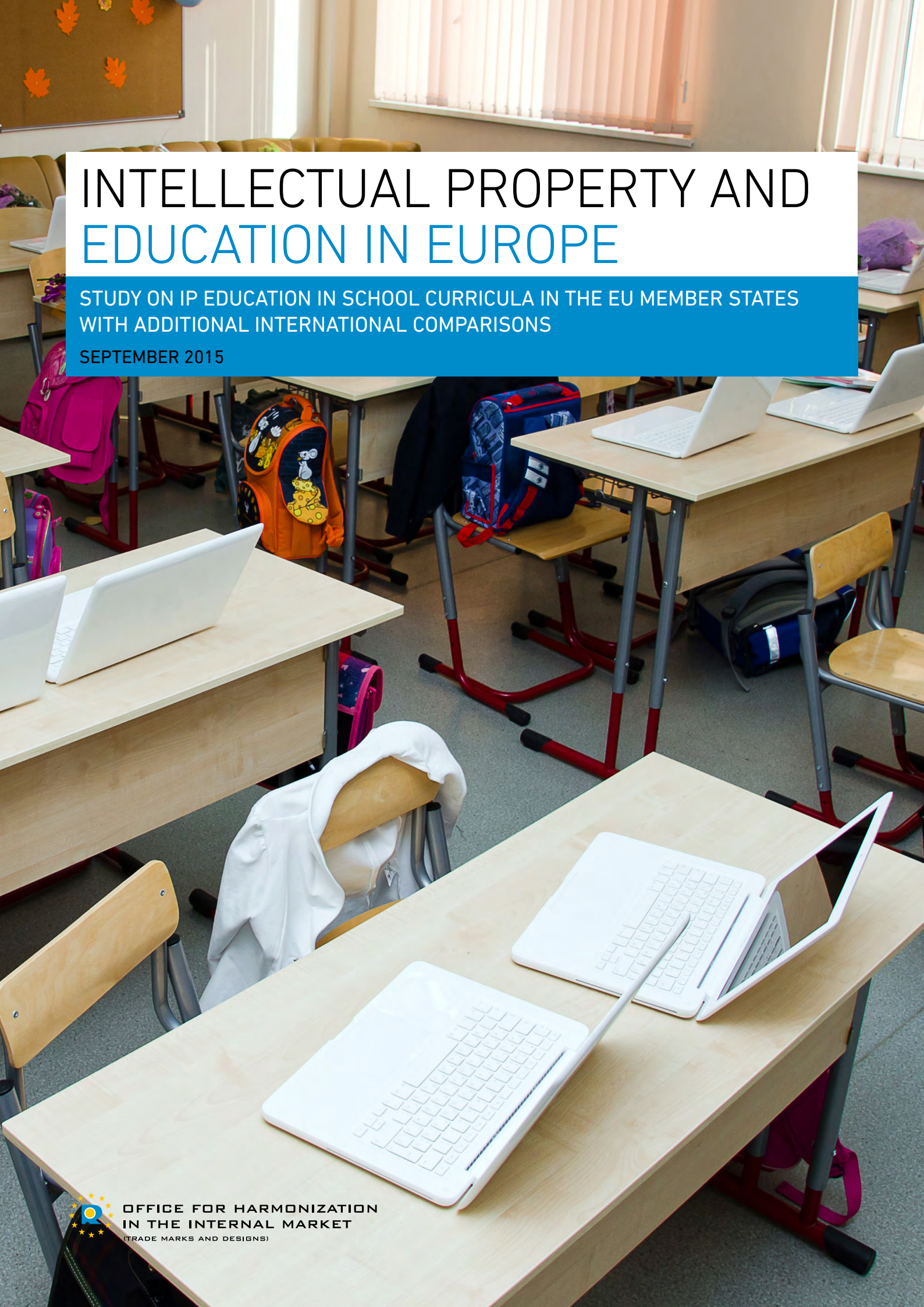

INTELLECTUAL PROPERTY AND EDUCATION IN EUROPE

STUDY ON IP EDUCATION IN SCHOOL CURRICULA IN THE EU MEMBER STATES WITH ADDITIONAL INTERNATIONAL COMPARISONS

SEPTEMBER 2015

OFFICE FOR HARMONIZATION
IN THE INTERNAL MARKET
(TRADE MARKS AND DESIGNS)

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STUDY

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Study on IP Education in school curricula in the EU Member States with additional international comparisons

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FOREWORD

FOREWORD

The economic importance of intellectual property is gaining greater recognition and attention. One example is the study on the contribution to economic performance and employment of intellectual property rights intensive industries which was carried out jointly by OHIM, through the Observatory on Infringements of Intellectual Property Rights, and the EPO. Another is the survey carried out on behalf of OHIM on the perception of European citizens with respect to intellectual property, which shows that a significant proportion of EU citizens are prepared to justify infringements of IP rights under certain circumstances.

The gap between perceptions and the evidence about the importance of IP rights is particularly worrying when it comes to young people. One finding of the survey was that between 35% and 50% of young Europeans can display attitudes which favour counterfeiting or illegal downloading.

Steps need to be taken to address this. Education would seem to be one of a number of ways of tackling the issue. It was for this reason that OHIM, through the Observatory, commissioned this mapping study on intellectual property education in school curricula in EU Member States to see how IP education is carried out and what could be done to improve it.

IP education means the skills and competences that young people can be expected to acquire in the classroom that enable them to become familiar with intellectual property, understand its potential to generate income and economic growth and lead them to respect intellectual property rights, whether their own or those of others.

The study suggests that the best approach to intellectual property education is to ensure that intellectual property skills and competences are, in the terms used by the study "transverse competences" or, more simply, competences that can be used across different subjects in a curriculum. It also gives examples of five learning areas selected from the eight key competencies chosen by the EU which define the main priorities for education in today´s modern economies and that provide opportunities to introduce IP in the curriculum.

This approach, which seeks to embed IP skills and competences naturally into everyday education, looks attractive. Implementing it will not be easy. The study provides examples from the European Union and elsewhere from which suitable models can be adapted to fit in with the diverse nature of the educational systems in the 28 Member States. It notes interestingly that the most innovative non-EU countries/regions already teach IP at the primary level and place IP more commonly as a part of citizenship education (focusing on morals and ethics), whereas in the EU, IP is addressed in more specialised ICT related subjects and is being taught much later in the educational cycle. This raises the question of which educational path the EU should follow in the future – especially given the on-going discussion on the Digital Single Market, where one of the EC´s objectives is to boost digital skills and learning. The study also clearly indicates that copyright is by far most frequently mentioned in EU curricula, leaving other IP rights far behind. It shows that much more needs to be done to rebalance this.

This study has been designed to assist educational policymakers in Member States to meet the challenge of the digital era. As a consequence of the findings, the Office is prepared to set up a specialised network of education experts and stakeholders to help them coordinate and develop appropriate, modern resources and programmes for pupils and teachers, based on the material acquired in the study. These would include for example videos, games, tutorials, e-learning portals and other online content, which could be disseminated through the schools with the aim of helping future generations understand the central role that IP plays in the economy and society.

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

WIPO defines IP education as a process that should support pupils and children in becoming IP creators in the future: "their creativity should be developed, and they should be educated to respect the IP rights of others".[1]

The objective of the research "Intellectual Property and Education in Europe" was to analyse how Intellectual Property Rights (IPR)[2] – notably trade marks, designs, patents and copyright – and Intellectual Property (IP) related issues such as ownership, authorship, originality, licensing, confidentiality, trade secrets and branding are being taught in primary and secondary schools (both general and vocational) in the 28 EU Member States (MS). Additionally, connections between IP education and five specific learning areas considered essential for enhancing creativity, innovation and social values were studied in depth:


Entrepreneurship education


Citizenship education


Arts education


Information and Communications Technology (ICT) education


Science, Technology, Engineering and Maths (STEM) education

The results were benchmarked with the analysis of the third countries, which, following the Global Innovation Index 2014,[3] were ranked the most innovative: Switzerland, the U.S., Singapore and Hong Kong, with the aim of contrasting the differences.

The study's main information sources were the official educational curricula, guidelines and recommendations analysed and crosschecked by national researchers and completed by contributions from the Ministries of Education based on questionnaires. From federal countries, a number of landers, states, or language regions were chosen for assessment, based on pre-defined criteria. Both public and private education sectors were analysed during the 2012/2013 academic year, covering age groups from 4 to 18 years old.

IP IS NOT A STAND-ALONE SUBJECT AND IS INTEGRATED IN DIFFERENT SUBJECT AREAS THROUGHOUT ALL EDUCATIONAL LEVELS

The results of the study show that in the EU and non-EU countries/regions analysed, no specific stand-alone IP subject or comprehensive IP education programme exists in the current official curricula. Nevertheless, IP and IP-related themes are integrated into one or several subjects as a cross-curricular subject throughout all education levels. Emphasis on a specific right varies according to its specificities, complexity and relevance for different age groups.

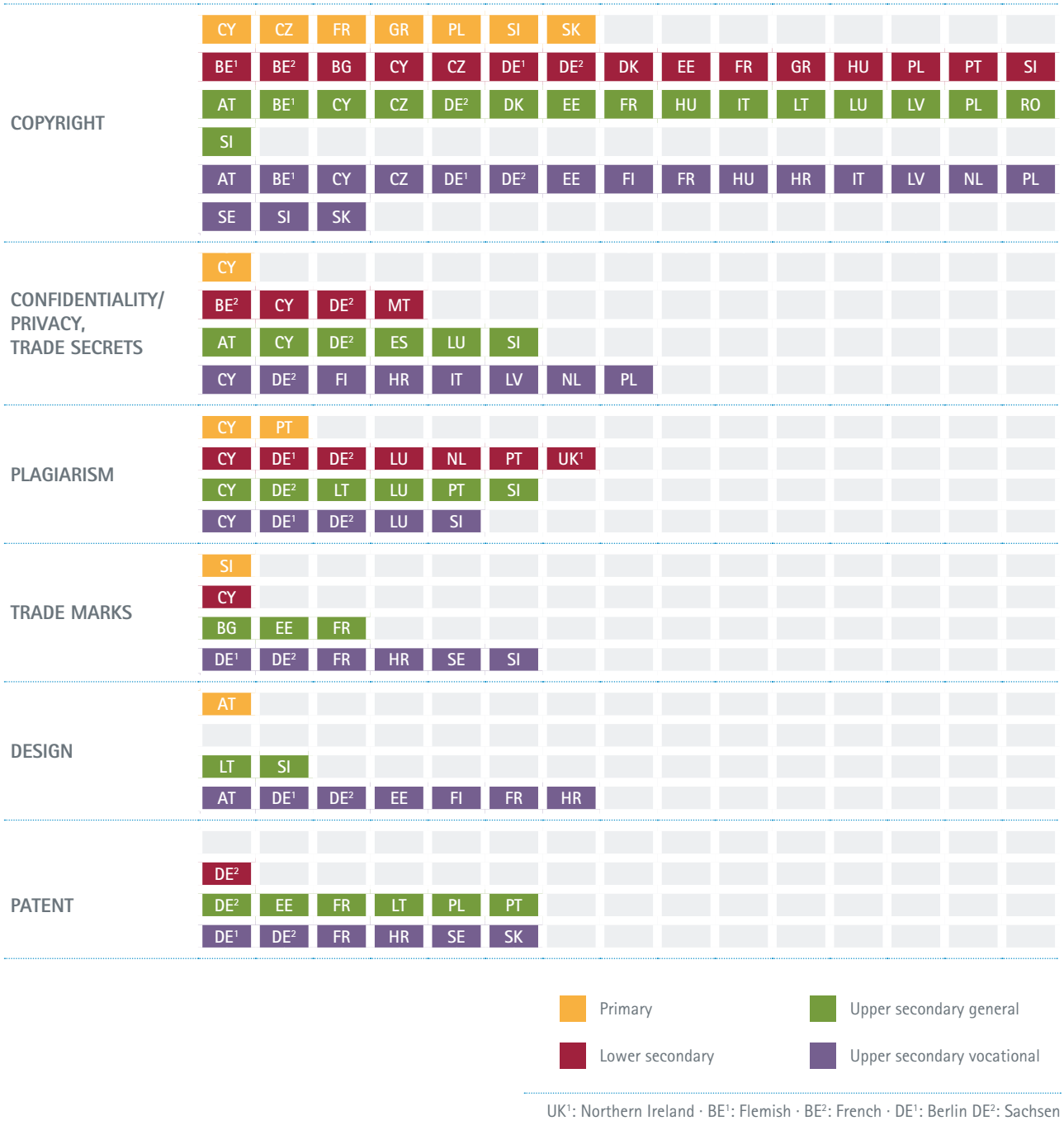
[1] Inoue, T., INPIT, WIPO Regional Workshop on Effective Management of Intellectual Property Academies: Challenges and Responses, Jakarta, Feb. 2 to 4, 2010.

[2] The present report was not drafted by legal specialists and the definitions used are only meant to explain what IP is about, not to precisely define each right or each category of rights with full legal accuracy.

[3] Global Innovation Index 2014: https://www.globalinnovationindex.org/userfiles/file/reportpdf/gii-2014-v5.pdf

In both the EU and non-EU countries/regions analysed, **copyright constitutes the most commonly referenced IP right** within the official school curricula, whereas design, patent and trade marks are less apparent. In non-EU countries/regions, trade marks are referenced only at secondary levels.

