, whether confessional or not, and in first or second language, is made optional in this structure. This seems a more appropriate reflection of students' belief and independent choice at this stage of their studies when preparing for access to tertiary education.
- *Balanced Generalist Profile.* The offer provides a balance of scientific, social science and humanities courses making possible a generalist education through to the Baccalaureate examination while also allowing for some degree of specialisation.

Perceived weaknesses of the INTERPARENTS proposal:

- *Introduction of New Courses with Unclear Content.* Includes several courses from the working group proposal with as yet undefined curricula.
- *ONL Conflicts.* ONL still conflicts with subjects advanced subjects and Lab courses. This might still cause difficulties for certain students to study their national language and prepare appropriately for university programmes in the sciences or humanities. An ad hoc timetabling solution may still be preferred for the small multi-level groups generally created for ONL.
- *Availability of Options.* Options would still not be offered if fewer than seven students (five students in S6-S7) request them, unless a derogation is granted. As a result, many options would be "theoretical" in smaller schools or sections.
- *Uneven Offer.* The rules would still reduce the number of periods allocated for a core subject if a course is created with less than 7 students (5 students in S6-S7). This may continue to work against uniformity in the educational offer.
- *Academically Rigorous.* The school curriculum is oriented toward university-bound students with little or no active vocational programme for those who are not academic. Does not address high failure rates in certain courses, levels and language sections.
- *Incomplete Harmonisation between Sections and Schools.* Does not address the variation in the educational offer available to different schools and sections. Distortions would still include differences in the language and number of periods of tuition and options available to students. The pedagogical background and approach of teachers originating from the different member states remains a factor.

In all cases, the baseline and proposals must be considered in close conjunction with the rules for group sizes (see: document 2011-01-D-33-en-9), which regulate the opening of classes (as introduced in Section 1.2 above).

5. Perceived Strengths and Weakness of the Three Alternatives Against Initial Set of Evaluation Criteria

“Task 2 involves an identification of the different evaluation criteria that are relevant. Effects on pupil’s education, compared to the current situation, should be identified: how it is affected and when.”

When defining these criteria, the Contractor should be guided by the basic objectives of the reform, that any proposal:

- meets the principles stated in the Convention
- ensures access to European secondary and tertiary education systems
- meets the mandate given by the Board of Governors
- takes into account the needs of students faced with the demands of the modern world
- guarantees in the last two years, leading to the European Baccalaureate, a general education around the eight key competences for lifelong learning
- introduces elements of discrimination against minority groups either by language section, gender, learning disability or any other category

The Contractor should consider (but is by no means restricted to) the following criteria:

- impacts in relation to the access to national secondary and higher education systems in member states;
- impact on student mobility to and from the European schools and the national education systems;
- feasibility of options and combinations offered (i.e. whether under what circumstances, courses and course combination will be offered across the system), also taking into account past students choices;
- impact on specific groups, such as students without a language section, students with special education needs, students from countries with more than one national language and small language sections.

It is not within the expertise of INTERPARENTS nor is it our responsibility to undertake any sort of evaluation on behalf of the IOE, neither would this be invited. Nevertheless, INTERPARENTS takes this opportunity to initiate a discussion on some of the criteria that the IOE was asked to consider.

5.1 Whether alternatives meet the principles stated in the Convention

These principles are laid out in Article 4 of the Convention:

- The courses of study shall be undertaken in the languages specified in Annex II.⁶¹
- Certain subjects shall be taught to joint classes of the same level.
- A particular effort shall be made to give students a thorough knowledge of modern languages.
- The European dimension shall be developed in the curricula.
- The conscience and convictions of individuals shall be respected.
- Measures shall be taken to facilitate the reception of children with special educational needs.

⁶¹ The list may be modified by the Board of Governors in case of accession of new Member States or new schools.

In general, the principles are respected by all three alternatives, though the rigorous academic nature of the programme presented by all three may be seen as an obstacle to students with a range of special needs. Recent developments are also worrying in this respect, as reforms to the regulations for supporting children with special education and learning support needs have resulted in a reduction in support measures.⁶² The introduction of L2 as an instructional language for teaching religion and related rise in mixed confession Religion courses are also a concern, both in terms of the added language “burden” the former presents for some students and the implications of both for students’ cultural identity.⁶³ In practice, this has resulted in, for instance, Calvinist teachers teaching Anglican children, Catholic teachers teaching Lutheran children.⁶⁴

The new Religious Studies and Ethics course proposed by the working group for S6 and S7 may potentially conflict with the conscience and convictions of individuals, though this will depend on the concrete syllabus and the job description of the teacher posts. The INTERPARENTS proposal mitigates this to some extent by making ethics/religion an option in S6 and S7. (Note: the INTERPARENTS proposal could support either discrete confessional courses or a common religious studies course, as deemed appropriate.)

5.2 Whether alternatives ensure access to the national secondary studies (mobility to national Systems)

Legally, of course, access is ensured. In co-signing the Convention, member states recognise the European School programme and European Baccalaureate. The key question is whether there is a smooth transition from the European Schools from and to national secondary education systems. Member state inspectors are entrusted with ensuring a basic compatibility between systems. That being said, there seems to be no internal working paper that has seriously analysed the issue, especially with regard to SWALS or ONL students and in the light of recent and proposed changes. On the contrary, equivalence seems to be taken for granted. The working group proposal does not propose any concrete measures to improve the situation. (The INTERPARENTS proposal only treats S6 and S7 and thus movement into national secondary systems is not its primary object.)

5.3. Whether they ensure access to higher education systems in member states

The current system is quite flexible and allows students to adapt their programme to the entry requirements of various national university systems. Nevertheless, the curriculum does not meet the requirements of some member states.⁶⁵ Complementary courses may in some cases address the problem (if minimum class sizes are met, of course). The working group proposal introduces new restrictions on choices and course combinations. It also eliminates 2-period options and complementary courses (including dedicated Lab courses⁶⁶). The inclusion of the multi-disciplinary courses: Natural Sciences and Human Sciences may hinder access in member states with a more conservative educational approach. The problematic timetabling of ONL against History, Chemistry and ICT may likewise be a hindrance to university acceptance in some member states. The INTERPARENTS proposal attempts to palliate the effect by sticking with traditional disciplinary

⁶² Policy on the Provision of Educational Support in the European Schools 2012-05-D-14-en-7

⁶³ Students responding to questions about the September 2014 introduction of L2 for ethics/religion in S3 sometimes view it merely as an additional chance to practice their languages but others cite the loss of the only opportunity in school to openly express themselves in their mother tongue.

⁶⁴ This calls to mind the IOE evaluators’ reference on page 42 to Race’s comments in 2011 about “how students debate, digest and form their own opinions”.

⁶⁵ For instance, in the case of Spain, the European Schools do not offer Universal Literature, Technical Drawing, National Geography or National History.

⁶⁶ It would be particularly important to verify the importance of Lab courses are for key university programmes, building on the preliminary remarks made in the Inception Report, p. 48.

options, removing clashes with ONL and retaining Lab courses; it also includes an extra period in S7 for complementary or extra-curricular courses that might be used by students to help meet university requirements.

5.4. Impact on student mobility to the European Schools

The schools have the explicit mission to support the EU institutions and are thus funded through the budget of the European Commission. As mobility is a way of life in the EU institutions, the extent to which the programme eases and supports transition is key. The use of second language as a vehicular language and the early introduction of third language work against the movement of students into the system in the late primary or secondary levels; this is particularly true for SWALS students. The rigorously academic nature of the secondary programme may also prove an obstacle for students entering in the upper secondary cycle.⁶⁷ The schools have some, but not extensive, learning support for students entering the system, particularly in languages. However, it is true that students must make a concerted personal effort to adapt. Neither the working group proposal nor the INTERPARENTS alternative addresses this aspect.

