



### Competence approaches to MYP contents

The present document contains the main concepts, guidelines and some examples of the competence-based deployment of the International Baccalaureate Middle Years Programme (MYP)

In our surroundings this approach is very infrequent. That is why we have elaborated it in more detail so that its novelty and the differences with the subject-based programme may be clear. Whoever enrolls in this project needs to be aware that it *requires a mentality shift of similar magnitude to the evolution that the world is experiencing*. And, as always in education, those who adapt themselves best and fastest are the pupils. We adults must make a much bigger effort, since ‘we already know what works and what doesn’t’ – or, rather, what *worked* when we were their age... that is, in times that were *too different* from theirs. A new programme, like this, must have iterative adjustments and improvements in order to apply the practical learnings: because the worst mistake is believing that things should not change.

Our School, following its motto of ‘Tradition of progress’, has always strived to be in pedagogical forefront. We pioneered the MYP in Andalusia, in the late 20<sup>th</sup> century, so we have almost twenty-five years of experience in the programme. It is fully proven its feasibility with the more traditional subject-based approach: we have had outstanding results at the university access. Now, *in addition*, we are adapting our educational practices to the conclusions of a wealth of studies and reports, in order to prepare our current students for the lives they will live. That is what this document is about.

**Preliminary remark n. 1.** Obvious as it may be, we need to start by reminding ourselves that competence-*based* education *focuses on* the development of the competences, as opposed to subject-based education. Hence, we adults must unlearn what we have been used to doing for many years, i. e., sticking to a predefined syllabus: and we must always bear in mind that it is competences first. As the old Spanish saying goes, we need to break eggs to make an omelette. And, in the own IBE wording (p. 27 of the document ‘Future competences and the future of the curriculum’), competence is ‘the developmental capacity to *interactively mobilize and ethically use* information, data, knowledge, skills, values, attitudes, and technology *to engage effectively and act* across diverse 21<sup>st</sup> century contexts *to attain* individual, collective, and global good’ (our italicised).

We have a detailed breakdown of the seven broad competences. The UoEs, *and also the disciplinary lessons and other components of the timetable*, are the occasions when Teachers, peers and the very students need to focus on such development and their monitoring (i.e., formatively and summatively assessing) – interactively mobilising, ethically using resources, engaging effectively and acting to attain good.

Teachers plan with rigorous and detail the way they will measure the students’ progress – and the way students will measure it in themselves and in their peers. *Self and peer-assessment have a key role* to foster and record competence development. That is why there is the need to predefine the competences that are going to be assessed (*i. e.*, which behaviours are to be observed), by whom, how and when, so that we may guarantee that their evolution is properly recorded.

Einstein famously said ‘Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid.’ If we develop competences but assess our students through subject exams we will be alienating the system; thus each unit of enquiry, and remaining activities, end with a final product, either tangible or intangible. It is not that the students do not need to acquire knowledge or data: it is that the mere regurgitation does not suffice. A student should be able to efficiently collaborate, effectively discuss the results obtained, appropriately quote the sources, accurately answer questions recalling relevant data, facts, names or laws – the way one does in a research or action project or in a business plan. The Teacher has to coach, advise, suggest sources, flag important aspects and risks, challenge, promote, engage, maintain the requirement for high standards from all applicable points of view, reward. Excellence is not a result: it is a sustained attitude. We don’t ask an architect whether they know by heart Newton’s laws or urban regulation: we ask them for an outstanding building project that suits its purpose.



**Preliminary remark n. 2.** Our approach aims at maximising the use of exponential technologies (those that evolve according to Moore's law). It will most likely be quite more relevant to our students to learn how to code than to do square roots by hand, to fly a drone and use creatively and meaningfully the richness of Google maps and virtual reality than to learn geography based on printed maps. And, again, the way to measure students' mastery of technology is definitely not through pen and paper exams.

We need to be permanently vigilant not to fall back into the traditional approaches – otherwise the pilot and the entire new system are doomed. It is very applicable what the Stanford Professor, and CEO at [ALICE Technologies](#), recently said about their platform: 'one can learn how to use ALICE in one and a half day, maybe two; but the mentality shift takes two, three months'. (Dr. Rene Morkos. YPO private event, May 4th, 2021).

**Preliminary remark n. 3.** We are deploying the IB programmes. We have been told by the Director of IB World Schools that we are in the forefront of international education. As long as we use and give visibility not just to the global contexts, but also to the key and related concepts, we are fulfilling the programme requirements. We have to use our freedom to do what our children need, what will prepare them for the lives *they* will live.

Thus the crucial question is: **what are the significant ways for the students to prove**, during and at the end of the year, **that they interactively mobilise and ethically use knowledge, engaging effectively and acting to attain good?**

The combination of those remarks inevitably results in three guidelines that must be born in mind:

**Guideline n. 1.** Teachers and students must devote time to the development of competences and the acquisition of technologies.

**Guideline n. 2.** We cannot grade the students mainly in terms of what they memorise or the academic exercises they do in traditional exams.

**Guideline n. 3.** We must further sift and reduce the common contents to leave space for personalised learning and exploration.