Aspects of IP mentioned in the curricula of 33 EU countries/regions

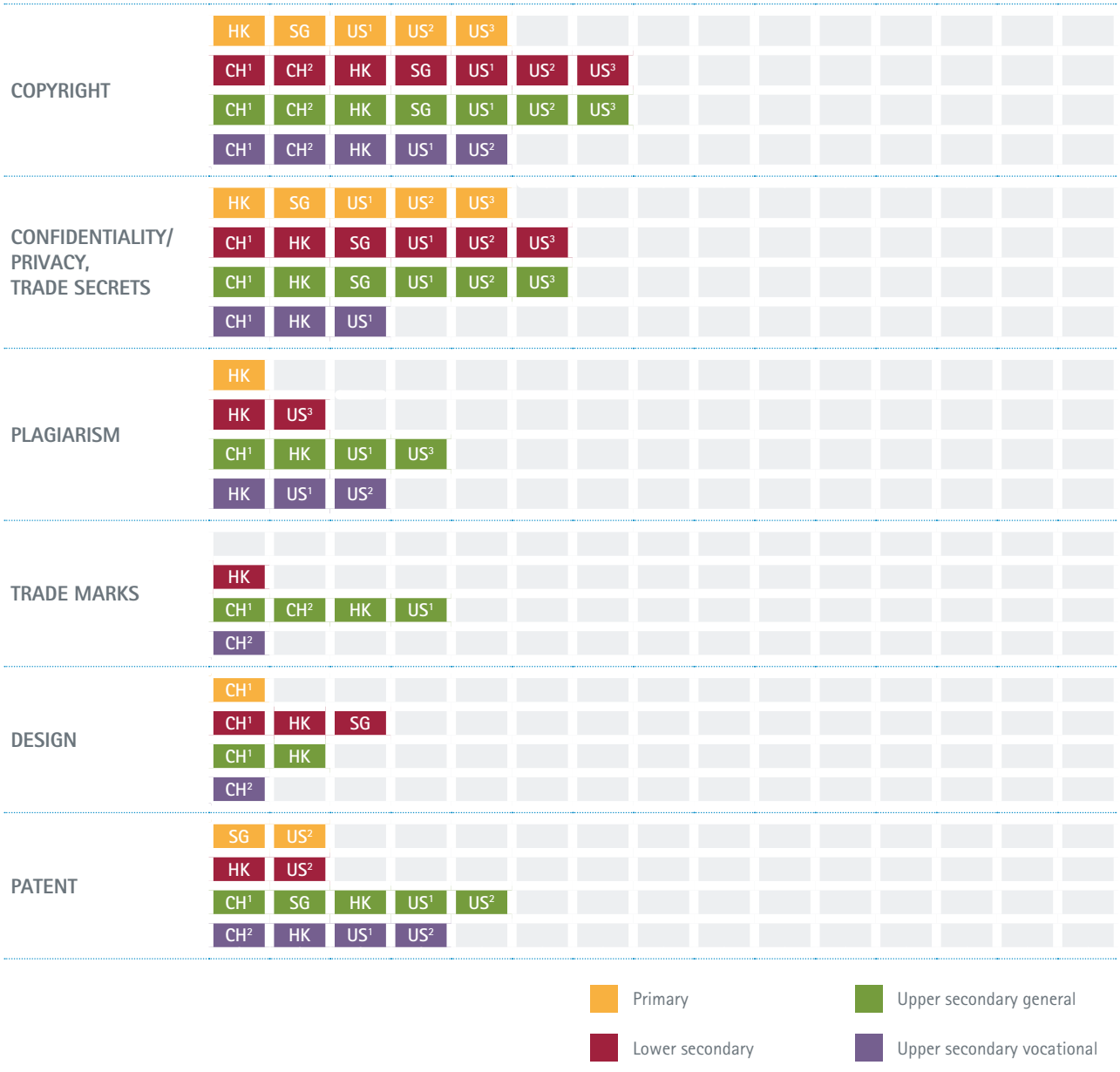


UK¹: Northern Ireland · BE¹: Flemish · BE²: French · DE¹: Berlin DE²: Sachsen

In both EU and non-EU countries/regions, IP and IP-related topics are predominantly addressed in classes linked to Information and Communication Technology (ICT), visual and performing arts classes, and in music classes. Business, law and marketing classes also offer the opportunity to discuss different IP rights, underlining their economic importance in generating value and wealth. Furthermore, under the general subject of rights and obligations, IP and IP-related issues are taught in citizenship classes.

The overall assessment of the most frequent referencing of IP rights per education level shows that **the ratio of teaching IP rights at primary level is higher in non-EU countries than in the EU countries/regions where they are taught mostly at upper secondary vocational level.** The exception to this is trade marks, which are not taught in the non-EU countries/regions at primary level.

Aspects of IP mentioned in the curricula of the non-EU countries/regions



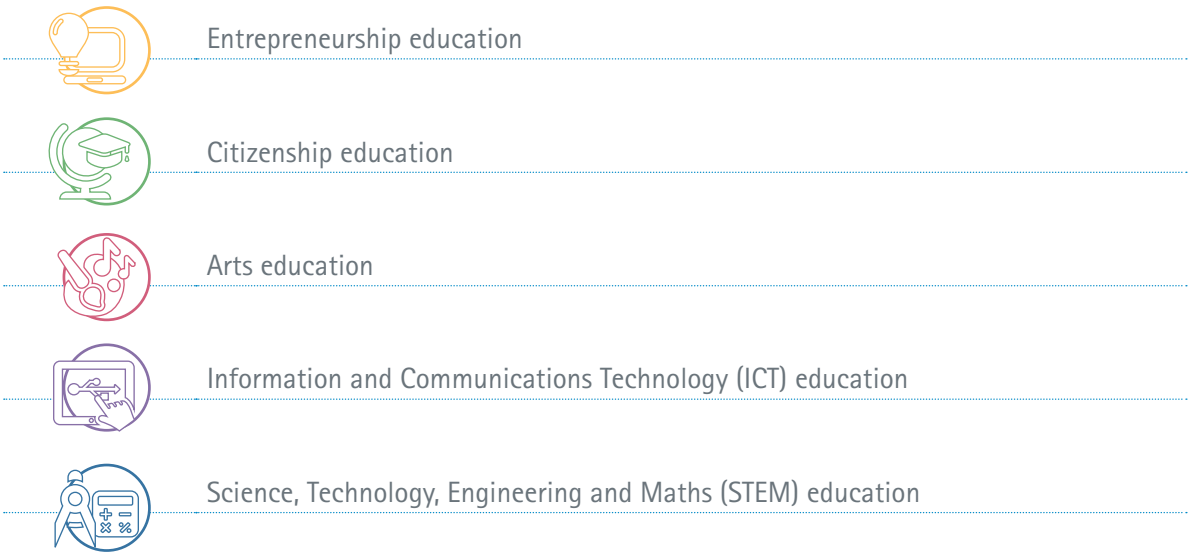
CH¹: CH (DE) Switzerland (German speaking) · CH²: CH (FR) Switzerland (French speaking)
HK: Hong Kong · SG: Singapore · US¹: CA – California · US²: MA- Massachusetts · US³: WA – Washington

More specifically, in Singapore and Hong Kong, IP education is highly focused on core civic and moral values through character and citizenship education (CCE). Intellectual property education is usually designed to strike a balance between rights and responsibilities, and it is also worth noting that **the non-EU countries/regions more frequently cover the issue of infringement than their EU counterparts.**

The German region of Sachsen and Cyprus seem to have the highest number of references to the teaching of IP rights and IP-related topics through their official curricula, followed by Slovenia, France, Berlin-Brandenburg, Poland and Estonia, and Portugal. Among the non-EU countries and regions covered, Hong Kong has the highest number of IP references in its official curricula across all education levels, followed by California, Massachusetts (United States) and the German speaking region of Switzerland.

FIVE LEARNING AREAS PROVIDE OPPORTUNITIES TO INTRODUCE IP IN THE CURRICULUM

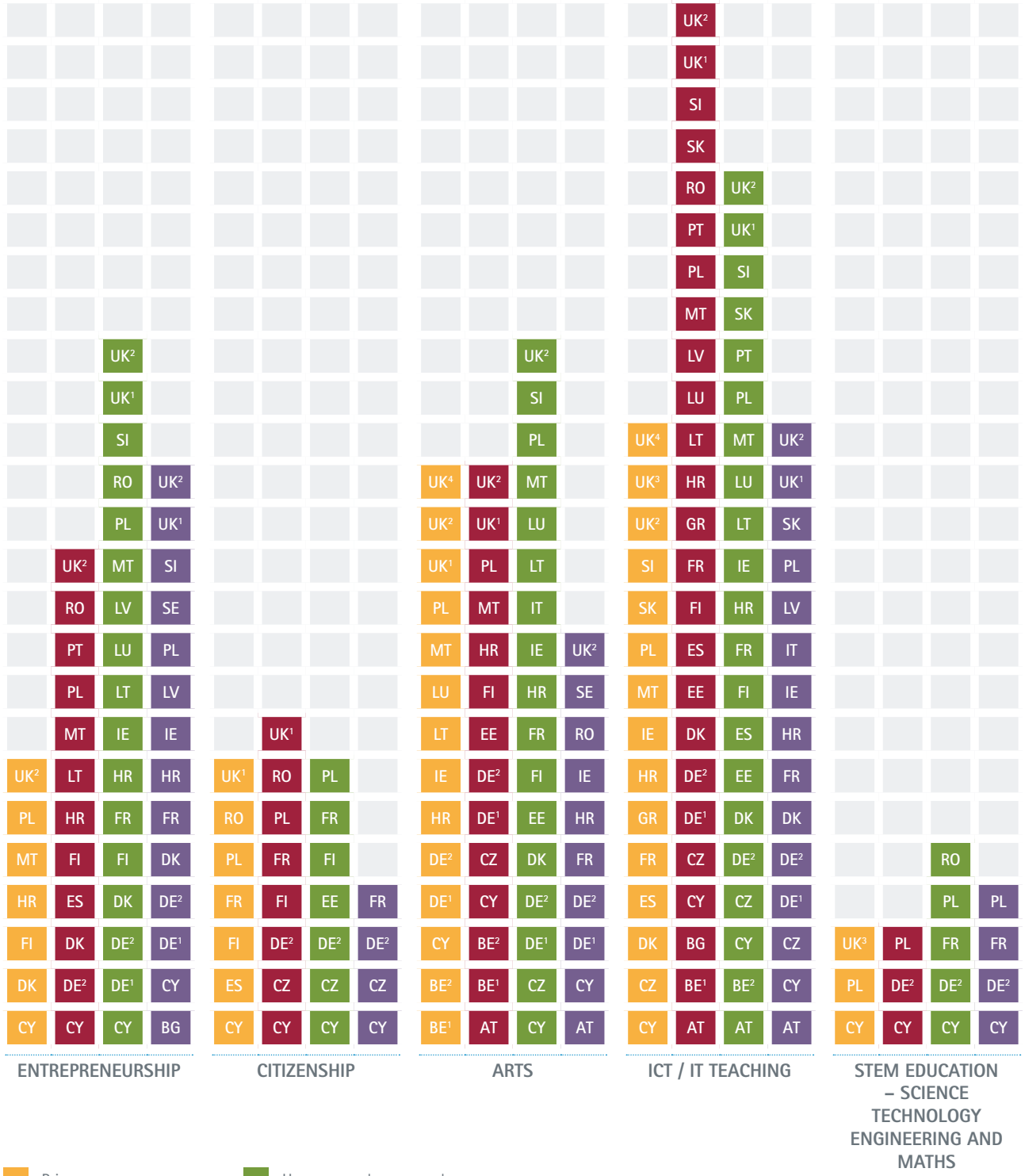
The study also focused on existing connections between IP education and five specific learning areas that are considered essential for enhancing creativity, innovation and social values, and which are considered highly relevant for IP education based on Education Ministries' responses. These are:



Researchers analysed which of these key five learning areas include IP mentions and at which educational level.