5.5. Whether they meet the mandate given by the Board of Governors

The mandate was given in the Meeting of the Board of Governors in Oxford in April 2012. The mandate was as follows:

A mandate for the setting up of an 'organisation of studies in the secondary cycle' working group, for the sake of rationalisation of studies, with particular reference to options. The working groups' composition would be based on that of the 'Languages' Working Group, to include drafting of a proposal for the new structure of studies in the secondary cycle, in order to improve its flexibility and efficiency, and for the financial aspects (...)

Thus, the following elements may be identified:

- Rationalisation of studies, with particular reference to options
- Improvements in flexibility and efficiency
- Financial aspects, including group sizes

The current situation offers a flexible system but with some inconveniences. Firstly, timetable constraints limit the options offered by schools to students, especially in S6 and S7, and the lack of a fixed timetable makes it impossible to know in advance if/which options will clash. Moreover, some options are not offered because of an insufficient number of students and some compulsory subjects are offered with reduced hours or grouping. There are likewise too many compulsory subjects for students choosing in S6 and S7 scientific option. Finally, the current system produces many classes with fewer than 10 students.

The proposal made by the working group is a more predictable arrangement of options from S4 to S7. It accomplishes this in part through a rather rigid system of specialisations in S6 and S7; the criteria used for deciding whether a subject should be offered in one, two or three specialisations are quite unclear.

⁶⁷ It would be worth examining the correlation, if any, between the level at which students enter the system and their success in the programme. This would be especially relevant in the case of SWALS students.

	<i>All</i>		<i>Science</i>	<i>Science & Economics</i>	<i>Economics</i>	<i>Economics & Humanities</i>	<i>Humanities</i>	
1 ⁶⁸			BIO		ECO		MUS	PHI
2	ONL		CHI	ICT		HIS	L4	
3	GEO	LAT		PHY			ART	
4	L3	GRE/ GRO						

The risk still remains that many options will not be offered to all sections or that they will be compelled to take courses in L2 or L3. It is of particular concern that Maths+ is an optional course in S4, as several later courses are dependent on it.

The INTERPARENTS proposal presents a more predictable arrangement of options for S6 and S7 in a more flexible arrangement than the working group proposal. To increase flexibility, several 2-period subjects have been retained (History, Biology and Philosophy) and Religion has become an option. The use of the Extra-Curricular timeslot to allow students to study subjects not covered by the regular curriculum also increases flexibility. Some option combinations are still restricted.

1	CHI		GEO 4		PHI 4		ART	
2	BIO 4		HIS 4		MUS		ICT	
3	PHY		ECO		SOC		LAT	
4	L3		GRE					
5	MAT+	L1+	L2+	ONL	L4	LAB		

The risk still remains that many options will not be offered to all sections or they will be compelled to take courses in L2 or L3. Both the working group and the INTERPARENTS proposals may increase group sizes, though it is unclear to what extent.

5.6. Feasibility of options and combinations offered

As explained, in practice some options and combinations are not offered in the current system. Most schools try to adapt their offer taking into account students' preferences, but this is probably one of the weakest points in the current situation. It particularly affects small schools and small language sections who have a more limited offer, often compelling students to take certain options in L2 or L3. The working group proposal for S6 and S7 tries to address the problem by creating fewer courses and a more rigid structure in an attempt to enlarge and consolidate groups. It does so without taking into account the course combinations actually taken by students. The INTERPARENTS proposal also tries to consolidate groups and thus increase the availability of options and combinations at the same time as minimising clashes.⁶⁹ One may also question the feasibility of proposed interdisciplinary courses, such as Human Sciences, Natural Sciences and Religious Studies. The European Schools depend on teachers seconded from the 28 member states,

⁶⁸ We have given a number to each timeslot to facilitate the analysis. Note that in time slot "1" four options are offered, each of them for only one specialisation. Only Music and Philosophy are offered as competing courses under one specialisation. In time slot "2" five options are offered, one of them it is offered in all specialisations and two in two specialisations. As a result of this, there are three choices in the Science specialisation, two choices in the Economics specialisation and three in the Humanities specialisation. In time slot "3" four options are offered, two of them are offered for all specialisations, one for Science and Economics and one only for one specialisation. As a result of this there are three options competing in each specialisation. Time slot "4" offers two options for all specialisations.

⁶⁹ Though valuable, the data on course combinations taken by students also give an incomplete picture of actual demand in as much as they are limited to courses actually offered by the schools, not what the students initially wanted to study. The fact that the clash data are taken from student populations in Brussels and Luxembourg somewhat mitigates this as these schools have a relatively wide offer of courses.

many of whom are trained in a more traditional manner.⁷⁰ There are few possibilities for teacher induction or retraining in the current pedagogical framework.⁷¹

5.7 Whether they take into account students' need, where they are faced with the modern world's demands

It is in fact difficult to assess this without more clearly defining what is meant by “modern world's demands.”⁷² It might be argued that, with its relative flexibility, offer of courses like economics and high academic levels in maths and sciences, the current curriculum more or less responds to the demands of the modern world. The inclusion of topics related to Europe and the “European experience” is also relevant. The working group's addition of a 4-hour Baccalaureate-level ICT course may be seen as a positive move in this light. One could also argue that the inclusion of more interdisciplinary courses, such as Human Sciences, Natural Sciences and Religious Studies would make it possible to treat more modern-world issues that are not easily taught within strict disciplinary boundaries. Independent group work such as the Cross Curricular Project is also a step in the right direction. On the other hand, the elimination of hands-on science Lab courses may work against the trends in science education. The INTERPARENTS proposal retains the Lab courses and proposes a Sociology course. It offers more basic level options in lieu of interdisciplinary courses.

5.8. Whether they guarantee in the last two years, leading to the European Baccalaureate, a general education around the eight key competences for lifelong learning

The eight key competences are as follows:

- Communication in the mother tongue
- Communication in foreign languages
- Mathematical competence and basic competences in science and technology
- Digital competence
- Learning to learn
- Social and civic competences
- Sense of initiative and entrepreneurship
- Cultural awareness and expression

The new syllabi have encouraged teaching staff to consider the 8 competences in their pedagogical programmes. This has likely served to shift the focus of teaching toward the competences, though the impact would be difficult to quantify. Beyond this, one could argue that the current system has strong support for **communication in a foreign language** and **mathematical and scientific competence**, but is relatively weak in many other areas.

Though a lot of effort and funds are spent to cover the full range of languages, certain students including SWALS, those with ONL and some category II and III students, as well as certain European minorities, have minimal or no support for their **mother tongue**. **Digital competence**

⁷⁰ In this regard, it is worth looking into the experience with the S1-S3 Integrated Science courses, which have had a varied reception across the different language sections.

⁷¹ It is worth highlighting that the principle of seconded teachers from Members States is the educational foundation of the European Schools and key component for ensuring coherence with, and children's transition to, the national educational systems. Mindful of the reference made in the IOE's Inception Report (p. 42) to teacher development and “equity pedagogy” as a key component of multicultural education, the call made in the December 2014 Board of Governors Meeting for a review of how teachers are recruited, retained and trained may be potentially relevant to the evaluation and worth following up.