Yes, students will acquire *fewer factoids and non-contextual data*. We must assume that. And this will lead to increased contextual knowledge and give them the skills to turn them into independent lifelong learners.

The Teacher's role needs to change from source of knowledge to *inspire and guide for deeper and richer understanding* of the topics under study by the student. The following pages present a few theoretical examples of how we are connecting the competence development with the key contents of the programme.

Language acquisition and development (A and B).

According to the IB every Teacher is a language teacher. We must pay attention to the students' oral and written expression in the diverse languages. If students write in a rich and correct way, using each time the appropriate linguistic style and register to the topic; if they express themselves orally with the correct rhythm, tone, prosody; if they are capable of explaining, narrating, debating; if they can use a wide vocabulary and correct grammar, then the linguistic objectives are met. If they do so when deploying meaningful activities, *related to whatever subject*, then we are also developing the competences.

Again we must remember: *interactively mobilise and ethically use knowledge, engaging effectively and acting to attain good*. The aims of language acquisition and development must then be to grow the student's capacity to express as much as possible in the richest and most precise and most accurate possible way.

Language arts.



Essays, theatre, poetry, novels, dialogues, are always related to human themes. Any UoE can be related, more or less directly, to different pieces of world literature. Let's take the tenth United Nations' Sustainable Development Goal, 'Reduced Inequalities'. It could give the occasion to introduce Galdós's *Fortunata y Jacinta*; Zweig's *The Impatience of the Heart* or *The intoxication of Metamorphosis*; many of Balzac's *Human Comedy*; Lafontaine's *Fables*; Espronceda's *Song of the Pirate*; Stowe's *Uncle Tom's Cabin*; Maraini's *Long life of Marianna Ucrìa*; Lope's *El major alcalde, el Rey*; Dicken's *Oliver Twist*; Yourcenar's *Memories of Hadrian*; or even Uderzo's *Astérix* – just to name a few... Having students pick a book of their choice for each UoE, and discuss their findings, and how different times perceive and interpret the same facts, is a different and probably far more efficient way to involve them in reading than the traditional compulsory readings, of which the students go to the internet, find a summary and pass a test.

It is not about every student reading the same books (we never do, as adults), let alone learn titles by heart, but each and every of them relishing literature, enjoying discussions and developing the competence to enrich their lives through reading and to interpret, value and analyse what they read. Maybe it is also about students taking part, on a yearly or bi-yearly basis, in a stage performance.

#### Mathematics.

Any smartphone can solve a handwritten quadratic equation with a maths app or calculate distances, areas and volumes; one can also solve integrals. At the same time we have all kinds sensors which allow us to obtain data in real time. We are surrounded by AI and on the verge of the era of quantum computing. We need to revise very deeply what we do in mathematics, both the contents and the way we approach them, in the light of the needs our students will have.

Regarding 'Reduced Inequalities', again, statistical calculations can be made – whether within the classroom or applied to different parts of the world, or collected via different means; geometric, about home surfaces by quarter, quarters related to population. And if we speak of the future, calculations about solar energy and their contributions could be made – even designing and 3D-printing a paraboloid mirror to measure the temperature reached, or making for communications with Mars, thus learning about conics and its properties, wave intensities, &c.

The key question, once again, is whether students can apply mathematical tools and concepts to do good.

#### Sciences.

Sciences are experimental in the first place – and that has always been a strength in our School. We must assume that *an orderly deployment of the different sciences is incompatible with this programme* for a number of reasons. One, that it will be impossible to do so with the UoEs. Two, that a typical UoE will include a variety of sciences in a 'disorderly' way.

Concerning 'Reduced Inequalities' (and similarities): from biology we have DNA and populations, vital constants and rhythms, body changes, sexuality and reproduction, diet related to income, obtaining data from markets and distributors; from physics we have climate and comfort (temperature scales), noise levels (sound), mass and weight; from chemistry we have materials consumption (metals, oil – and their properties), in general, and matter (elements, compounds, including DNA, which is acidic, as its name says). Students may come up with different ideas on what to research, not everyone needs to do the same thing: personalised learning plans play a role here as well – and, again, the Teacher's mission is to hint, suggest, coach towards a meaningful *and scientifically rigorous* process: approach, experimentation, analysis, representation and conclusions. Our students are capable of conducting a research, no matter their ages: the Teacher is key in helping them succeed, learn, progress.

#### Individuals and Societies.

As said about language arts, everything is related to a point in time and space, to the individual and the society where they live – and to the process through history to reach that point and the perspectives for the future. Official history programmes have normally focussed on the succession of rulers, battles, geographical expansion, with a few hints to arts, society and economy – and almost no



science or philosophy. The nationalistic approach has been pervasive. The individual has received little if any attention. The essential commonality of all human beings, the suffering caused by wars, the lives of people in different societies, the factors behind the rise and decline of cultures and civilisations have not been the focus of programmes.