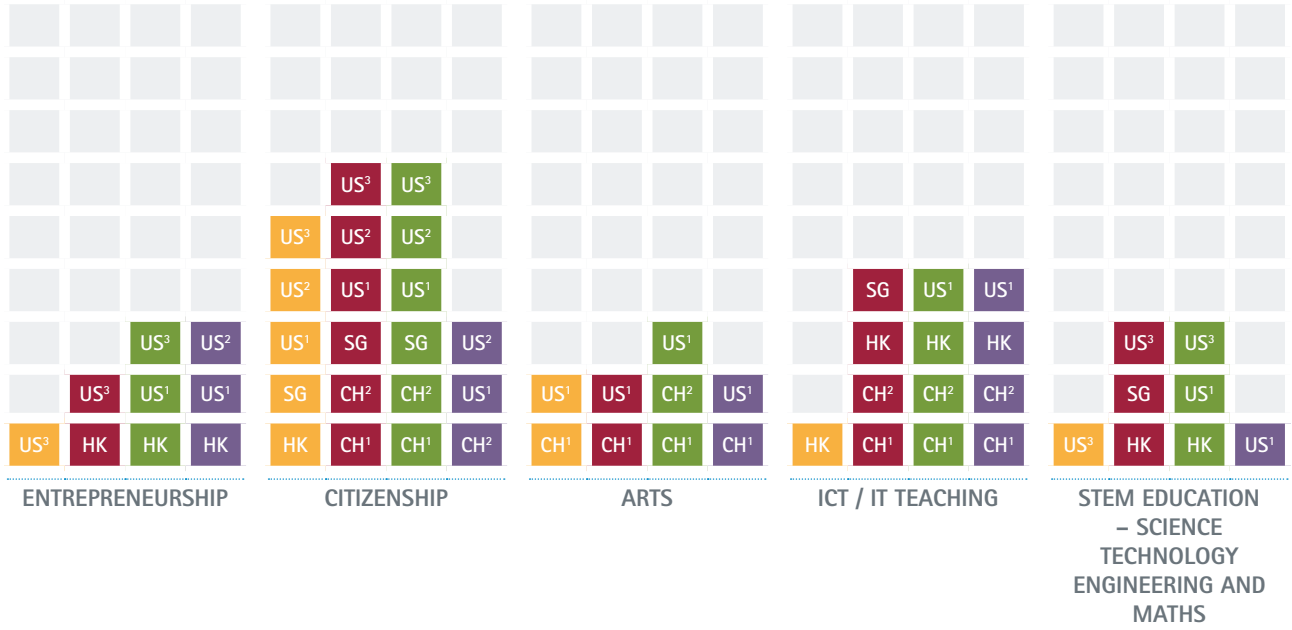
The results show that the situation in the EU and non-EU countries/regions varies significantly. **Whereas in the EU, IP education is mostly integrated into ICT-related subjects, followed by arts and entrepreneurship related subjects, in the non-EU countries/regions, it is primarily integrated into citizenship education, followed by ICT-related subjects.**

IP connected learning areas mentioned in the curricula of 33 EU countries/regions



UK[1]: Northern Ireland · UK[2]: Scotland · UK[3]: Wales · UK[4]: England · DE[1]: Berlin · DE[2]: Sachsen · BE[1]: Flemish · BE[2]: French

IP connected learning areas mentioned in the curricula of the non-EU countries



CH[1]: CH (DE) Switzerland (German speaking) · CH[2]: CH (FR) Switzerland (French speaking)
HK: Hong Kong · SG: Singapore · US[1]: CA – California · US[2]: MA- Massachusetts · US[3]: WA – Washington

GOOD PRACTICES SERVE TO INTEGRATE IP EDUCATION AND ARE WORTH ENCOURAGING

Beside its analysis of the curricula, the report reveals many examples of good practice in IP education carried out in schools. Good practices can be defined here as any collaboration practice between the stakeholders. These can be categorised as follows:

- **IP education within the curricula.**
- **Extra-curricular IP education, invariably in private–public collaborations between stakeholders and Ministries of Education or Culture.**

The study showed that good practices within the existing school curricula in the countries covered are almost always carried out by or in cooperation with public authorities, including Ministries of Education and other Ministries, schools and public libraries. **The majority of good practices identified within the curricula concentrate on IP aspects such as copyright, but some also connect with the topics of innovation, inventions and entrepreneurship.** Other exemplary projects within the school curricula exist in ICT, data management and online behaviour.

Many extra-curricular good practices are carried out exclusively by private stakeholders, who come mainly from the creative industries, and work with artists, writers and creative professionals, and their associated professional organisations and networks. Furthermore, teacher associations, private companies and foundations play a role, especially in the IP-related topics of entrepreneurship and ICT. Consumer associations are also active in this area. Private–public partnerships identified in extra-curricular good practices work especially well together regarding the topics of IP, IP protection and IP infringements, creative industries, IP and copyright, creativity, innovation, inventions and entrepreneurship, and civic education, as well as copyright in education.

LOOKING AHEAD TOWARDS SUPPORTING IP EDUCATION IN SCHOOLS

This study gives a general overview of IP education in the EU and in the selected most innovative non-EU countries/regions by providing examples from which suitable models can be adapted to suit the diverse nature of the educational systems analysed.

The report reveals that plenty of activities exist that aim to teach IP rights to young people. However, much remains to be done. Governments, educators and stakeholders have a key role in this process, by working together and exchanging good practices to find effective and sustainable solutions for IP education. Some of these good practices are highlighted in the report.

IP is more than just a subject and appears to have the potential to be integrated into mainstream subjects at all educational levels. In fact, IP education can easily be adapted to cross-curricular teaching. Moreover, curriculum reforms that focus on new cross-cutting competencies to boost creativity and innovation, and which were analysed in the study, will create new opportunities for better integration of IP education. The provision of relevant and up-to-date professional resources that empower teachers to teach IP according to students' ages and at the same time appeal to pupils of all levels is crucial. The study gives examples of topics and subjects that would benefit from greater resources.

This report, with all country profiles presented in the Annexes, is one of the various steps aiming to embed IP skills and competencies into the fabric of everyday education. It is hoped that it will encourage stakeholders to collaborate together in helping schools and educational communities throughout Europe to foster creativity, innovation and entrepreneurship, and in turn, to generate better understanding of and respect for intellectual property. OHIM will be actively collaborating in this process.

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INTRODUCTION

INTRODUCTION

In today's knowledge economy and globalised world, innovation and competitive advantage are key to ensuring worldwide economic growth. As manufacturing jobs have shifted increasingly to emerging economies, the contribution of the knowledge economy to European wealth and employment continues to grow. In September 2013, a joint report by the European Union's Office for Harmonization in the Internal Market (OHIM) and the European Patent Office (EPO) found that 26% of EU employment and 39% of its GDP was generated by intellectual property rights-intensive industries.[4]

Intellectual property is often considered as a tool – and not as an end in itself – that can lead to financial, social or/and cultural benefits.

DEFINITION OF IP

According to the WIPO,[5] intellectual property refers to creations of the mind: inventions, literary and artistic works and symbols, names and images used in commerce.

It can be divided into the following categories:

- **Industrial property:** inventions (patents), trade marks, industrial designs, new varieties of plants and geographic indications of origin.
- **Artistic work protected by copyright:** original literary and artistic works, music, television broadcasting, software, databases, architectural designs, advertising creations and multimedia.
- **Commercial strategies:** trade secrets, know-how, confidentiality agreements or rapid production.[6]

Patents, registered design rights and trade marks give the owner the right to stop others using their IP without permission.

Copyright and unregistered design rights allow the owner to stop others *copying* without permission, but they do not protect the idea behind a work.

Geographical indication is a name or sign used on products, which originate from a specific geographical location or origin.

Confidentiality, trade secrets, privacy, reputation and image rights can be associated with the creation of intellectual property, and may be referred to as 'quasi intellectual property'.

[4] IP rights-intensive industries are defined as those having an above-average use of IPR per employee. According to the report cited, it should be noted that all industries use IP rights to some extent. Thus, by focusing only on the IPR-intensive industries, this study might understate the real contribution of IP rights to the European economy. https://oami.europa.eu/ohimportal/documents/11370/80606/IP+Contribution+study.

[5] What is Intellectual Property? - WIPO Publication nº450(E): http://www.wipo.int/edocs/pubdocs/en/intproperty/450/wipo_pub_450.pdf

[6] EU Intelectual Property Rights: http://europa.eu/youreurope/business/start-grow/intellectual-property-rights/index_en.htm.

Intellectual property rights are key to stimulating innovation and creativity. IP rights are central to their owners' commercial success.

IP rights give owners the opportunity to protect their creation (i.e. they give the author/creator exclusivity over the created product/invention). Thus, they provide owners with legitimate commercial opportunities if someone else wants to use their creation legally. Unfortunately, illegal use and production of products covered by IP rights, which is commonly called IP rights infringement – in reference to patents, trade marks, designs or copyright – remains a critical challenge, driven by universally available and affordable digital technologies, increasingly sophisticated and well-organised counterfeiting, and social approval of the phenomenon.

In 2013, OHIM, through the EU Observatory on Infringement of Intellectual Property Rights, commissioned a study to gauge citizens' knowledge and perceptions of IP and IP infringements, in order to better understand them, and consequently design appropriate actions. In the study, a large majority of EU citizens displayed strong support for IP, and yet considered that, on a personal level, breaking IP laws may be justified to cope with the consequences of limited purchasing power, and to protest against an economic model driven by a market economy and premium brands or legal offers not adapted to the digital market[7].

Moreover, acceptance of counterfeiting and digital piracy decreases consistently with age. In other words, judgments differ significantly from one generation to another, with the younger population (15 to 24-year-olds) showing much greater tolerance towards IP infringements. Between 35% and 50% of young Europeans display attitudes that favour counterfeiting and/or illegal downloading – a proportion far superior to the European average.

While age appears to be essential in determining opinions, the level of IP knowledge is not a major determinant regarding perceived acceptability of IP infringements. This, especially in view of the extent to which IP-intensive industries contribute to growth and employment in the EU, may raise important questions about the quality and quantity of teaching and explanations offered to younger generations regarding the value of IP, the omnipresence of IP in their daily lives and the harm IP infringements may cause to them personally, to the economy, and to society as a whole.

In alignment with this objective, **this study explores how youth is currently exposed to IP in the classroom.**

The research was carried out on two levels:

FIRST LEVEL

The first level mapped how the following topics are taught in European (EU) primary and secondary public schools:

- Key IP rights (i.e. trade marks, design, patents and copyright)
- IP-related issues including ownership, authorship, originality, permission, licensing, confidentiality, trade secrets, privacy, commercialisation, standards, competition, branding, piracy, infringement and counterfeit

SECOND LEVEL

The second level examined how the five specific IP-related education areas could serve as the entry points to introduce explicit mentions of IP:

- Entrepreneurship education
- Citizenship education
- Arts education
- Information and Communications Technology (ICT) education
- Science, Technology, Engineering and Maths (STEM) education[7]

[7] European Citizens and Intellectual Property: Perceptions, Awareness and Behaviour (2013): https://oami.europa.eu/ohimportal/documents/11370/80606/IP+perception+study

[8] These subjects were chosen because of their direct links to IP issues and the opportunity they provide for integrating IP into the classroom, and relating it to the skills and competencies that pupils are expected to acquire. http://europa.eu/legislation_summaries/education_training_youth/lifelong_learning/c11090_en.htm

As a final step, the EU results were benchmarked against those of the most innovative countries/regions outside of the EU (Switzerland, the US, Singapore and Hong Kong) in order to identify and compare differences in teaching IP.

This approach helped to assess the role and status of IP education in the EU, identify best practices, and analyse the differences between the EU and other chosen countries/regions, all of which lead to a better understanding of the issue, and a more accurate assessment of future actions to be undertaken in the area.

DEFINITION OF IP EDUCATION

IP education should include references to skills and competencies that young people can be expected to acquire in the classroom that enable them to become familiar with intellectual property, understand its potential to generate income and economic growth and lead them to respect intellectual property rights, whether their own or those of others. It is a process that supports pupils in becoming future IP creators.

This study focused on all direct and indirect mentions of IP rights and IP issues in the school curricula currently taught in the countries/regions within scope. For the purpose of this study, the term IP rights refers to copyright, trade marks, patents and designs, while IP issues include ownership, authorship, originality, permission, licensing, confidentiality, trade secrets, privacy, commercialisation, standards, piracy, competition and branding. Within the context of IP rights and issues, it is important for young people to:

Learn to be familiar with intellectual property.	**Understand its potential to generate income and growth.**	**Respect other people's intellectual property rights.**

In the context of this study, IP education goes beyond the narrower concept of promoting theoretical knowledge and understanding of IP components such as copyright, patents, trade marks and designs.

When applying this to school curricula, the focus is not only on knowledge but also on how knowledge applies to students' everyday lives. IP education will prioritise learning outcomes that deliver skills and competencies that young people can be expected to acquire in the classroom.

DEFINITION OF SCHOOL CURRICULUM

A school curriculum usually refers to knowledge, skills and attitudes that must be acquired throughout the period of compulsory education. It is typically divided into specific curricular subjects (mother tongue, foreign languages, mathematics, history, geography, etc.) and describes the main learning objectives and skills of each subject area.

It is important to note that there is no such thing as a single European school curriculum, and that each Member State defines what should be learned, how it should be taught, and how pupils will be evaluated. In some countries, schools or their governing bodies are free to develop their own curricula, as long as they follow the national core curriculum. Extra-curricular activities also play an important role in students' learning experience.

The study identified whether IP education is considered a curricular subject in each country/region, and explored explicit or implicit IP links with each curricular subject. Connections between IP education and the aforementioned five specific learning areas were studied in depth. Country profiles for each country/region are annexed to the study.

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STUDY ON IP EDUCATION IN SCHOOL CURRICULA IN THE EU MEMBER STATES WITH ADDITIONAL INTERNATIONAL COMPARISONS

1. METHODOLOGY

1. METHODOLOGY

The purpose of the present study is to identify where IP education already exists, at which education levels it is most prevalent, and how it is implemented, with a view towards building sustainable support (educational programmes, activities and materials on IP) for schools throughout Europe to foster creativity, innovation and entrepreneurship.

The study explored three initial scenarios regarding the status of IP education in schools, based on their curricula:

IP taught as a specific subject

IP integrated as a topic into an existing subject
(e.g. in music, there is a special mention of artistic creation ownership linked to copyright)

IP integrated as a topic into existing cross-curricular themes
(ICT; health, safety and environment; entrepreneurship; digital skills)

In order to accomplish the above, a quantitative and qualitative analysis of school curricula in 33 EU countries/regions and the above-mentioned non-EU countries/regions was carried out.

These non-EU countries/regions were chosen based on the 'Global Innovation Index 2014:[9] The Local Dynamics of Innovation', published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO) in 2014 ranked them among the most innovative countries/regions worldwide.

Their experiences were used as benchmarks to enable the identification of good practices in other regions of the world. The aim of this comparison was to see what differences, if any, exist in IP learning approaches between the two groups.

The scope of the research includes compulsory primary education and general secondary education, as well as secondary level vocational, technical and commercial schools, covering age groups from 4 to 18 years old. Both public and private education sectors were analysed, during the 2012/13 scholastic year.