⁷² This was also pointed out by the IOE in its Inception Report. The professional opinion and research findings of the IOE team are keenly anticipated in this respect.

also has little support in the system. ICT is compulsory only up to S2 and after this is set against other options. Until recently, there was a **learning to learn** module in S1 comprising an hour each week in the L1 class dedicated to the topic. The competence is allegedly covered in all classes now, but there has been little clear follow up to substantiate this. **Social and civic skills** may or may not be addressed through the religion courses according to the discretion of the teacher and relevant religious authority. The focus on the “European aspect” in social science and humanities courses may also foster these skills. The students likewise participate in the governance structure of the schools up to the highest level. Nevertheless, there is little in the curriculum to support these competences. The current system hosts many smaller and ad-hoc programmes and projects that heighten a **sense of initiative** but these are specific to each school and are sometimes dependent on the initiative of individual teaching staff. The economics course includes an enterprise project, but this course is not taken by all students. **Cultural awareness and expression** is quite difficult to quantify. Education in traditional fine arts, Art and Music, is limited. These courses are options from S4 upwards and there is little or no focus on history of art and music. On the other hand, there is a focus on foreign languages and literature in the system, and History is required through to the Baccalaureate.

The working group proposal for S4-S7 discourages **language tuition** in L4 by relegating it to the Humanities specialisation and timetabling it against history. It also places obstacles to **mother tongue learning** for ONL students, by timetabling ONL against core options in the upper levels. The number of periods of compulsory **science education** is increased from 3 to 4, which is promising, and it also increases support for **digital competence** by creating a Baccalaureate-level ICT option, though it still leaves most of the students without basic knowledge. **Social and civic competences** might be supported by the new S6 and S7 Religion and Ethics course, though this is still unclear. The change in the status of History and the inclusion of Human Sciences (also with unclear content) may have bearing on this as well. The **sense of initiative and entrepreneurship** should be enhanced by the Cross Curricular Project as well as perhaps **learning to learn**. **Arts and Music** courses are no longer available to all students in the last two years and the decreased availability of L4 may also lead to decreased cultural awareness and expression, as might the restrictions placed on Philosophy and History options.

Again, the INTERPARENTS proposal mitigates some of the worst effects of the working group proposal while retaining its better elements when possible. Though obstacles to **mother tongue learning** are still present, the courses clashing with ONL are not main options. Furthermore, **tuition in a second and third foreign language** is supported as a result of the reduction of compulsory 2-period options compared with the baseline. The proposal retains the minimum number of **science courses** as 2 periods, and so may be seen as weaker than the working group proposal in this aspect, but the added flexibility in the timetable may compensate as it will enable non-science specialists to enroll in science courses. Similar to the working group proposal, ICT is included as a Baccalaureate option, but most students are left without basic knowledge. **Social and civic competences** may be supported by the Religion course, but this is now optional. History, on the other hand, is a required course in the INTERPARENTS proposal. As with the working group proposal, the **sense of initiative and entrepreneurship** should be enhanced by the Cross Curricular Project, which might also support **learning to learn**. **Arts and Music** courses are available to all students in the last two years as is L4. These could all be said to increase general cultural awareness, as might the History requirement.

5.9 Elements of discrimination against minority groups, by language section and in particular small language sections

In the current system the problem remains that options available to small sections are more restricted and that these students often have to receive tuition grouped with other languages or

levels or with a reduced number of teaching hours.⁷³ It is important to note that for these students vehicular languages are not used as part of a coherent programme of language education but for financial and logistic expediency, with little or no extra support. Neither of the proposals offers substantial innovation in this area, beyond an attempt to increase course size in general and to offer a structure which might be a step toward regularising options available to all.

5.10. Elements of discrimination against students without language sections or from countries with more than one national language

SWALS students, if Category I⁷⁴, currently receive limited tuition in their dominant language, but they are assimilated into a vehicular language section for all other subjects. Neither of the alternatives offers substantial innovation in this area.

ONL students suffer a certain amount of discrimination in the lower levels as they have extra coursework and their courses are not regularly timetabled. In S6 and S7, ONL clashes with L4. Nevertheless, there is an effort made to support ONL students. The working group proposal clearly decreases the possibility for ONL students in S6 and S7, as ONL clashes with Chemistry, History and ICT. In practice, many students would be obliged to renounce to ONL tuition in S6 and S7, which might limit possibilities for university access in certain member states. The INTERPARENTS proposal also places limitations on ONL students. In this case, the limitations are not on core subjects, but the advanced modules and Lab courses.

5.11. Elements of discrimination against gender

In the current system and the INTERPARENTS proposal, it is difficult for INTERPARENTS to identify any obvious gender discrimination. With regard to the working group proposal, it has been observed that a rigid structure of specialisations may prevent female students from choosing Scientific subjects. This would be worth further exploration by the IOE team.⁷⁵

5.12. Elements of discrimination against those with learning disabilities

In the current system, there are specific regulations to address students with learning disabilities. However support has decreased due to economic constraints. The rigorous academic focus of the current system and heavy load of courses may not suit students with disabilities. Neither the working group nor the INTERPARENTS proposal specifically addresses students with learning disabilities, though it may be argued that the flexibility of the Interparents proposal, like the current system, might allow students to better adapt a course of study to their talents and interests.

5.13. Elements of discrimination against those at smaller schools

Recent statistics provided by the Secretary General reveal that the size of S6 and S7 vary markedly from school to school.⁷⁶

⁷³ Document 2011-01-D-33-en-9.

⁷⁴ i.e. children of staff of the European Institutions, the presence of whom in sufficient numbers (as defined in the Gaignage criteria) is the prerequisite for creation of all the schools in the European School system.

⁷⁵ INTERPARENTS recalls the EU's commitment to STEM subjects in the light of the IOE team's allusion to gendered patterns in science education (Inception Report p. 47). Is there evidence that girls are less likely to choose science if the choice is all or nothing (i.e. if there is no option to choose just one or two science subjects)?

⁷⁶ Statistics tend to vary slightly during the school year because of the high mobility of students. For long-term official statistics, a good reference are the reports of the Baccalaureate.

Pupil Population

School	S6	S7	Average ⁷⁷
Alicante	75	83	79
Bergen	44	40	42
Brussels I	272	241	256.5
Brussels II	251	245	248
Brussels III	249	251	250
Culham	49	46	47.5
Frankfurt	88	89	88.5
Karlsruhe	73	82	77.5
Luxembourg I	185	195	190
Luxembourg II	127	137	132
Mol	60	64	62
Munich	158	138	148
Varese	128	109	118.5

Currently in small schools, many groups have to take options in another language and in many cases options cannot be offered at all. The working group proposal may exacerbate this issue if options needed for particular specialisations are not made available. Below are the options chosen in S6 and S7 for Brussels and Luxembourg in 2012 based on data provided in the working group proposal.⁷⁸

		%	Proposed specialisation according to the WG proposal
Chemistry	340	33.73	Science
Biology 4	287	28.47	Science
Physics	204	20.24	Science/Economics
Economics	170	16.87	Economics
History 4	240	23.81	Economics/Humanities
L4	252	25.0	Humanities
Philosophy 4	202	20.04	Humanities
Music	16	1.59	Humanities
L3	560	55.56	All
Geography 4	169	16.77	All
Latin			All
L1+	102	10.12	All
L2+	71	7.04	All
Maths+	99	9.82	All

Thus, popularity of subjects in the proposed specialisations is quite uneven. It is, of course, hard to extrapolate future decisions from past choices. Nevertheless, based on the above data, we may

⁷⁷ Total including all language sections. Brussels IV was excluded because there was no S6 or S7 at the time of data collection.