The fact that we are a product of history and at the same time the creators of the future, that we are only one more link in the progress of humanity -and hence responsible for our legacy, which will be determined by our deeds- is always absent. In our programme we have included the analysis of scenarios and the study of possible futures: because students need to learn that they do have a say in their future and, at the same time, that future is open to different possibilities.

Analysing historical characters from the point of view of different moments in history or different geographies would enlarge the students' views and understanding: how would an Inca or a Hindi tell the stories of Spanish and English empires, how would a Spanish and an English discuss the different approaches each country had to their overseas territories, how would Ashoka discuss with Charles V and Elizabeth I on religion and society, how the African rulers would discuss slavery with European abolitionists, a late 19<sup>th</sup> century native North-American with the US Presidents, a late 19<sup>th</sup> century native Argentinian with the President of the Republic; and, obviously, how different generations and individuals living in different parts of the world interpret our current times according to their own backgrounds and circumstances – something particularly easy with the spread of social networks and videoconferencing. Same applies to different places and periods: what had in common 9<sup>th</sup> century Baghdad, 13<sup>th</sup> century Toledo, 15<sup>th</sup> century Florence, 16<sup>th</sup> century Sevilla and Amsterdam, 17<sup>th</sup> century Paris, 18<sup>th</sup> century Saint Petersburg. What were the roles of Indian rulers, why Japan closed its borders for over two centuries, how China kept its empire for over two millennia and what are the consequences for today's world. Plus, so many other parallelisms and contrasts. And how daily life has been evolving through time – what scientific and technical progress meant for an individual in the different aspects of existence. And, for each and all of those questions, an additional reflection: what are the connections, similarities, differences between those historical circumstances and today's world, what have been their implications for us and what are the learnings we can draw to help us make a better world for ourselves and the future?

Giving the students the opportunity to analyse a variety of aspects in appropriate depth, with due rigour, using a variety of historical and contemporary sources as well as resources from our exceptional library collection, utilising technology to get in touch with individuals in different parts of the world, will allow them to both gain awareness and to get enthused by this domain of knowledge.

Yes, of course a student needs to learn about broad historical periods, events and characters: but not necessarily all of them the same details nor at the same time; and, above all, they need to become passionate about gaining insight and acquire the capacity to use that knowledge to make the world progress – whether in theoretical knowledge, creation of wealth and employment, societal progress or any other form (competences 1, 2, 4, 5, 6, 7). Again, curriculum mapping and individualised learning plans are the key.

#### Visual and performing arts.

An arts teacher conducted an experiment at a clay modelling lesson: a group of students was split in two halves for an assignment. One half was told they would be assessed on the best result they could achieve; the other half was told they would be assessed on the amount of clay they would spend making drafts for their final product. It is easy to guess that the second group got the best average mark.

Humans cannot live without art. An experiment conducted with mice, decades ago, showed that the half litter brought up in an unfavourable environment developed aggressive features by the third generation, whereas the other half, brought up in favourable circumstances, kept friendly.

Art is an innate means of expression for humans, it channels happiness, sadness, protest, beliefs, pride and praise – Sorolla's 'Y dicen que el pescado es caro', Delacroix's 'La Liberté guidant le peuple', Romero Rensendi's 'Las tentaciones de San Jerónimo', Haendel's 'Ode for the Birthday of Queen Anne', De L'isle's 'La Marseillaise', Beethoven's 'Heroic', Beaumarchais's 'Le mariage the Figaro', Moctezuma's feather headdress, Angkor Wat... Art evolves, new forms are created, and philosophical



conceptions are embedded in it. Kant put forward the idea of art as the expression of genius; but through millennia it was the result of applying strict, even if changing rules – and thus the succession of styles.

Students need to be able to understand art and express themselves through arts languages and means. They need to relate arts to the other aspects of their lives as well as to the enquiry topics about which they are learning: both concerning artworks from different times and places by a variety of artists and their own artistic expression. They need to experience and act the power of art in society. And they need to use it to do good – both through the classical and the contemporary means, of course.

#### Technology design.

The structure and approach of the UoEs explicitly implements the design cycle. The risk involved is limiting it to the themes under study and not applying it specifically to technological design – a minor risk, of course, but to be avoided. Identifying a problem which can be tackled through technology and devising a solution to it through the design cycle is one step further than applying design thinking to the UoE. It has to be ‘a process within the process’, a technology design cycle within the UoE design thinking cycle.

#### Physical education.

In the broadest sense, physical education is related to wellbeing and mastery of the body, since we are physical beings. Students need to develop strength, equilibrium, agility, grace; they need to acquire physical skills, in daily life as well as demanding activities; they need to gain self-awareness and self-control. In that respect mindfulness should be considered part of the subject, as well as the acquisition of healthy habits, self-monitoring and informed decision-making.

Considerations about self and the environment (in its broadest sense), responsible lifestyle and citizenship, how one’s decisions impact others and the planet, how the approaches have evolved through time and space depending on the economic, cultural, societal and cultural circumstances, how to optimise the consumption of energy and matter for the personal and common good should be a constant topic for discussion and exploration.

This is the competence based MYP. We face it with as much excitement as all our programmes, convinced that it will contribute even more to our students’ progress.

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