[9] Global Innovation Index 2014: https://www.globalinnovationindex.org/userfiles/file/reportpdf/gii-2014-v5.pdf

1. 1. Expert group

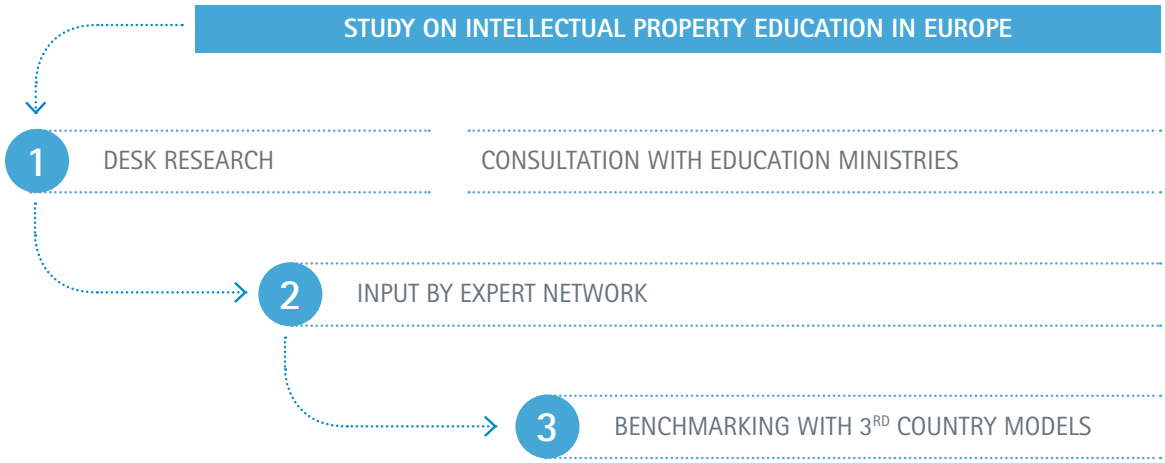
A group of experts was created to define the scope of the study, the evaluation instruments and sources of information, and to carry out the analysis. Professor Ruth Soetendorp co-ordinated the expert group, which comprised of the following members:

Entrepreneurship education	Dana T. Redford, PhD (President of the Portugal Entrepreneurship Education Platform; expert in education & public policy)
Citizenship education	Renata Kosinska (Comparative education and European educational policies analyst)
Arts education	Anne Bamford, PhD (Professor at the University of the Arts London and Director of the International Research Agency)
IP education	Ruth Soetendorp (Professor Emerita, Associate Director of the Centre for Intellectual Property Policy & Management, Bournemouth University; Chair of the Intellectual Property Awareness Network)
ICT & STEM education	Stephen Haggard (Consultant in education technology strategy)

The expert group's contribution included the following:

- Defining the scope of the study and the evaluation instruments;
- Analysing the information obtained, based on their own thematic fields of expertise and providing their inputs for the preliminary findings;
- Carrying out a more thorough analysis, with the objective of identifying good practices;
- Developing a Country Profile for each of the countries covered in the study;
- Participating in the drafting of the final report.

1. 2. Sources of information



The study's main information sources are the official educational curricula and guidelines. For this, only centrally-set official documents have been analysed, such as national curricula and/or other official guidelines and recommendations referring to learning contents and objectives, attainment targets or key competencies.

It is important to note that the degree of prescription within a national curriculum varies. Some countries, such as France and England have a centrally-defined national curriculum. Others rely on a more flexible approach, with a core curriculum that can be complemented at local or school level. This is the case, for instance, in Finland, Estonia and Scotland. Nevertheless, in all cases, the study refers to the official national curriculum guidelines established and periodically updated or reformed by the Ministries of Education (be they national or regional).

In addition to the study of the official curricula, quantitative and qualitative input was obtained from the Ministries of Education of each country, with the exceptions of Ireland, Bulgaria and Singapore. The missing data from these countries was provided by specialised researchers.

The data for the study was obtained in the following manner:

IN EU AND NON-EU COUNTRIES/REGIONS

Comparative curriculum analysis

A detailed form and guidelines were created for thorough analysis of the curriculum in each country/region by a local education researcher. In federal countries, where each state has their own curriculum, several curricula were studied (for example, in Belgium both the Flemish and French curricula were included).

Input from Ministries of Education

A survey for Ministries of Education was created and sent to all the Ministries, in order to better understand the status of IP education and the challenges and opportunities presented by the introduction of IP in the curriculum.

During the entire research project, over 1,500 documents were analysed, 40 field studies were conducted and 36 responses to the questionnaires were received from officials at the National Ministries.

The proposed methodology implies certain limitations to the study. As part of the analysis is based on input received from the Ministries of Education, some shortcomings occur due to lack of unified definitions and knowledge of IP among some respondents (specifically, a lack of understanding about the meaning of 'intellectual property' and 'intellectual property education' by the recipients of the questionnaires). Therefore, the results from the Ministries were cross-checked by the specialised researchers in each country.

It should be noted that in federal countries where each province has the authority to draft its own curriculum, not all of the curricula were studied in depth. For example, in Germany, although all provinces were contacted, two federal states were chosen for in-depth analysis: Sachsen and Berlin-Brandenburg. These two states were considered to be representative of the country, and valid input was obtained from both during data collection. For the U.S., Washington, California and Massachusetts were analysed as they were rated the top three most innovative states according to the Bloomberg ranking.[10] For Switzerland, the regional language curricula of the German ("Lehrplan 21") and French speaking region ("PER") have been analysed. Both are based on the Swiss national educational goals (basic skills) established by the Swiss Conference of Cantonal Ministers of Education (EDK), in which all Swiss cantons are represented and therefore cooperated in this study.

[10] Bloomberg ranking of the 20 most innovative U.S. states (November, 2013): http://www.bloomberg.com/visual-data/best-and-worst//most-innovative-in-u-dot-s-states

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STUDY ON IP EDUCATION IN SCHOOL CURRICULA IN THE EU MEMBER STATES
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2. STATUS OF INTELLECTUAL PROPERTY IN SCHOOL CURRICULA

2. STATUS OF INTELLECTUAL PROPERTY IN SCHOOL CURRICULA

2. 1. Status of IP education in 33 EU countries/regions

The study reveals the following status of IP education in 33 EU countries/regions:

THERE IS NO SPECIFIC IP STAND-ALONE SUBJECT OR COMPREHENSIVE IP EDUCATION PROGRAMME IN ANY OF THE COUNTRIES/REGIONS ANALYSED

IP does not exist as a stand-alone subject in any of the countries/regions analysed. In all countries/regions where curricula include elements of IP education, they are integrated into another specific subject, such as civics or economics. For example, they may be covered as a topic when highlighting the importance of an ethical and responsible use of information in different subjects. Moreover, none of the countries/regions included in the study has a structured programme regarding IP education in their curricula.

However, various initiatives that focus on teaching IP do exist. These typically come from public-private partnerships where stakeholders are usually the driving force. These cases are described in detail later in this study.

IP RIGHTS AND RELATED THEMES ARE MOSTLY INTEGRATED INTO ONE OR VARIOUS OTHER SUBJECTS

The study shows that **while IP is not included as a stand-alone subject, IP topics are covered in diverse subjects**. IP may be referenced in discussions about library use and research, and rights in general. It is most likely to arise in the context of responsible use of IT materials, in the arts or computer sciences, and under the general headings of rights and obligations taught in citizenship classes. The focus on IP is mostly at upper secondary level, particularly in vocational education.

For example, in art classes, lower and upper secondary Polish pupils learn about the relevance of IP to their own creative work, and the importance of respecting the IP of others. In France, at upper secondary level, 'Creation and Artistic Activities' integrate IP into creative areas including design, film, dance, music, theatre, etc. In Luxembourg, in IT ('Applied IT'), upper secondary students are taught the importance of IP protection. Cyprus includes IP in the presentation of the Universal Declaration of Human Rights (Article 27).[11] In Estonia, through 'Social Studies' (which includes technology and the information environment), pupils become familiar with social values, norms and attitudes that enable them to function in society.

Croatia recognises that there is a place for concrete and additional components of IP within the 'Aesthetics' subject, which makes direct mention of trade marks within the global economy of fashion. In Sweden, at upper secondary level, 'Economy' studies include entrepreneurship, in which pupils learn how ideas and products are protected by (patent) laws and regulations, whilst 'Business Law' gives pupils the opportunity to study IP law. The Czech Republic's vocational training includes examples of 'Publishing' and 'Photography', in which copyright knowledge is expanded to include IP (copyright) contracts, which are the basis of generating income from owning IP.[12]

Lithuania includes the importance of IP rights and referencing students' own work in 'Graphic Design' at upper secondary level. In the Netherlands, 'Application and Media Development' covers copyright, ownership, management and enforcement of rights, and privacy.

In the UK, the Intellectual Property Office's Think Kit is a free resource developed for teachers of 14 to 16-year-old students, in order to increase their understanding of intellectual property rights, including patents, trade marks and design. Through case studies, the resource explores enterprise initiatives and IP rights using six real-life scenarios, and tells stories about innovators and their individual journeys. The case studies focus on a variety of themes including sport, music, technology, food and design. While the UK curriculum does not formally provide for IP or copyright education, schools are not technically stopped from teaching pupils about copyright and IP.

Despite the fact that IP issues are mostly integrated into other subjects, some IP-related elements are also included in cross-curricular themes: In the Czech Republic, media studies classes cover the development of the media from book printing to the internet; origin and types of mass media; and external influences on the behaviour of the media: institutional (media legislation), regulations, professional ethical codes, people in the media, and their own work and rights with respect to the media.

In Slovenia, as part of the cross-curricular 'library and knowledge' theme, the curriculum mentions that: "the student shall take into account the agreed rules of behaviour and ethics of the use of library materials and copyright". In addition, the specific objectives and contents include some additional mentions of IP components: students learn to choose proper sources, independently use these sources and accurately quote them. They become familiar with the concepts of authorship, plagiarism and copyright.

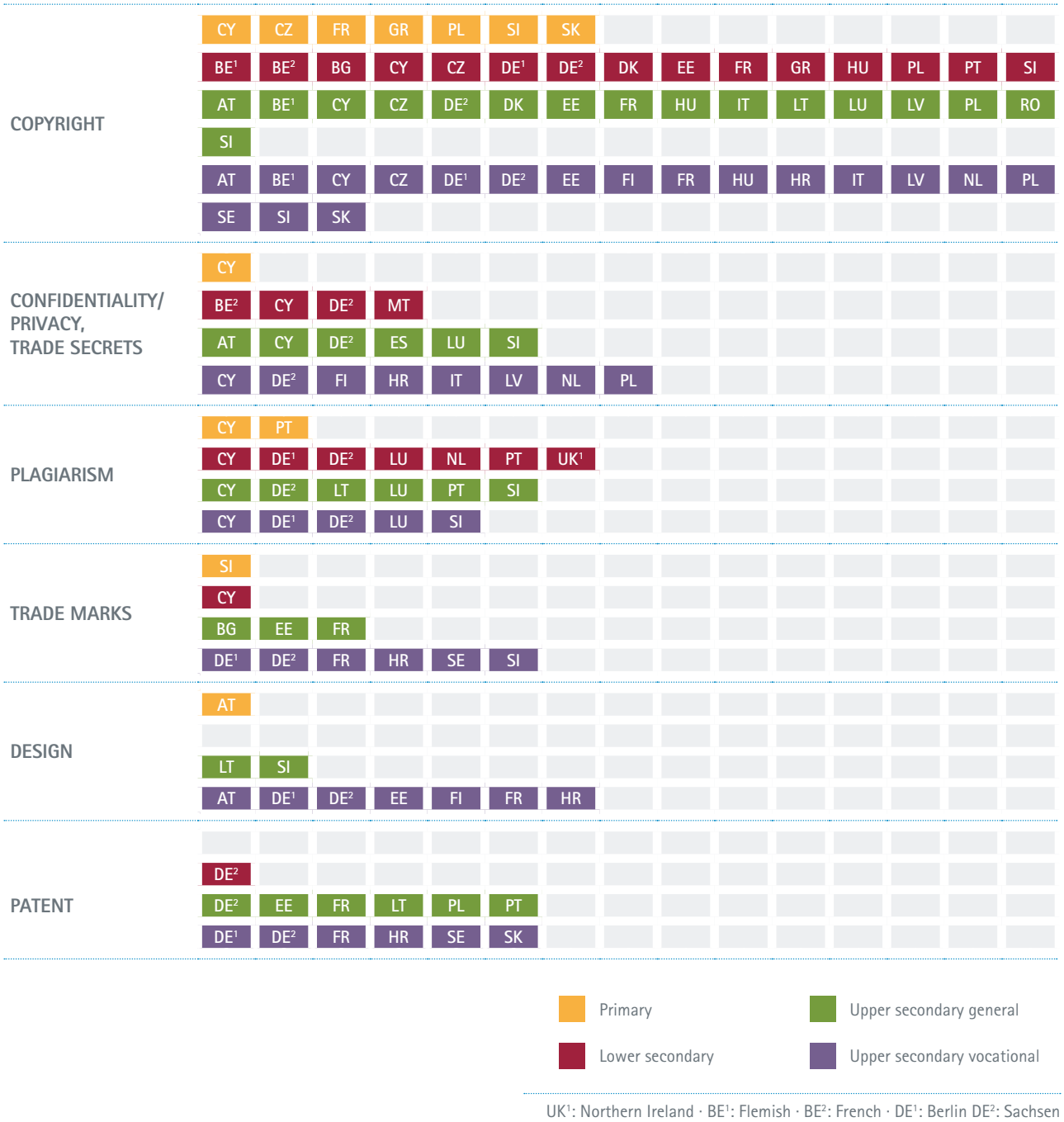
[11] Universal Declaration of Human Rights (Article 27): http://www.un.org/en/documents/udhr/index.shtml#a27

[12] Copyright Education and Awareness (November 2014) Mike Weatherley MP, p. 21: http://www.mikeweatherley.com/wp-content/uploads/2014/10/11.pdf

2. 1. 1. EU Member States: Most common references to key IP rights and IP- related components

There are numerous mentions of IP in the curricula of many EU countries/regions. As reflected in the chart below, these are most commonly related to copyright.