⁷⁸ 2013-D-01-78 Annexes

expect approximately 50% of the students to choose the Science specialisation, 25% the Economics specialisation and 25% the Humanities specialisation. This opens the question whether in some small schools some of the proposed specialist “filiere” might be cancelled.

Ultimately, this brings up the question of whether a “one-size-fits-all” approach can ultimately be followed. The professional insights and research findings of the evaluation team on this fundamental question are eagerly awaited.

APPENDIX: Clash table: Combination of options in S6-S7 for Brussels and Luxembourg⁷⁹

	Art4	Bio4	Chem	Eco	Geo4	His4	L1A	L2A	L3	L4	Mat3	Mat5	MatA	Phi4	Phy	Mus4
Art 4	104	20	6	4	19	22	17	4	56	18	79	25	3	29	19	2
Bio 4	20	287	132	8	24	40	30	3	92	52	115	172	40	49	95	2
Che	6	132	340	13	26	43	19	7	121	31	64	276	57	14	223	1
Eco	4	8	13	170	46	37	3	9	97	22	90	80	9	16	45	0
Geo	19	24	26	46	169	21	10	13	73	29	106	63	9	20	37	3
His4	22	40	43	37	21	240	30	37	157	69	176	64	3	76	39	5
L1A	17	30	19	3	10	30	102	2	38	32	82	20	0	55	5	4
L2	4	3	7	9	13	37	2	71	45	17	53	18	5	36	11	5
L3	56	92	121	97	73	157	38	45	560	143	350	210	29	101	131	8
L4	18	52	31	22	29	69	32	17	143	252	195	57	5	49	17	0
Mat3	79	115	64	90	106	176	82	53	350	195	514	0	0	155	37	14
Mat5	25	172	276	80	63	64	20	18	210	57	0	494	99	47	307	2
MatA	3	40	57	9	9	3	0	5	29	5	0	99	99	2	91	0
Phi'	29	49	14	16	20	76	55	36	101	49	155	47	2	202	3	6
Phy	19	95	223	45	37	39	5	11	131	17	37	307	91	3	344	1
Mus4	2	2	1	0	3	5	4	5	8	0	14	2	0	6	1	16

⁷⁹ 2013-D-01-78 Annexes. The total number of students was 1 008

Responses from the team of experts of the
Institute of Education to InterParents
Curriculum Spécialisation

Responses to InterParents Curriculum Specialisation

1. Introduction

Curriculum Arrangements refer to the following:

- Subject areas in the EU Schools curriculum.
- Types of boundaries between those subject areas in the EU Schools Curriculum. [For example, Language, Literature, Mathematics, Physics, Biology, Chemistry, Foreign Language, Physical Education, History, Geography, Sociology, Art, Music and Drama is an example of strong boundaries between different subjects. An example of weak boundaries between different subjects is as follows: Language Studies, Science, Mathematics, Humanities, Arts, Physical Education and Foreign Languages. Ten models of curriculum integration can be identified and these range from strongly classified and strongly framed curricula, as in the first approach, to weakly classified and weakly framed networked approaches to curriculum planning, as in the second approach. Between the two extremes: traditional or fragmented *and* networked approaches, there are eight other points on the continuum: connected, nested, sequenced, shared, webbed, threaded, integrated and immersed.]
- The designation of compulsory areas of the curriculum which all students in the EU Schools system would be required to take. And the allocation to each of these areas a weekly timeframe, length of period, and in some cases a different pedagogic mode, i.e. in Science theory-based and practical lessons can be distinguished.
- The designation of optional areas of the curriculum which all students in the EU Schools system would be required to take. And the allocation to each of these areas a weekly timeframe, length of period, and in some cases a different pedagogic mode, i.e. in Science theory-based and practical lessons can be distinguished.
- Decisions being made about streaming and setting processes as they relate to compulsory and optional areas of the EU Schools curriculum. This might mean that different streams or sets of students are created within each school; or a policy is adopted in the schools of mixed ability groupings throughout the timetable.
- Size of classes and pedagogic arrangements in relation to streaming and setting policies, compulsory and optional subjects, *and* strongly classified and framed

curricula or weakly classified and weakly framed networked approaches to curriculum planning.

- The allocation of resources, including teacher resources, in relation to the curriculum issues set out above.
- Centralising and decentralising arrangements within the EU School system, i.e. whether these decisions about the curriculum should apply to all parts of the system or that different types of schools within the system should be allowed to make these curriculum decisions by themselves. In other words, the choice that needs to be made is between curriculum uniformity within the system or diversity of provision within the system.
- The consequences of these types of decisions for the Schools; for example, there are implications of some of these decisions on the make-up of the Baccalaureate. There are also implications with regards to higher education access.

2. Secondary Studies (taken from the InterParents' document)

The organisation of the secondary studies was the object of a broad reform in April 1990. Additional reforms to S1-S3, originally introduced as part of the current proposal for the reorganisation of secondary studies, were implemented starting from September 2014.

Broadly it is worth noting:

- The school day is divided into periods of 45 minutes separated (at minimum) by a break of 5 minutes. The figures presented in the various tables below are the number of 45-minute periods dedicated to each course per week.
- The curricula for the three cycles in secondary comprise, in differing proportions: *core (compulsory) subjects* which are run irrespective of the number of students; for core subjects, non-viable group sizes are managed by grouping students across several levels (so-called “vertical grouping”) or across languages (“horizontal grouping”); if this is not possible teaching hours are reduced according to the following table:

Number of periods/week timetabled	Number of periods to be organised
5 or 6	4
4	3
3	2
2	1 (Religion and Ethics)

A group is not considered viable if it has less than seven pupils for S1 to S5 and less than five for S6 and S7. Optional courses run in a language only if there are a sufficient number of students selecting the option; for optional courses, students are often given the choice to take the course in a vehicular language, if it is offered.

In exceptional circumstances derogations to these rules may be granted. More detail is given at various points below to illustrate how these rules are applied throughout the three secondary cycles. (Some of these are listed in the InterParents document, but are too numerous to be included here.)

Language of Instruction

The number of courses using a student's 'non-dominant' language (i.e. not L1) as the language of instruction increases as the student progresses into secondary. In particular, by the end of the first cycle of secondary and into the second cycle there is a marked increase in the number of courses taught in L2; in the second cycle, options are also added, which likewise increases the chance of students (particularly in smaller language section) taking courses in their L2 or other vehicular language. The progression is meant to follow students' linguistic development, i.e. by S3 students are believed to be equipped with the skills to learn academic subjects in their L2.

In the current structure, students have some degree of personal choice over how much of their secondary education they undertake in their L2 or other languages. However, in most instances they are only able to exercise this control by confining their choice of subject options according to the specified language of instruction. This situation may favour multilingual students, but it can have strong disadvantages for students who are not linguistically able/advanced due to learning difficulties or late entry into the system, quite common given the mobility of the target population between countries and systems of education. There is also a wide range of experiences depending on the size/viability of the language section to which one belongs, with students in smaller sections more often compelled to take courses in vehicular languages.

Current Organisation of Studies in S1-S3

The lower cycle of the secondary programme is organised along the following lines.

Subject	Year 1	Year 2	Year 3
Dominant language (L1)	5	5	4
Mathematics	4	4	4
L2	5	4	4
L3	2	3	3
Physical Education	3	3	3
Religion/Ethics	2	2	2
Human Sciences	3	3	3
Integrated Science	4	4	4
Latin (optional)		2 (optional)	2 (optional)
Art	2	2	2
Music	2	2	2
ICT	1	1	2 (optional)
Total	33	33 or 35	31 or 33

The timetable ranges between 31 and 35 periods per week for these years.