Aspects of IP mentioned in the curricula of 33 EU countries/regions



UK¹: Northern Ireland · BE¹: Flemish · BE²: French · DE¹: Berlin DE²: Sachsen

The following findings present further details on references to IP rights and issues in school curricula:

PRIMARY LEVEL

At **primary level**, IP education is most relevant for children when it comes to learning about rights and obligations as a citizen, and the need to respect the rights of others. Nevertheless, situations vary between different countries.

Copyright is the most commonly taught IP right at primary level: seven countries/regions incorporate it into their official curricula (Cyprus, Czech Republic, France, Greece, Poland, Slovenia and Slovakia).

At this level, **plagiarism** is only taught in two EU countries/regions: Cyprus and Portugal. **Design** is touched upon in Austria and **trade marks** in Slovenia.

Cyprus mentions IP rights and issues like **copyright, confidentiality, privacy, trade secrets**, and **plagiarism** the most at this level. Its Education Ministry underlined that students at this level engage in cross-curricular projects such as "Safer Internet" that touch a wide range of different IP components.

Patent is the only IP right that does not receive a mention in any of the official EU primary level curricula.

LOWER SECONDARY LEVEL

At **lower secondary level,** the focus is on the use of software and internet-based resources, which bring students into contact with IP; primarily copyright in original material and associated ethical issues regarding its use.

Once again, **copyright** is the most commonly taught IP right, with 15 EU countries/regions teaching it (French and Flemish speaking Belgium, Bulgaria, Cyprus, Czech Republic, Sachsen, Berlin-Brandenburg, Denmark, Estonia, France, Greece, Hungary, Poland, Portugal and Slovenia).

Plagiarism is mentioned in seven countries/regions: Cyprus, Sachsen, Berlin-Brandenburg, Luxembourg, Netherlands, Northern Ireland and Portugal.

IP issues like **confidentiality**, **privacy** and **trade secrets** are mentioned by four countries/regions: Cyprus, Sachsen, Belgium's French speaking region and Malta.

Patents are included in one region, Sachsen, and **trade marks** are taught in Cyprus.

Based on the active cross-curricular project, Cyprus and Sachsen include **IP rights and IP issues** most frequently in their official curricula at lower secondary level. Belgian's French speaking region and Berlin-Brandenburg have the second highest frequency of IP rights and IP issues.

UPPER SECONDARY LEVEL

Upper secondary level general education deepens pupils' learning of IP in the areas of information science, Information and Communications Technology, entrepreneurship, media and media production.

As in the other levels of education, **copyright** is most prominently taught. This is the case in 16 countries/regions (Austria, Belgium's Flemish speaking region, Cyprus, Czech Republic, Sachsen, Denmark, Estonia, France, Hungary, Italy, Lithuania, Luxembourg, Latvia, Poland, Romania and Slovenia).

Patents are taught much more often at this level, than in the lower levels of education – receiving a mention in six countries/regions (Sachsen, Estonia, France, Lithuania, Poland and Portugal).

What's more, **confidentiality, privacy** and **trade secrets** are also taught in six countries/regions: Austria, Cyprus, Sachsen, Spain, Luxembourg and Slovenia.

Plagiarism is taught in six EU countries/regions: Cyprus, Sachsen, Lithuania, Luxembourg, Portugal and Slovenia.

Trade marks are taught in Bulgaria, Estonia and France.

Design is taught in Lithuania and Slovenia.

Lithuania, Sachsen and Slovenia are the three countries/regions with the most mentions of **IP rights and related issues** in their official curricula at general upper secondary level. They are followed by France, Estonia, Luxembourg and Cyprus, which also make several mentions.

UPPER SECONDARY VOCATIONAL LEVEL

Upper secondary vocational education offers a number of subjects in which IP is integral to pupils' learning, such as Aesthetics in Croatia, Economy in Sweden, Initiation to Entrepreneurship in Poland, and Social Studies in Estonia.

Again, **copyright** is mainly taught at this level, in the highest number of countries – 18 countries/regions teach copyright at upper secondary vocation education level. These are: Austria, Belgium´s Flemish speaking region, Cyprus, Czech Republic, Sachsen, Berlin-Brandenburg, Estonia, Finland, France, Hungary, Croatia, Italy, Latvia, Netherlands, Poland, Sweden, Slovenia and Slovakia.

The second most commonly taught IP related themes are **confidentiality, privacy and trade secrets –** which feature in the curricula of eight countries/regions: Cyprus, Sachsen, Finland, Croatia, Italy, Latvia, Netherlands and Poland.

This is followed by **design,** which is mentioned in the IP context by Austria, Estonia, Finland, France, Croatia, Sachsen and Berlin-Brandenburg.

Next in line are **trade marks** and **patents,** both of which are taught by six countries/regions: For **trade marks** these are Sachsen, Berlin-Brandenburg, France, Croatia, Sweden and Slovenia. For **patents** these are Sachsen, Berlin-Brandenburg, France, Croatia, Sweden and Slovakia.

Plagiarism is taught in five official curricula: Cyprus, Sachsen, Berlin-Brandenburg, Luxembourg and Slovenia. Sachsen leads in the number of **IP rights** and **IP-related issues** taught throughout its official curriculum, followed by Berlin-Brandenburg and France.

Overall, Sachsen and Cyprus stand out in Europe in the teaching of IP rights and IP issues through their official curricula, followed by Slovenia, France, Berlin-Brandenburg, Poland and Estonia, and Portugal.

Countries such as England and Wales report no aspects of IP explicitly included at any of the educational levels concerned.

Whilst there was no direct question related to teaching about infringement, specific responses from Austria, Czech Republic, France and Lithuania suggest that IP infringement is covered in the curricula. Austria and Lithuania describe legal consequences of, and personal responsibility for, copyright infringement. France tackles the diversity of the different infringements of property law, and how to combat them. Curricular content for the Czech Republic includes different types of infringement alongside other sanctioned behaviours, including corruption and criminal liability.

EXAMPLES OF WHERE IP RIGHTS ARE MENTIONED IN THE CURRICULA OF 33 EU COUNTRIES/REGIONS

Concrete examples of where IP rights are mentioned in the curricula of 33 EU countries/regions are as follows:

COPYRIGHT

Students in the **Czech Republic** touch upon copyright from primary education onwards. As part of the 'man and his world' subject, they learn about laws and the concept of justice, which includes intellectual property rights: Fundamental human rights and the rights of children, the rights and obligations of children at school, infringement and corruption, legal protection of citizens and property including the right of reclamation, legal protection of property and intellectual values. Czech citizenship education distinguishes between property and ownership; different types of property; material and intellectual property, and their protection.

Copyright is also commonly covered in ICT education at lower and upper secondary levels. In the Czech Republic, the subject 'information science and information and communication technologies' explicitly states that its intended aims include forming and developing key competencies by guiding the pupil towards: "identifying the fundamental legal aspects and ethical principles concerning work with information and with computer technology, respecting intellectual property, copyright, personal data and the principles of citing authorial work correctly".

In **Sweden,** upper secondary level students studying arts education discuss "copyright in cultural expression and communication with audience". In **Latvia,** music classes cover "music like a product and part of intellectual property", discussing copyright protection laws. In **Cyprus,** copyright is also addressed as part of civic education, in which students learn about all the articles of the Human Rights Declaration – including Article 27 about intellectual property. In **Estonia,** upper secondary students can even complete a Copyright Act course.

PATENTS

In **Germany,** students are introduced to the concepts of patent at lower secondary level, by talking about competition and patent law. At upper secondary level, economy, biotechnology and technology classes go into greater detail about the invention process and the foundation of a company – including references to patents. In **Estonia,** upper secondary school students learn about patents in the optional course 'people and law'.

France also includes upper secondary level teaching on property law and patents, which approaches the patent registration process in teachings through its entrepreneurship component. Additionally, lessons that cover competitiveness and creativity also include the role of patents in technical solutions, as well as in design.

In **Slovakia,** students touch upon legislation and regulations related to standards and patents when they train to become journalists or librarians. **Croatia's** VET students learn about the legal environment of business, which includes economic laws and knowledge about patents, trade marks and industrial design.

TRADE MARKS

In **Slovenia,** primary level students learn about the role of trade marks in food and food quality as part of a subject called 'household'. Furthermore, during vocational education, Slovenian students learn about the concept of trade marks and brands in the subjects 'ICT and the basics of economics' and 'entrepreneurship and sales'.

In **Croatia,** students of VET textile, leather and design programmes learn about trade marks, as part of the 'aesthetics' component. Trade marks are discussed within the context of the global economy of fashion and as a means of protecting students' own design products. Furthermore, a marketing VET course covers trade marks in relation to economic products.

DESIGN

In **Croatia,** students of the aforementioned VET textile, leather and design programmes also study the sociology of fashion and design, and learn about the importance of design.

Design is also addressed in the **Estonian** secondary school curriculum, in regards to use of the internet and information that enables students "to keep themselves up to date with technological innovation and become familiar with the creations of designers and artisans from around the world".

In **Denmark,** upper secondary level students can take a course on the history of design. **Austrian** students are introduced to design at primary level, through classes about visual design. At vocational level, they can go on to specialise in interior design and other art forms that deal with their related rights. **Lithuania** offers upper secondary level courses in graphic design, which tackle creativity, originality and unique style, while VET wood science students in **Slovenia** learn about furniture design, and discuss the importance of modern design.

OTHER REFERENCES TO IP: PLAGIARISM

The study also asked whether plagiarism was included in the national curriculum. Plagiarism describes the use, without appropriate credit, of the work of others in a work presented as one's own. Although plagiarism is not the same as copyright infringement (a plagiarised work may be exempt of copyright, but still entitled to academic acknowledgement), learning about the pitfalls of plagiarism introduces young people to the concepts of 'ownership', 'permission' and 'acknowledgement', which are relevant when considering copyright works. Countries/regions where plagiarism is most mentioned include **Cyprus,** where it is mentioned at all levels, **Sachsen** and **Luxembourg** from lower secondary level onwards, and **Berlin–Brandenburg** in lower secondary and upper secondary vocational levels. In **Portugal,** plagiarism is dealt with at primary, lower secondary and upper secondary general levels. In **Slovenia,** plagiarism is mentioned in upper secondary general and vocational levels.

2. 2. Status of IP education in the non-EU countries/regions

In addition to the 33 EU countries/regions, this report also studied the educational curricula of seven non-EU countries/regions around the globe that figure among the ten most innovative countries in the world, as measured by the Global Innovation Index,[13] which ranks world economies' innovation capabilities and results: **Switzerland** (German and French speaking regions), **the U.S.** (California, Massachusetts, Washington), **Singapore** and **China** (Hong Kong).

Strong differences exist among the school education systems and curricula of the non-EU countries/regions studied. Switzerland and the U.S. have a decentralised education system. In Switzerland, each 'canton' has a specific education authority, despite the existence of a global framework of competencies. In the U.S. also, there is no 'national' school curriculum, but 'common core standards' for literacy and maths have now been defined and applied in 43 states. In contrast, school curriculum guidelines are precisely defined in both Hong Kong and Singapore.

The study reveals the following status of IP education in the non-EU countries/regions analysed:

THERE IS NO SPECIFIC IP STAND-ALONE SUBJECT OR COMPREHENSIVE IP EDUCATION PROGRAMME IN ANY OF THE COUNTRIES/REGIONS ANALYSED

In the analysis of the school curricula of these non-EU countries/regions, several trends have been identified. Countries/regions that have a strong emphasis on moral and civic values in their school curricula, such as **Hong Kong and Singapore,** tend to address IP from a very early age (primary level) and deal directly with the consequences of IP rights infringements. Countries/regions that consider vocational education a priority, as is the case of **Switzerland**, include references to IP education at this level of studies. What is common to all these countries/regions – and the EU – is that IP education is not a subject in its own right.

IP RIGHTS AND RELATED THEMES ARE MOSTLY INTEGRATED INTO ONE OR VARIOUS OTHER SUBJECTS

Nowadays, students around the globe use more technology in class to learn, read, search for information, and use many different digital resources. Moral, civic and ethical values are still valid in these contexts and students still learn about them. They also learn about the rights and responsibilities of using material which is not their own. Being aware of IP-related issues is especially relevant at upper secondary level, where students are prepared to enter the labour market and to experience legislation surrounding IP first-hand.

The growing use of technology in the classroom with regards to IP has been established. For example, legal and ethical IP principles are systematically addressed in ICT-related subjects in these non-EU countries/regions. IP is not only integrated into the ICT classes, but is also included as part of a cross-cutting approach that makes many subjects relevant for addressing the ethical and responsible use of online information.

In Singapore, IP education is highly focused on core civic and moral values through Character and Citizenship Education (CCE): "respect (for) intellectual property rights" is one of the ways to "stand up for what is right" and is equated to being "honest" or making "ethical decisions". Responsible use of information is taught across the whole curriculum and specifically addresses IP rights issues.