In S1, a second foreign language (L3) is introduced (it previously started in S2). Students are required to take their second foreign language through to S5, after which it becomes an option. Some subjects (Physical Education, Music, ICT and Art) are taught in a working language (WL, one of the three vehicular languages or the HCL, host country language). The practice of teaching these courses in a working language continues throughout the whole of the secondary cycle.

In S2, the timetable remains unchanged in its main features. L2 is decreased by 1 period and L3 increased by the same amount. Students are also given (since September 2014) the option to take 2 periods of Latin. Currently, Latin can be taken as an option through to the Baccalaureate, though many students stop after S3 or S5.

Beginning in S3, Human Sciences and (since September 2014) Religion/Ethics are taught in L2, with some exceptions. The L1 course is decreased by one period to 4 periods. In S3, ICT becomes a 2-period option; students may choose either Latin or ICT but not both. Currently, ICT can be taken as an option through S5 and as a complementary (non-Baccalaureate subject thereafter).

As options, Latin is not guaranteed in S2 or S3 nor ICT in S3; both are offered only when 7 students from a given language section request the course. If a group is not

created, students may be given the choice to take the option in a vehicular language, subject to availability. Religion and ethics are also treated as options in relation to whether particular classes are sufficiently popular to be created but have exceptional rules controlling the creation of groups.

In S1 through S3, eligible nationals may continue to take an ONL for 2 periods a week; Greek students are introduced to Ancient Greek for 2 periods a week. SWALS students are enrolled in their dominant language as L1 and the vehicular language as L2. They take all other classes in their vehicular language; this sets them apart from other students.

Current Organisation of Studies in S4-S5

S4 and S5 fall within the scope of this evaluation and should therefore be examined in more detail. The structure and organisation of studies in the S4 and S5 were approved by the Board of Governors on 18 and 19 December 1979.

Each student must take 31 to 35 periods per week: 27 to 29 periods of core subjects, common to all students, plus 2 to 8 option periods. For the latter, students have to choose from seven subjects. Additionally, eligible nationals may take ONL and Ancient Greek. The same timetable applies in both S4 and S5.

Subject	Number of periods	Language (as a rule)
CORE SUBJECTS		
L1	4	L1
Mathematics	4 or 6	L1
L2	3	L2
L3	3	L3
Physical Education	2	WL (VL/HCL)
Religion/Ethics	1	L2
History	2	L2
Geography	2	L2
Biology	2	L1
Chemistry	2	L1
Physics	2	L1
Total	27 or 29	
OPTIONS		
Economics	4	L2
L4	4	L4
Latin	4	L1
Greek / Ancient Greek	4 (2)	L1
Music	2	WL (VL/HCL)
Art	2	WL (VL/HCL)
ICT	2	WL (VL/HCL)

Beginning in S4, L2 is reduced by one period to 3 periods per week. Physical Education is also reduced from 3 to 2 periods and Religion/Ethics from 2 periods to 1 period (still taught in L2). 3 periods of Human Science is replaced with separate History and Geography courses (also taught in L2) of 2 periods each. 4 periods of Integrated Science is replaced with Biology, Chemistry and Physics of 2 periods each. Latin, L4, Economics and Greek are introduced as 4-period options (with Economics taught in L2 and Latin/Greek in L1), while Music, Art and ICT are introduced as 2-period options (still taught in a working language).

Creation of Courses

As noted above, courses in compulsory subjects are always created, though in some cases students may be vertically or horizontally grouped or course hours reduced. Courses in option subjects are created only when seven students chose them. Where necessary, students who have chosen courses, which might not be created, are invited to choose a subject corresponding to the courses created. Students who have not taken an option in S4 and/or in S5 but wish to take it in S6 and S7 are required to pass an examination before going into S6. The examination covers the necessary prerequisites to keep up successfully with the desired course in S6 and S7. Generally though, a subject lost at S4 is lost a future option. It should be noted that all courses also depend on the successful secondment (or increasingly, local recruitment) of a suitably qualified subject teacher.

Mathematics

Currently, in S4 students choose between a 4-period and 6-period advanced course in mathematics. If students find the 6-period course too difficult, it is possible to drop it for the 4-period course during the first semester (upon approval of the Director and the Class Council). There is another opportunity to move to the basic course during the transition to S5 (again with the approval of the Director and the Class Council). The only additional provision is that when dropping the 6-period course, the minimum number of periods must not fall below 31. This possibility encourages students to try the advanced mathematics without locking them into this choice.

Current Organisation of Studies in S6-S7

The proposals introduced for the reorganisation of the upper secondary cycle (S6-7) were the most far reaching and have thus been the most divisive. These were also the most deeply analysed by the working group, parents and other stakeholders.

Currently, each student must take 31 to 35 periods per week: at least 29 periods must be covered by core subjects and options.

Core Subjects		Options		Complementary Subject
<i>Column 1/periods</i>	<i>Column 2</i>	<i>Column 3</i>	<i>Column 4</i>	<i>Column 5</i>
L1 4	Biology 2	Latin 4	Advanced L1 3	Lab-Physics 2
L2 3	History 2	Greek 4	Advanced L2 3	
Mathematics 3 / 5	Geography 2	Philosophy 4	Advanced Maths 3	Lab-Chem 2
Rel. / Ethics 1	Philosophy 2	L3 4		Lab-Bio 2
Physical Ed. 2		L4 4		Computing 2
		History 4		Elementary Econ 2
		Geography 4		Sociology 2
		Economics 4		Art 2
		Physics 4		Music 2
		Chemistry 4		Sport 2
		Biology 4		
		Art 4		
		Music 4		
Total: 13-15 p.	Total 0-8 p			
	These courses must be taken if not chosen in col. 3. Bio. is compulsory unless Physics , Chem. or Bio. is chosen in col. 3.		Adv. Maths only with 5-period Maths in col. 1.	Art, Music and Economics not allowed if taken in col. 3.

The current structure is organised along the following lines:

- Core subjects must be offered.
- Options and complementary subjects may be offered if there are enough students in a section or school interested. (The minimum number of students required to create a course at this level is five).
- Some subjects are offered at both basic (2 periods, 3 for mathematics) and advanced levels (4 periods, 5 for mathematics). These include: Mathematics, Biology, History, Geography and Philosophy.
- Physics and Chemistry are offered only in 4 periods (no 2-period option is offered).
- It is compulsory to choose History, Geography and Philosophy, either at a basic or a superior level.
- It is compulsory to choose at least one Scientific Subject, i.e. Biology, Physics or

Chemistry.

The possible choices are restricted by the Baccalaureate written and oral exam rules.

3. Subject Areas

There are a number of considerations as to which subjects should be taught in the EU Schools' curriculum:

- Understandings of curricular divisions by parents and, to a lesser extent, students. This means is that if parents hold traditional views about subjects within a curriculum, for example, that there are three separate sciences (i.e. physics, chemistry and biology), then it follows that, as far as they are concerned, a general science curriculum is incomprehensible or reflects a simplification and thus reduction in quality of this important area of the curriculum. It doesn't matter whether parents are correct in their judgements about the subject make-up of the curriculum, their beliefs are significant factors in any decisions made by EU curriculum makers.
- Understandings of curricular divisions held by teachers. This has the same effect as with parents, though teachers approach the problem from a different angle. Their perspective emanates from longstanding and perhaps strongly held beliefs about curricular divisions, their own disciplinary perspective (i.e. their university subject and their pedagogical training in that subject) and the syllabuses and curricula they have been teaching for, in some cases, many years.
- Recommendations for the system from the Board of Governors. These are perhaps best summarised in Article 4 of the Convention: i) the courses of study shall be undertaken in the languages specified in Annex II; ii) certain subjects shall be taught to joint classes of the same level; iii) a particular effort shall be made to give students a thorough knowledge of modern languages; iv) the European dimension shall be developed in the curricula; v) the conscience and convictions of individuals shall be respected; and vi) measures shall be taken to facilitate the reception of children with special educational needs.
- Their capacity to meet the requirements of a competency curriculum, i.e. whether they guarantee in the last two years, leading to the European Baccalaureate, a general education based around the eight key competences for lifelong learning: communication in the mother tongue; communication in foreign languages; mathematical competence and basic competences in science and technology; digital competence; learning to learn; social and civic competences; sense of initiative and entrepreneurship; cultural awareness and expression.

- Access to university. Subjects that fall within traditional disciplinary boundaries are also more readily recognised by a range of university systems. However, universities may recognise these subject boundaries as subject divisions at the point of student entry; but arrange knowledge into subjects that do not conform to these traditional subject boundaries, i.e. only a very few universities divide their science provision into Physics, Chemistry and Biology.
- Avoiding subjects which do not have an overall rationale or are not exemplifications of the eight competences.
- Fit with current or any possible future arrangements for the Baccalaureate.
- Perhaps, most importantly, allow the practical implementation of the curriculum and any reforms that are made to it, i.e. a rationalisation of studies. This raises questions such as: i) Does it make it more difficult to implement the curriculum with a large number of separate subject areas (whether core or optional) or can these be accommodated given the constraints of the curriculum, i.e. time, teacher resource etc.? ii) What are the implications of having large numbers of subject areas for choice? Does this lead to a dilution of subject content within the areas that are chosen?

4. Types of Boundaries between Subject Areas

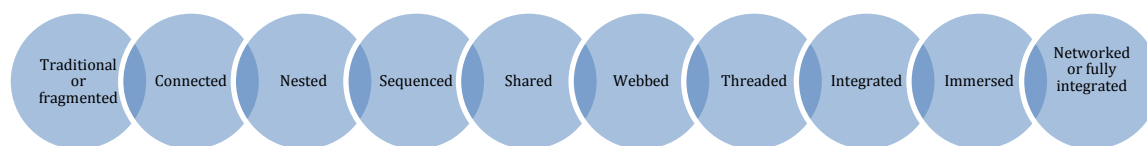
There are ten types of curriculum integration and these range from strongly classified and strongly framed curricula, as in the traditional approach, to weakly classified and weakly framed networked approaches to curriculum planning. Between the two extremes: traditional or fragmented *and* networked approaches, eight other points on the continuum: connected, nested, sequenced, shared, webbed, threaded, integrated and immersed, can be identified.

A *fragmented curriculum* has clear boundaries between the different subjects and thus this first type cannot reasonably be thought of as integrated. Subject delineations are clear-cut, they are taught in separate blocks on the timetable, they have their own formal knowledge structure, and content is treated as distinctive and belonging to the specific area. In a *connected curriculum*, reference is made to other content areas, connections are sought and suggestions are made as to how knowledge in another domain can supplement and contribute to knowledge in the specified domain. A *nested curriculum* has some similarities; however, a clear distinction is made between generic skills and specific content. This form is only partially integrated as the content of the subject area is still treated as specific to a curriculum area; however, some common skills are identified which cross the boundaries between different content areas and these are taught across the curriculum.

Further along the continuum, is a reference point, which we might want to describe as *sequenced*. Here deliberately planned topics are arranged to be taught at the same time so that learners moving between different subject areas are taught the same concept albeit that reference is made to a different application and a different discipline in two or more different contexts. For example, statistical probability is taught in Mathematics and in Social Science to reinforce the learning of the concept and to allow students to understand how it can be used in different contexts. The next point on the continuum is where the curriculum can be thought of as *shared*. Here, a particular topic is chosen which has a number of different disciplinary strands. Teachers from different subject disciplines are partnered and teach different aspects of the topic.

A *webbed curriculum* is very much like a shared curriculum; the difference being that there is a greater degree of integration. The curriculum is divided into themes and each theme is treated in a different way by different subject teachers. Thus the integrity of each discipline is retained, and the methods and approaches that are distinctive to these disciplines are taught even if the generic subject matter is the same. Next to it on the continuum is a *threaded curriculum*, where the emphasis is on the process of learning, or on what might be called a meta-theoretical process. The content is subordinated to the teaching of these skills and a curriculum is devised which cuts across the traditional disciplines and focuses on common skills. In this scenario, the traditional and highly classified curriculum is abandoned for a new set of delineations and boundaries, based round different types of skill. Clearly within each discipline in the traditional curriculum skills were featured – these skills however were content specific. A threaded curriculum offers a weakly classified curriculum in that skills and content are treated as separate. A threaded curriculum in turn gives way to an *integrated curriculum*. Here disciplinary boundaries begin to dissolve, as teachers work in inter-disciplinary teams to plan units round overlapping concepts and themes.

Almost at one end of the continuum is *immersion*. Here, integration becomes the responsibility of the learner as they focus on a particular topic or theme, and they borrow from different disciplines ideas, theories, skills and the like. There is little evidence here of any adherence to the methods and protocols embedded within particular disciplines. The disciplines themselves are treated as impediments to the development of knowledge and this strong classification is dissolved. This finally, gives way to a *networked curriculum*. Such an approach requires learners to reorganise relationships of ideas within and between the separate disciplines as well as ideas and learning strategies within and between learners. Each of these forms of integration can be positioned along a continuum (see Figure 1) with a fragmented curriculum being strongly classified and framed, in contrast to networking approaches to curriculum planning which are weakly classified and weakly framed.

Figure 1: Curricular modes in a continuum.

There are implications of adopting either fragmented or networked approaches or taking up positions in between.

A Fragmented or Traditional Approach

- This model fits better with how universities, teacher, parents and students understand curricular divisions at school level;
- It allows choice between subject options whilst retaining core subjects;
- It better reflects current arrangements;
- It can be better accommodated within traditional pedagogic structures.

A Networked Approach

- The shape of the curriculum leading to the acquisition of the eight competences lends itself better to networked approaches to curriculum and pedagogic arrangements;
- It reduces choice because it implies that all aspects of the curriculum have to be covered in the pedagogic arrangements that are put in place;
- It may better reflect the nature of subject knowledge.

5. Designation of Compulsory or Optional Areas

Traditionally courses at this level (i.e. S6 to S7) have been offered as core and elective modules. There are a number of reasons for this. In order to accommodate a broad and comprehensive curriculum conceived in strongly classified and strongly framed terms (i.e. where there are clear boundaries between subject areas), the only possible arrangements that can be made are to cluster some subjects together and offer choices within those clusters. This has the disadvantage that the clusters and the core subject areas, unless they are carefully designed, may not offer a comprehensive coverage of the curriculum and may allow a neglect of some of the key elements of the curriculum. For example, unless the core (which might include compulsory and clusters of optional subjects) is understood as having an overarching rationale, then it may not be fully comprehensive. What this means is that some students, especially those who specialise early, will be taught a narrow curriculum.

These over-arching rationales might include the following.