[13] Global Innovation Index 2014: https://www.globalinnovationindex.org/userfiles/file/reportpdf/gii-2014-v5.pdf

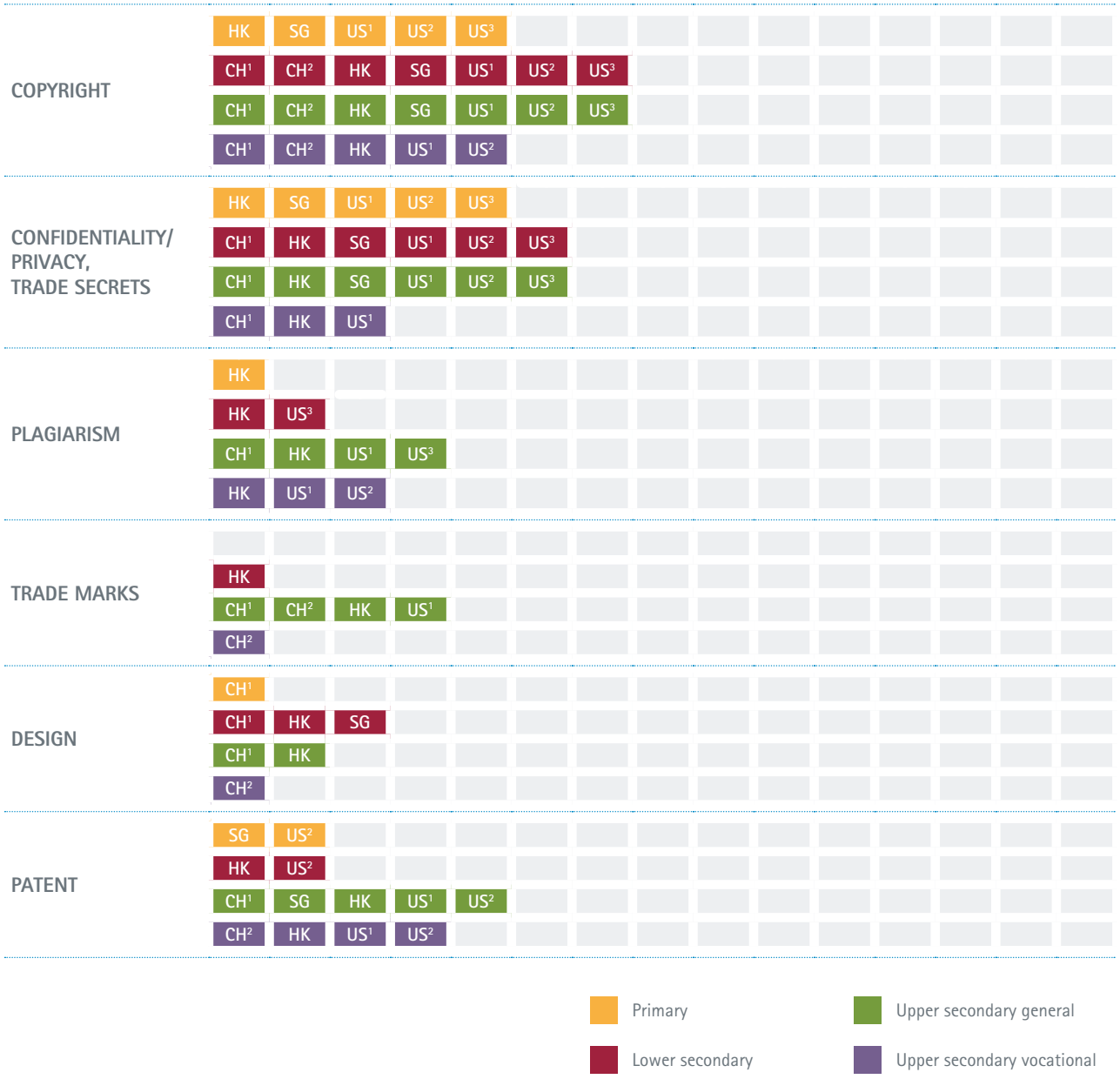
In Hong Kong, topics on intellectual property rights and privacy are covered in General Studies at primary level, as well as computer subjects and Life and Society at secondary level. **The responses indicate that IP education is included at all levels of education,** though most of the specific examples are related to plagiarism and copyright protection. Pupils are encouraged to understand copyright in terms of both rights and responsibilities. To this extent, intellectual property education is usually designed to strike a balance between rights and responsibilities.

Hong Kong and Singapore have a broader understanding of the role of IP and IP rights in a career development context. In these countries/regions subjects such as design and applied technology address IP and IP rights in the innovation process. In the U.S., Career Technical Education (CTE) students are encouraged to describe strategies to protect IP in almost all subjects.

2. 2. 1. Non-EU countries/regions: Most common references to key IP rights and IP-related components

The chart below shows the different aspects of IP that appear in the school curricula of the non-EU countries/regions surveyed. Copyright again is the most commonly mentioned IP right.

Aspects of IP mentioned in the curricula of the non-EU countries/regions



CH¹: CH (DE) Switzerland (German speaking) · CH²: CH (FR) Switzerland (French speaking)
HK: Hong Kong · SG: Singapore · US¹: CA – California · US²: MA- Massachusetts · US³: WA – Washington

The following findings present further details regarding references to IP rights and components in the school curricula of the non-EU countries/regions surveyed:

PRIMARY LEVEL

At **primary level, copyright** - along with confidentiality/privacy issues - is the most commonly occurring IP right in the official curricula of the countries/regions analysed. Pupils of a young age – especially in Singapore, Hong Kong and the U.S. states California, Washington and Massachusetts – learn about respecting copyright when searching for information or communicating on the internet. Visual arts classes and the existing technology literacy standards in the U.S. focus on 21st century skills including IP education.

IP education at primary level is often built around the interdependencies of human activity and the environment. Pupils learn to think about products and consumer behaviour, including its consequences, but primary school children also learn nowadays about ethics, respecting the intellectual property rights of authors and about internet safety. **Confidentiality/privacy** issues are the other most relevant issues in IP education at primary level. They are especially taught in the three U.S. states of California, Washington and Massachusetts, but also in Singapore and Hong Kong.

Patents are mentioned in Singapore and Massachusetts, as is **plagiarism** in Hong Kong. **Design** at primary level is only covered in the German speaking part of Switzerland and trade marks are the only IP right not mentioned in the curricula at primary education level.

Singapore, Hong Kong and Massachusetts cover most aspects of IP in their official curricula, followed by California and Washington. In Switzerland, IP education at an early age is less relevant. The exception to this is design, which is taught in the German speaking part of Switzerland.

LOWER SECONDARY LEVEL

At **lower secondary level,** students start learning about methodical competencies including proficient and responsible use of the media, information and ICT. Furthermore, focus is placed on understanding the social, legal and economic aspects in the world of artists and musicians, but also on students creating their own media content, which brings them into contact with IP issues and the existing legal framework in these industries.

At lower secondary level, **copyright** is also the most common IP right mentioned. It covers all analysed curricula from all seven countries/regions: the German and French speaking parts of Switzerland, Singapore and Hong Kong, as well as the three U.S. states of California, Washington and Massachusetts.

Confidentiality/privacy issues are the second most mentioned reference to key IP rights and related components at secondary level. Next to the three U.S. states of California, Washington and Massachusetts, Hong Kong, Singapore and the German speaking part of Switzerland teach students how to protect their data and privacy in the digital era.

Design is mentioned in Singapore, Hong Kong, and the German speaking part of Switzerland.

Plagiarism features in the curricula of Hong Kong and Washington. **Patents** only receive a mention in the official curricula of Massachusetts and Hong Kong, and trade marks are only referenced in Hong Kong.

At lower secondary level, Hong Kong covers all **IP rights** and aspects, followed by the German speaking part of Switzerland, Singapore, Massachusetts and Washington.

UPPER SECONDARY LEVEL

At **upper secondary level,** students learn to be responsible citizens in social studies, and deepen their knowledge on how to manage information (research, writing, dissemination). This features in economy and law classes, but also music, arts and creative writing classes, which teach them how to respect the work of artists, composers and performers. Upper secondary education also encompasses a deeper and more comprehensive approach to design and technology, science and research.

At general upper secondary level, **copyright** is once again the most mentioned aspect of IP (German and French speaking part of Switzerland, Hong Kong, Singapore and the U.S. states of California, Washington and Massachusetts).

After the **confidentiality/privacy** issues mentioned in six countries/regions (German speaking part of Switzerland, Hong Kong, Singapore, California, Washington and Massachusetts), **patents** are the third most relevant IP aspects identified in official curricula (German speaking part of Switzerland, Singapore, Hong Kong, California and Massachusetts).

Plagiarism is the fourth most mentioned IP related aspect (German speaking part of Switzerland, Hong Kong, California, Washington), together with **trade marks** (the German and French speaking parts of Switzerland, Hong Kong and California).

The majority references to IP and IP related aspects at upper secondary education were found in Hong Kong, and the German-speaking part of Switzerland, followed by California and Massachusetts.

UPPER SECONDARY VOCATIONAL LEVEL

At **vocational upper secondary level,** students are taught about the use of inventions and scientific knowledge, and learn about product design and applied technologies. At this level, students are introduced to topics from the economic and law areas such as brands, design, ethics and legal responsibilities, and socio-cultural economic interdependencies, as well as management and entrepreneurship.

Copyright is yet again the most mentioned IP right. Five countries/regions (the German and French speaking regions of Switzerland, California, Massachusetts and Hong Kong) mention it in their official curricula at vocational upper secondary level. The IP aspect of patents is mentioned in the curricula of four countries/regions at this level (the French speaking part of Switzerland, California, Massachusetts and Hong Kong).

Plagiarism is mentioned in the curricula of California, Massachusetts and Hong Kong, and **confidentiality/privacy** issues are covered in the German speaking part of Switzerland, California, and Hong Kong.

Trade marks are only mentioned in the French speaking part of Switzerland; **design** also got only one explicit mention in the curriculum of the French speaking part of Switzerland.

At this level, Hong Kong has the highest number of IP mentions in its official curricula, together with the French speaking part of Switzerland and California. These are followed by Massachusetts and the German speaking part of Switzerland.

Across all education levels Hong Kong has the highest number of IP mentions in its official curricula, followed by California, Massachusetts and the German speaking part of Switzerland.

EXAMPLES OF WHERE IP RIGHTS ARE MENTIONED IN THE CURRICULA OF THE NON-EU COUNTRIES/ REGIONS

Concrete examples of where IP rights are mentioned in the curricula in the non-EU countries/ regions are as follows:

- In the U.S. state of **California,** students learn to recognise the consequences of **inappropriate and illegal use of information** at grades 7-8. This continues in grades 9-12, when students are asked to describe the implications of criminal activities e.g. generating viruses, hacking, identity theft as well as accessing illegal images. At the same time, in history and social sciences, students learn about how economic rights are secured and their importance to the individual and to society (e.g., the right to acquire, use, transfer, and dispose of property; right to choose one's work; the right to join or not join labour unions; copyright and patents).

- In **Massachusetts,** when arts students speak about the roles of "artists in the community", they also identify the roles of different stakeholders (e.g. government, philanthropists, arts institutions, critics) and recognise the use and impact of music copyright laws, and how they affect composers and performers.

- In **Washington,** the social studies curriculum includes a specific learning module about social studies skills at all levels. The objective is that students understand and demonstrate ethical responsibility in using and citing sources, and that they understand the rules related to plagiarism and copyright.

- **Singapore's** curriculum includes the subject 'cyber citizenship', which clearly mentions the issues of **plagiarism and piracy.** Primary level pupils learn about respecting copyright and authorship, but also about **copyright infringement** in media creation. The syllabus clearly states that being fair to others includes respecting intellectual property rights and being honest. Mentions of IP rights in Singapore are approached from the "**respect**" aspect (**forbidding notion**) but do not focus on the positive aspects of IP rights and how they serve students by enabling them to protect their work and their ideas – as is the case with patents.

- In **Hong Kong,** students simultaneously learn about copyright, data privacy and the **legal consequences of infringing existing regulations in respect to trade marks, patents, registered designs and trade secrets.** Students at primary level are taught to respect intellectual property rights and privacy, and the need to obey security rules when using information technology. Secondary students are taught to respect IP rules and regulations when handling information. In Hong Kong, topics on intellectual property rights and data privacy are mainly covered at primary level in a subject called 'general studies', and at lower and upper secondary level in ICT and 'life and society' classes.

  The Hong Kong government strongly affirmed that, even though it is not planning to integrate a specific topic on IPR in the national curricula, it will continue to support schools in enhancing students' understanding and attitudes in connection to the issues of IPRs through resource development, professional development programmes and school-based support services, in order to equip teachers to teach IPR-related topics in the school curriculum competently and effectively. It recently made available a new teaching kit for primary or lower secondary levels as well as other (video-based) learning and teaching resources on personal and social issues/dilemma situations to support the implementation of values education in schools. This engagement is also reflected in teachers' professional development training on IPR.

- In the **French speaking part of Switzerland,** students also analyse and reflect on consumer products at primary and lower secondary education levels. Doing so leads them to discuss child labour, **counterfeiting, copyright,** and at upper secondary level, to debate **piracy.**

IP IS A RELEVANT TOPIC IN EDUCATING AND TRAINING TEACHERS

In all non-EU countries/regions analysed, teachers are increasingly made aware of the importance of IP rights for the use or production of their own teaching resources.

In Hong Kong and the U.S., they are explicitly asked to avoid infringing copyright, and to help students build awareness and practice protecting IP.

In Switzerland, students can access specific resources produced by IP stakeholders, and which are directly linked to the curriculum guidelines.

Media education provides new training opportunities for teachers, either with specific programmes, like those in Switzerland, or through collaboration with librarians, as is the case in the U.S.

In Hong Kong, IP education appears to be a priority in teacher education and within the integrated school curriculum. Teachers in Hong Kong are made aware of the significance of including IP education in lessons. In advice given to schools, the introduction promotes a very clear picture of IP education: "Operating in this brave new world without grasping the principles of intellectual property protection is like riding a flying bicycle through a busy air transport corridor without understanding air traffic control or weather information".

2. 3. Status of IP education: EU and non-EU countries/regions compared

In the EU and non-EU countries/regions analysed, IP and related themes are **integrated into one or several subjects as a cross-curricular theme throughout all education levels.** Depending on the IP right, its complexity and relevance for different age groups, the emphasis on teaching these rights differs at the different education levels.

RELEVANCE OF IP RIGHTS IN THE OFFICIAL SCHOOL CURRICULA

EU	Non-EU countries/regions
Copyright	Copyright
Plagiarism*	Confidentiality, privacy issues, trade secrets
Confidentiality, privacy issues, trade secrets	Patents
Patents	Plagiarism
Trade marks	Design
Design	Trade marks

*Plagiarism is mentioned by 9 EU countries/regions, and Confidentiality by 14. However, as plagiarism receives more mentions at the various levels of education within those countries/regions, we have ranked it as having higher relevance.

Below, the IP rights are analysed by educational level for both EU and non-EU countries/regions.

COPYRIGHT

Copyright is the most referenced IP right in EU and non-EU countries/regions at all education levels.

Copyright appears at primary level in 7 out of 33 EU countries/regions and 5 out of 7 non-EU countries/regions, and reaches its peak at lower secondary and upper secondary general levels in all 7 non-EU countries/regions.

What's more, it is present in the EU countries at vocational level in 18 out of 33 EU countries/regions, which reference copyright as an explicit learning outcome in their official school curricula.

Copyright is also a strong topic at lower and upper secondary general level in the EU with 15 and 16 EU countries/regions teaching their students about it, respectively. In non-EU countries/regions copyright is taught most at vocational level in 5 out of 7 non-EU countries/regions.

PLAGIARISM

In European Union schools, plagiarism is the second most important IP right in the curricula.

There is a slight difference in the importance of teaching about plagiarism in EU and non-EU countries/regions. In EU countries/regions, plagiarism is most referenced at lower secondary level (7 out of 33 EU countries/regions), followed by upper secondary general and vocational levels (6/5 out of 33 EU countries/regions, respectively). In non-EU countries/regions, the emphasis is placed on upper general secondary education level (4 out of 7 countries/regions), followed by upper secondary vocational and lower secondary levels, with plagiarism referenced in 3/2 out of 7 countries/regions, respectively. At primary level in non-EU countries/regions, plagiarism is only taught in 1 out of 7 countries/regions.

CONFIDENTIALITY, PRIVACY ISSUES, TRADE SECRETS

Confidentiality, privacy issues and trade secrets are the third most relevant IP issues in the EU countries/regions, and are the second most important in the non-EU countries/regions. In the EU, they are especially important at upper secondary general (6 out of 33 EU countries/regions) and vocational (8 out of 33 EU countries/regions) levels.

At lower and upper general education levels in the non-EU countries/regions, 6 out of 7 countries/regions focus on confidentiality and privacy issues. At primary and upper secondary vocational levels in non-EU countries/regions there is some focus on confidentiality/privacy issues (5/3 out of 7 countries/regions respectively). In Europe at primary level, only Cyprus teaches confidentiality/privacy issues through cross-curricular projects and only 4 out of 33 EU countries/regions teach them at lower secondary level.

PATENTS

Patent is the most relevant IP right taught in the official school curricula in EU countries/regions, after copyright, plagiarism and confidentiality/privacy issues. Patents are mainly referenced at upper secondary level and few references have been reported at primary and lower secondary levels. 6 out of 33 EU countries/regions reference patents at upper general and vocational levels, while in the non-EU countries/regions 5 out of 7 mention it at upper general and 4 out of 7 at vocational levels. At primary level, none of the EU countries/regions explicitly mention patents, and only Sachsen does so at lower secondary level. In non-EU countries/regions, 2 out of 7 teach their students about patents at primary and lower secondary levels.

TRADE MARKS

Trade marks are less prominent in the official curricula of both EU and non-EU countries/regions. In non-EU countries/regions, trade marks are not referenced at primary level.

Trade marks are especially emphasised in the EU at upper vocational secondary level, with 6 out of 33 EU countries/regions explicitly referencing them in their school curricula, followed by upper general secondary level (3 out of 33 EU countries/regions).

In non-EU countries/regions, trade marks are present at upper general level, with 4 out of 7 countries/regions teaching them, followed by lower secondary and upper secondary vocational levels (1 out of 7 countries/regions). In non-EU countries/regions, the trade mark is not taught at primary level, while in EU countries/regions it is present only in one country.

DESIGN

Design is taught in non-EU countries/regions at all educational levels, whereas this is not the case at lower secondary level in the EU.

Design is a significant IP right at upper secondary vocational level in the EU (7 out of 33 EU countries/regions), and at lower secondary level in the non-EU countries/regions (3 out of 7). It is only referenced in Austria at primary level, and in two countries/regions at upper secondary general level in both EU and non-EU countries/regions. Design is not explicitly referenced at lower secondary level in the EU countries/regions.

IP RIGHTS AND OTHER IP-RELATED ISSUES

The ratio of teaching IP rights at primary level is higher in non-EU countries/regions than in the EU countries/regions (with the exception of trade marks). Differences can also be seen in the subjects in which IP is taught.

In both EU and non-EU countries/regions, IP and IP-related issues are most frequently addressed in classes linked to information and communication technology (ICT). These encompass subjects like informatics, technology, media and information, and in non-EU countries/regions, include subjects like design and applied technology, computer literacy and computer applications. In these subjects, IP and IP-related issues arise often in the context of responsible use of information and the media, as well as of IT materials such as computer software. In non-EU countries/regions, legal and ethical IP principles are systematically addressed in all ICT-related subjects.

IP and its related issues are also taught in visual and performing arts classes, as well as in music classes in both EU and non-EU countries/regions. At upper secondary level – especially in vocational education, where IP receives greatest coverage – IP is also addressed in photography, media and design classes.

Business, law and marketing classes offer the opportunity to speak about different IP rights, underlining their economic importance in generating value and wealth.

Furthermore, IP and IP-related issues are taught under the general heading of rights and obligations in citizenship classes. **Concretely, in non-EU countries/regions such as Singapore and Hong Kong, IP education is highly focused on core civic and moral values through character and citizenship education (CCE)**. Intellectual property education is usually designed to strike a balance between rights and responsibilities and it is worth noting that the non-EU countries/regions analysed more frequently mention the notion of infringement/counterfeiting than the EU countries/regions.

2. 4. Integration of IP education into five specific learning areas

The study also focused on existing connections between IP education and five specific learning areas that are considered essential for enhancing creativity, innovation and social values. These are:


Entrepreneurship education


Citizenship education


Arts education


Information and Communications Technology (ICT) education


Science, Technology, Engineering and Maths (STEM) education

These five areas were selected from the eight key competencies selected by the EU, which define the main priorities for education in today's modern economies. The most frequent references to IP often occur in these areas, in particular the first four, as they deal with creativity, civic duties and ideas.

EIGHT KEY COMPETENCIES FOR LIFELONG LEARNING DEFINED BY THE EU [14]

The EU has defined eight key competencies for lifelong learning:

1. Communication in the mother tongue, which 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;

2. Communication in foreign languages, which involves, in addition to the main skill dimensions of communication in the mother tongue, mediation and intercultural understanding. The level of proficiency depends on several factors and the capacity for listening, speaking, reading and writing;

3. Mathematical competence and basic competencies in science and technology. Mathematical competence is the ability to develop and apply mathematical thinking in order to solve a range of problems in everyday situations, with the emphasis being placed on process, activity and knowledge. Basic competencies in science and technology refer to the mastery, use and application of knowledge and methodologies that explain the natural world. These involve an understanding of the changes caused by human activity and the responsibility of each individual as a citizen;

[14] Key Competences for Lifelong Learning: http://europa.eu/legislation_summaries/education_training_youth/lifelong_learning/c11090_en.htm

4. Digital competence involves the confident and critical use of information society technology (IST) and thus basic skills in information and communication technology (ICT);

5. Learning to learn is related to learning, the ability to pursue and organise one's own learning, either individually or in groups, in accordance with one's own needs, and awareness of methods and opportunities;

6. Social and civic competencies. Social competence refers to personal, interpersonal and intercultural competence and all forms of behaviour that equip individuals to participate in an effective and constructive way in social and working life. It is linked to personal and social well-being. An understanding of codes of conduct and customs in the different environments in which individuals operate is essential. Civic competence, and particularly knowledge of social and political concepts and structures (democracy, justice, equality, citizenship and civil rights), equips individuals to engage in active and democratic participation;

7. Sense of initiative and entrepreneurship is the ability to turn ideas into action. It involves creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. The individual is aware of the context of his/her work and is able to seize opportunities that arise. It is the foundation for acquiring more specific skills and knowledge needed by those establishing or contributing to social or commercial activity. This should include awareness of ethical values and promote good governance;

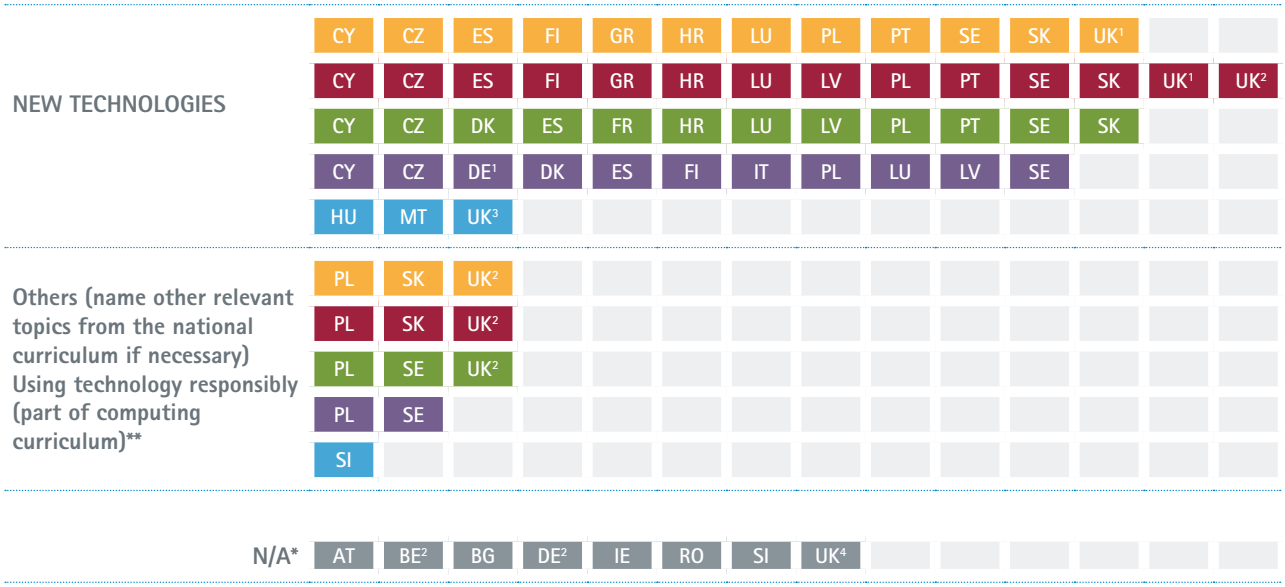
8. Cultural awareness and expression, which involves appreciation of the importance of the creative expression of ideas, experiences and emotions in a range of media (music, performing arts, literature and the visual arts).

This study focuses on five of these areas that are considered highly relevant for IP education, as reinforced by the Ministries' responses (see the graph on next page):

Entrepreneurship education	Competency 7: sense of initiative and entrepreneurship.
Citizenship education	Related to competency 6: social and civic competencies.
Arts education	Directly related to competency 8: cultural awareness and expression, which includes music, performing arts, literature and the visual arts.
Information and Communications Technology (ICT) education	Competency 4: digital competence.
Science, Technology, Engineering and Maths (STEM) education	Directly related to competency number 3: mathematical competence and basic competencies in science and technology, STEM is an acronym referring to the academic disciplines of Science, Technology, Engineering and Mathematics. The term is typically used when addressing education policy and curriculum choices in schools to improve competitiveness in technology development.

Response of the EU Ministry of Education to the question asked:
Are the following IP related matters / topics approached in the national curriculum? Please specify which ones and in what grade (name other relevant topics from the national curriculum if necessary).