- All children need to be inducted into forms of knowledge and experience, i.e. logico-mathematical, empirical, interpersonal, moral, aesthetic, religious and philosophical. Each of these forms has distinctive kinds of concepts, and distinctive ways of determining truth from falsehood.
- A second overarching framework is forms of intelligence: language or linguistic intelligence, logical-mathematical analysis, spatial representation, musical analysis, bodily-kinesthetic thinking, interpersonal knowledge and intrapersonal knowledge. The justification for inclusion of these forms of intelligence is psychological; individual learners have cognitive or mental modules, which are separate and act separately from other mental modules. Individuals have been shown to differ in their capacity to perform these different types of operations.
- A third type of justification moves us out of the mind and focuses on the culture we inhabit. All societies have cultural sub-systems: socio-political, economic, communicative, forms of rationality, technological, moral, belief, aesthetic and maturational. And therefore students need to be competent at the end of their period of schooling in all of these areas of knowledge.

Whichever of these is accepted, the important point is that each student is inducted into them in a fully comprehensive way.

In a sense we already have an overarching framework, the eight competences. The rationale, therefore, for any arrangement of compulsory and optional subjects should be these eight competences, leading to the European Baccalaureate: communication in the mother tongue; communication in foreign languages; mathematical competence and basic competences in science and technology; digital competence; learning to learn; social and civic competences; sense of initiative and entrepreneurship; cultural awareness and expression. And what this means is that traditional subject arrangements (core + core optional areas or core + choices from a range of clusters of subjects) may not be the best way of translating the competences into a viable curriculum. The InterParents' suggestions for reforming the curriculum, to a degree, neglect the commitment to a new competences curriculum.

On the other hand, there is always a problem with moving from traditional curriculum arrangements to new ones, because teachers, parents and students have over a period of time developed a familiarity with these arrangements, and change is always unsettling. There is also the issue that changing the arrangements for the curriculum may act to reduce the credibility of the EU Baccalaureate and thus put at risk students' ability to access higher education. Another implication of changing the curriculum arrangements from a system, which allows some choice, to one in which there is little choice, is that this reduced specialisation limits students' capacity to

make choices for themselves and to study subjects and areas of the curriculum which have a special interest for them. This could have a negative effect on the motivation of the students.

6. Streaming and Setting Processes

Often setting and streaming are used as mechanisms in schools to allow for ability grouping and specialisation. Used strictly as a technical term, setting involves students being tested and divided into ability groups for particular subjects. They will then continue through with these groups unless they later are seen to be very much in advance of their group peers, or behind, in which case teachers will arrange for a more appropriate setting for an individual student. With setting, it would be possible to be in, say, a top set for mathematics whilst being in a lower set for, say, science, depending on what was thought to be in the student's best interests. If setting is done sensitively and appropriately, any student in any set should be able to achieve the highest grades; in other words, being in a lower set should not condemn a student to low aspirations, or mean that they need to drop a subject later on. Rather the teaching needs to be arranged to ensure the most appropriate approach for the students at any given time to ensure best results. Streaming, on the other hand, is a technical term often used to describe a system when a student will be in a group for most or all of their subjects, regardless of their individual ability in any particular subject. Whilst being in a consistent peer group has advantages for some students, this model of grouping can be rigid as it does not reflect differential ability and prior attainment in individual subjects.

Both setting and streaming come with a number of inherent, and often erroneous, assumptions and expectations, for example:

1. *Groups are evenly distributed.* In reality, the top and bottom sets or streams may contain statistical outliers, in student ability terms, and the remaining middle groups may largely comprise students of broadly similar ability levels.
2. In order to do something at university, the student needs to have been in a top set for this subject, or a top stream, as this demonstrates their ability level. In reality, if setting is carefully organised, its aim should be to achieve a careful match between teaching style and student, in order to maximise attainment.
3. The set or stream where the student starts determines where he or she finishes. Once again, if ability grouping is carefully practised, the groups should be reviewed regularly (at least annually) to ensure a correct fit. The role of puberty, rate of cognitive development, and effect of peer group relationships needs to be taken into account in the case of all students, to ensure they are well served by

such ability groupings, and there needs to be routine movement up and down accordingly, in consultation with students and parents.

The evidence from primary and secondary education suggests that, overall, structured ability grouping (streaming and setting), of itself, has no positive impact on average attainment, and indeed can widen the gap between low and high attainers. Therefore as a mechanism for ensuring a good match between teacher style and student learning approaches, it may have some validity as an administrative convenience, but should not be relied upon as a mechanism that automatically leads to improved academic attainment for the majority of students.

In terms of the upper secondary curriculum reorganisations proposed by the European Schools, the term ‘streaming’ is being used in a slightly different sense, namely as a kind of ‘pathway’ for different subject areas. This mixing of terms is leading to a degree of confusion. However if we take into account the principles of the Working Group and the Board of Governors (2013-09-D-17-en-5, approved 3, 4 and 5 December 2013), we can see the main issues of concern are rationalising educational programmes, and adjudicating between the conflicting imperatives of relevance, coherence and breadth.

The philosophy of the current proposals requires any curriculum reorganisation to:

- Adapt the studies on offer to *students’ interests* faced with the modern world’s demands. (Relevance)
- Take account of the opening up of the European Schools system and of the recommendations made in the different reports: January 2009 University of Cambridge, recent reports of the Chairmen of the European Baccalaureate Examining Board, May 2011 Cavada report. (Relevance)
- Propose solutions for *greater rationalisation* of courses in the secondary cycle. (Coherence)
- Present students with the *same offer of courses* for all the European Schools and Accredited Schools and bring together in a single document information which is currently to be found in various places. (Coherence)
- Guarantee a general education for all students around the *eight key competences* for lifelong learning. (Breadth)

It is also important to consider how the secondary curriculum can best prepare students for access to further and higher education, as this is an understandable ongoing concern for students and their parents.

7. Curriculum Arrangements

In general terms, smaller classes lead to greater opportunities for students to learn. Further, complicated systems of compulsory and optional subjects lead to variability of class size, variability of what can be offered to students in the various schools and variability in learning opportunities. If the system is simplified, rationalised and standardised across the system, then this rationalisation of studies is likely to lead to efficiencies and to lowering of costs (savings can of course be used elsewhere to improve the learning opportunities of students). However, this rationalisation (involving a set of core subjects, based on the eight competences, with fewer option choices being offered) has other curricular implications, which we have discussed above.

Standardisation across the system is another key issue. This relates to centralising and decentralising arrangements within the EU School system, i.e. whether these decisions about the curriculum should apply to all parts of the system or that different types of schools within the system should be allowed to make these curriculum decisions by themselves. In other words, the choice that needs to be made is between curriculum uniformity within the system or diversity of provision within the system.

8. Ways Forward

The philosophy of the current proposals requires any curriculum reorganisation to be relevant, coherent, comprehensive, and allow breadth of study for all students in the system. We therefore need to consider how a series of pathways might look that offer sufficient coherence, relevance and breadth, whilst still being manageable administratively, and allowing smooth transitions to further and higher education. These are both subject and language oriented. A language pathway tracks different language learning opportunities in L1, L2, L3 and L4 from S4 upwards, so there is a pedagogical logic to the way children are engaging with language within the EU Schools.

Moving forwards, it is possible to conceive of a series of educational pathways for students at the European Schools that allows a degree of semi-specialisation, promoting coherence of study and provision of subject teaching across all schools without sacrificing too much in the way of breadth. This can be combined with the requirement to take one or more optional subject from a local list of offerings, which would allow students to complement, say, a primarily scientifically-orientated programme of study with a study of history or music or an additional language, for example, through what we might call an 'optional course'. An approach such as this is likely to reduce existing coherence problems associated with subject choices at individual schools, as manifested in the yearly 'clash tables', and lead to a greater

degree of predictability and parity across all European Schools, minimising local variations. In Figure 2, therefore, we present our early conceptualisations of what such a pathway system might look like in practice. This is naturally open to discussion, and we anticipate healthy disagreement regarding the titles and contents of pathways, but we hope it gives an indication of a system that:

1. Offers coherence combined with the possibility of selection within a pathway to avoid overloading of timetables.
2. Would be easy to replicate across schools in almost all cases, leading to greater parity of provision.
3. Encourages breadth and flexibility through the provision of optional subjects, for example, allowing students to continue with Science in addition to a strong focus on Arts or Humanities subjects, or vice versa.
4. Encourages independent study and/or interdisciplinary work (extended essay). This does not need to be taught as a separately timetabled subject, but can be seen as part of the final assessment process.
5. Offers scope for students to study on the core programme plus two pathways up to the end of S5, dropping to the core programme plus one pathway during S6 and S7 (some within-pathway selection may be desirable in order to ensure a sensible workload for students).
6. Fits coherently with the expectations of university admissions officers in selective universities.
7. Introduces more sophisticated and appropriate provision for technological and technical subjects, in keeping with developments globally in terms of higher education and employment, and acknowledging the need for high quality technical and vocational education at school level within Europe.

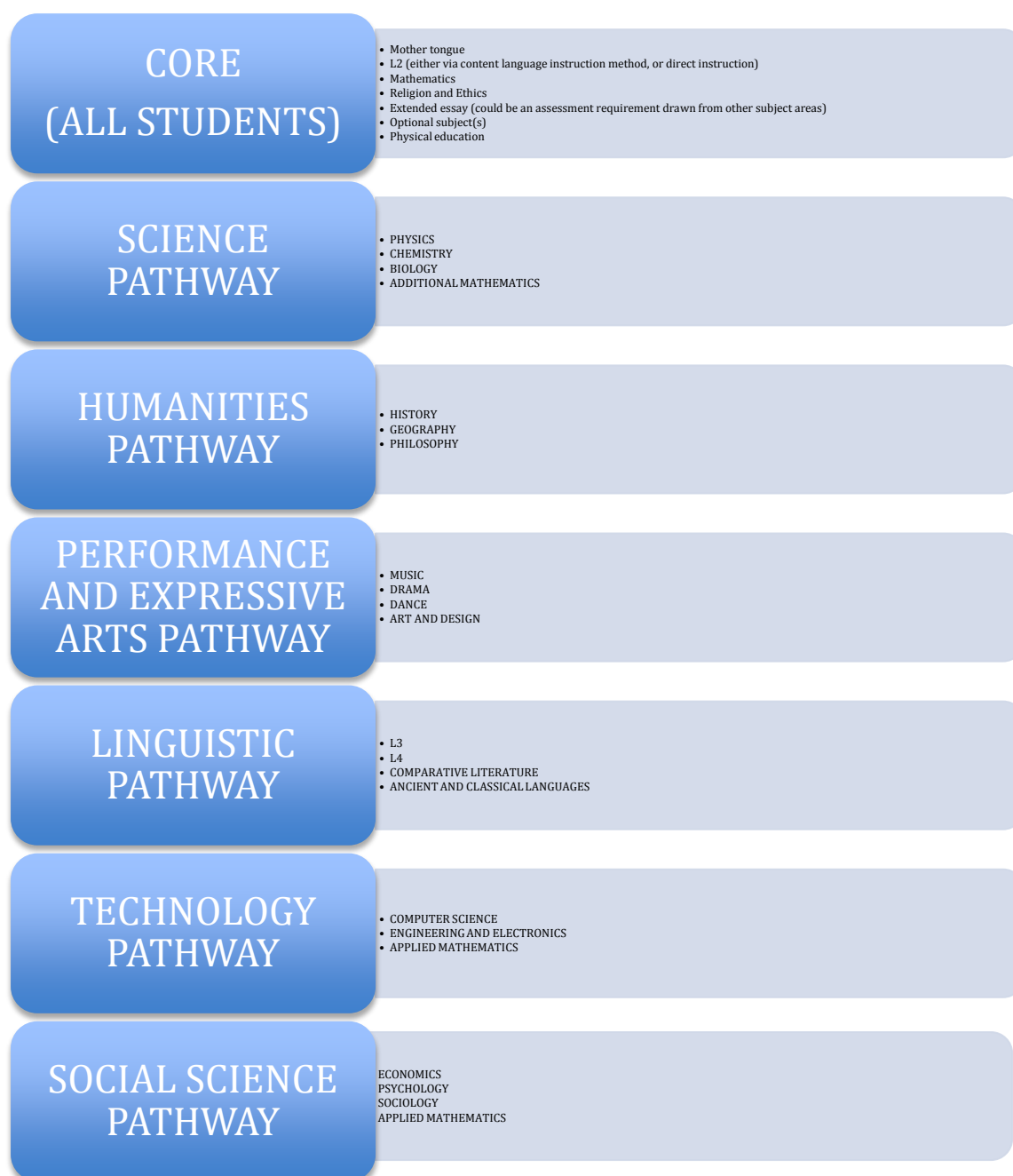


Figure 2: Pathways

In summary, this is a system of holistic assessment that allows for the tracking of academic achievement at different stages in a school career, in combination with personal development, leading to the development of a portfolio-based profile. We believe that something similar to this would be very much in the spirit of the European Schools, which are comprehensive in intake and regard pupils as individuals. A particular advantage would be that it allows for flow in and out of European Schools, accommodating family mobility, and it presents a useful resource should students wish to transfer to, say, a further education college for a highly

vocational education at 16, or return to their home country after a period abroad. It would be relatively straightforward to systematise portfolios across different language sections and types of European School, leading to improved consistency. The portfolio could then form the basis of the awarding of the European Baccalaureate, as academic attainment would already have been tracked as part of the reporting process.

In addition, and in relation to the proposed reorganisation of the curriculum in the InterParents document, we identify here a number of concerns:

1. There is an imbalance of provision evident throughout, instead of additional periods, e.g. for maths+, there is a need to construct a timetable with free periods if necessary, although optional subjects could be increased in order to populate the timetable properly/equally.
2. There is very little PE in upper secondary, given that many children are bussed to and from school, but this is unchallenged in the Interparents document. Are they getting the recommended hour of physical activity each day (perhaps through additional extra-curricular sport)?
3. Interparents suggest that optional subjects can be difficult to provide given the cap on tenure for system-appointed teachers (as opposed to local hires). We are not convinced about the need for a nine year cap. In international schools people build whole careers there, and it would be possible to do this within the EU schools system via a system that allowed sabbaticals in the home country from time to time.
4. There is a need to re-emphasise the considerable scope for developing a technical/vocational strand feeding into technical universities using current resources (Computer Science, Engineering, etc).
5. There might be a need to introduce online options for minority subjects in smaller EU schools where resourcing may be an issue, or co-teach online in real time.
6. There is a lack of Computer Aided Design and Music Technology in all versions of the curriculum, two very profitable industries in Europe.

Three immediate areas of work are:

- Translating the eight competences into viable, inclusive, relevant, comprehensive and broad provision within the EU Schools' curriculum.
- Identifying the structure and form of a pathways curriculum, in relation to both subject and language.

- Reconstructing the new arrangements in the Baccalaureate to meet the demands of changes that have been made and are being made to the curriculum.