INNOVATION	CY	ES	GR	LU	PT	SK	UK[1]							
	CY	ES	GR	PT	SE	SK	UK[1]	UK[2]						
	CY	DK	ES	FR	LV	PT	SE	SK						
	CY	ES	DE[1]	DK	LV	NL	SE							
	HU	MT												
ENTREPRENEURSHIP	CY	CZ	ES	GR	LU	LV	PT	SE	UK[1]	HR				
	CY	CZ	ES	GR	HR	LT	LV	PT	SE	SK	UK[1]			
	CY	CZ	ES	HR	IT	LU	LV	PL	PT	SE	SK			
	CY	CZ	DE[1]	DK	ES	FR	HR	IT	LU	LV	NL	SE		
	HU	MT	UK[3]											
CITIZENSHIP	BE[1]	CY	CZ	DK	ES	GR	HR	LU	LV	PT	SE	UK[1]		
	BE[1]	CY	CZ	ES	GR	HR	LT	LU	LV	PT	SK	SE	UK[1]	UK[2]
	BE[1]	CY	CZ	DK	ES	FR	HR	IT	LT	LU	LV	PT	SE	SK
	BE[1]	CY	CZ	DK	ES	IT	LU	LV	SE					
CREATIVITY	BE[1]	CY	CZ	ES	FI	GR	LV	PT	SE	SK	UK[1]	UK[2]		
	BE[1]	CY	CZ	ES	FI	GR	LV	PT	SE	SK	UK[1]	UK[2]		
	BE[1]	CY	CZ	DK	ES	FR	LV	PT	SE	SK				
	BE[1]	CY	CZ	DE[1]	DK	ES	LV	SE						
	HU	MT	UK[3]											
OWNERSHIP	CZ	FI	GR	LV	PT	SK	UK[1]							
	CZ	FI	GR	LT	LV	SK								
	CZ	FR	IT	LT	LV	SK								
	CZ	CY	DE[1]	HR	IT	LV								
	HU	MT	SI											
PLAGIARISM	CZ	GR	PT	SK										
	CZ	GR	LU	PT	SK	UK[1]								
	CZ	LU	LV	SK										
	CZ	DE[1]	DK	LU	LV									
	HU	MT	SI											



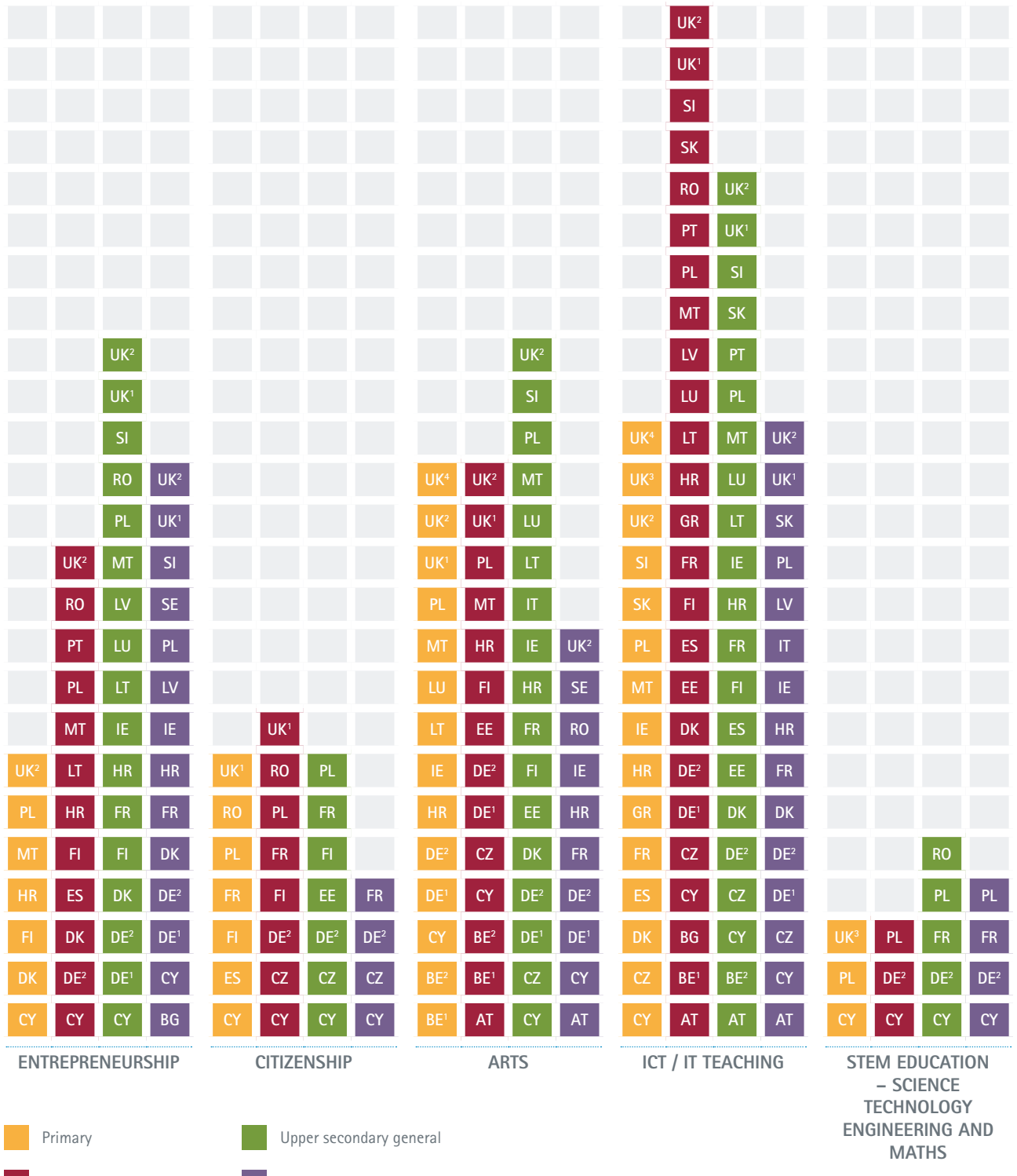
UK[1]: Northern Ireland · UK[2]: Scotland · UK[3]: Wales · UK[4]: England · DE[1]: Berlin · DE[2]: Sachsen · BE[1]: Flemish · BE[2]: French

*N/A: Data was not made available for the countries not represented.

2. 5. Integration of IP education in 33 EU countries/regions

This section summarises the main findings in the five areas of **33 EU countries/regions** (see graph below).

IP connected learning areas mentioned in the curricula of 33 EU countries/regions



UK[1]: Northern Ireland · UK[2]: Scotland · UK[3]: Wales · UK[4]: England · DE[1]: Berlin · DE[2]: Sachsen · BE[1]: Flemish · BE[2]: French

2. 5. 1. Arts

The study seeks to explore both explicit and implicit references to IP within the arts areas, throughout all stages of the school curriculum from early years to post-compulsory education. The following aspects have been considered:

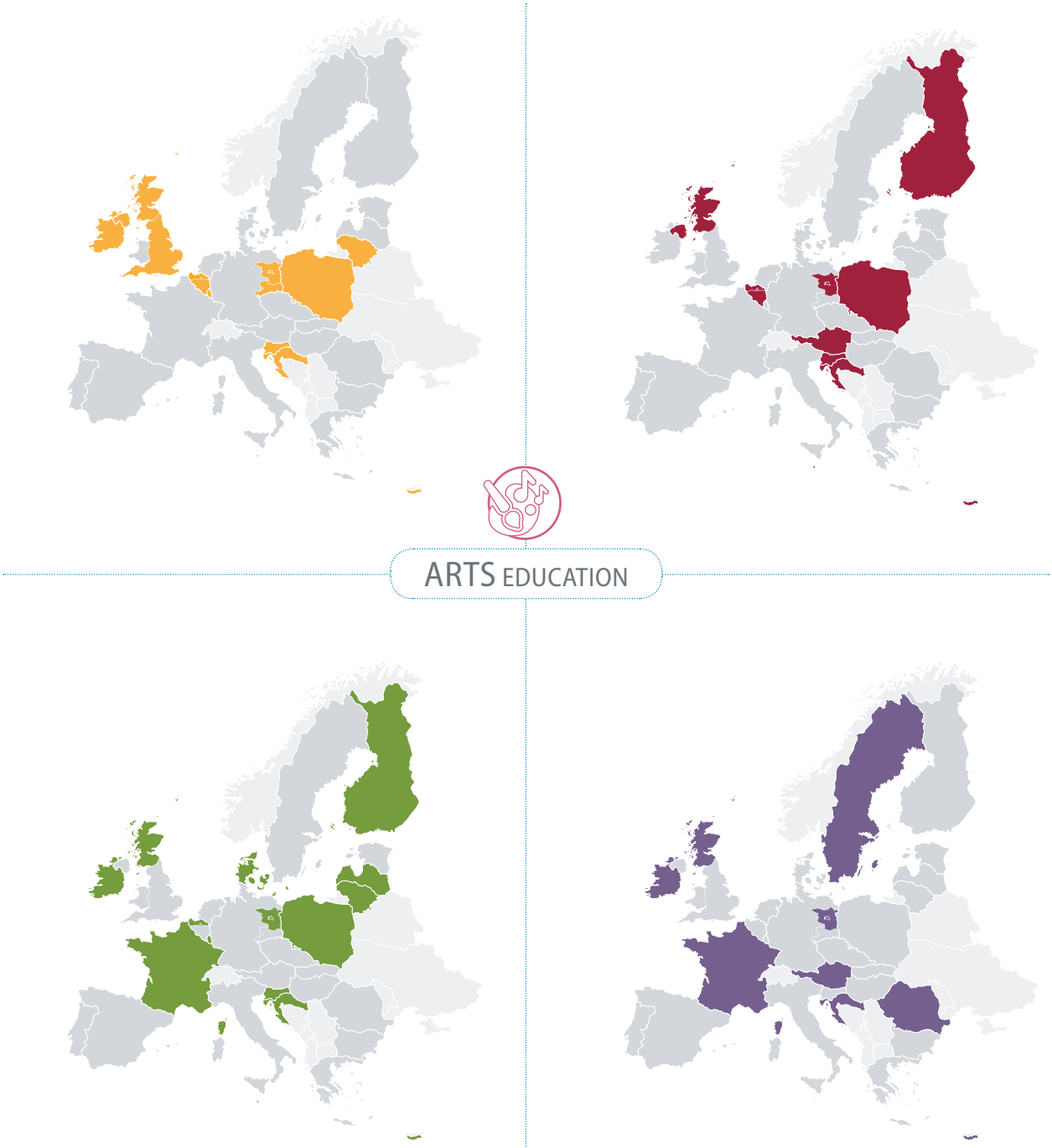
- IP within arts subjects;
- IP within broader cultural education in schools;
- IP within craft and design related subjects;
- IP within broader 'informal' arts activities in schools.

The responses to the questionnaire indicate that a rather limited definition of the arts has been applied. The respondents refer mainly to **music and visual arts.** There is very little mention of drama, dance and crafts (except textiles). Film is only mentioned in certain countries such as France, while computer games are not recognised as a form of art. There is also limited mention of art and cultural institutions – including galleries, orchestras, theatres and museums – despite their key role in arts education, as either curricular or non-curricular activities.

Overall, **the study found a lack of clear working definitions of IP in the arts.**

- In Austria, the protection of property is referred to in the curricula but there is no emphasis on the idea. The internet and new technologies make this issue increasingly important and raise many questions.
- IP is not specified in the national arts curricula of various countries, including Bulgaria, Greece, Portugal, Hungary, Latvia, the Netherlands, Slovakia and Spain. Nor is it a priority in the arts teaching of Denmark, England, Italy, Romania or Slovenia. On the other hand, it is prioritised in the Czech Republic, Croatia, Germany, Malta, Ireland, Scotland and Poland.
- In Croatia, Cyprus, Berlin and Sachsen, IP education within the arts appears to be something of a priority as it is included at all levels of education. In the Czech Republic, it appears at lower and general upper secondary levels.
- In Croatia, there is place for a more concrete mention of trade marks within the global economy of fashion and the protection of students' own design products. In the latter, IP features in the discussion of "private, public, personal, common, material and immaterial ownership" and also appears in media studies, including newspaper production.
- In France, innovative 'discovery teaching' aims to approach the creative process so as to actively promote innovation. The programme encourages pupils to discover why and how a product evolves and how the creative process is indispensable in the development of technological innovations. Intellectual property and invention are studied specifically in one part of the programme.
- In Denmark, copyright and compliance rules are discussed in arts education, as they are in Estonia. In Poland, respect for copyright and intellectual property is included within curricula for music and arts.

IP connected learning areas mentioned in the curricula of the EU countries/regions: Arts Education



In Sweden, the curriculum for arts education aims to develop an awareness of legal and ethical issues concerning copyright in cultural expressions and communications. In Lithuania, music students in secondary education are expected to develop the ability to respect authors' rights.

While the arts curriculum could prove a fruitful and natural arena for IP education, the inclusion of arts education in the curriculum is variable across EU countries/regions. While most include at least music and visual arts in primary school as part of their compulsory education, in most cases the arts become elective for pupils in lower secondary education and beyond. At present, IP education is not being comprehensively covered at any level of the arts curriculum.

2. 5. 2. Entrepreneurship

Learning outcomes in entrepreneurship education enable intellectual property to be approached in a positive light as part of and as integral to the creative process. When pupils learn about entrepreneurship, they also learn about the mechanisms that will enable them to derive value from the intellectual property rights associated with their own ideas.

An entrepreneur may at the same time be a creator of intellectual property, as well as a user of someone else's intellectual property. Entrepreneurship as a separate subject area is only taught in a few Member States, and is usually an optional discipline.

In the study of entrepreneurship, IP is mentioned as a learning outcome in Malta. In Denmark, it is integrated into the study of entrepreneurship, where students can use the Danish Patent and Trademark Office website to strengthen their ideas through patents, trade marks and designs.

Alternatively, it is embedded in the study of entrepreneurship or as part of the national curriculum in other subject areas such as economics, business studies, career education, social sciences, maths, sciences or technology/ICT.

Intellectual property is important to the curriculum in Scotland, with students recommended to undertake at least five days of enterprise education per academic year.[15] The awareness sessions promote the importance of IP and its role in business. To achieve this, the Intellectual Property Office works with organisations throughout the UK such as Young Enterprise, the Enterprise Education Trust and the Education Business Partnership, and produces resources that cover all aspects of IP for a range of students, including the role it plays in business and enterprise.

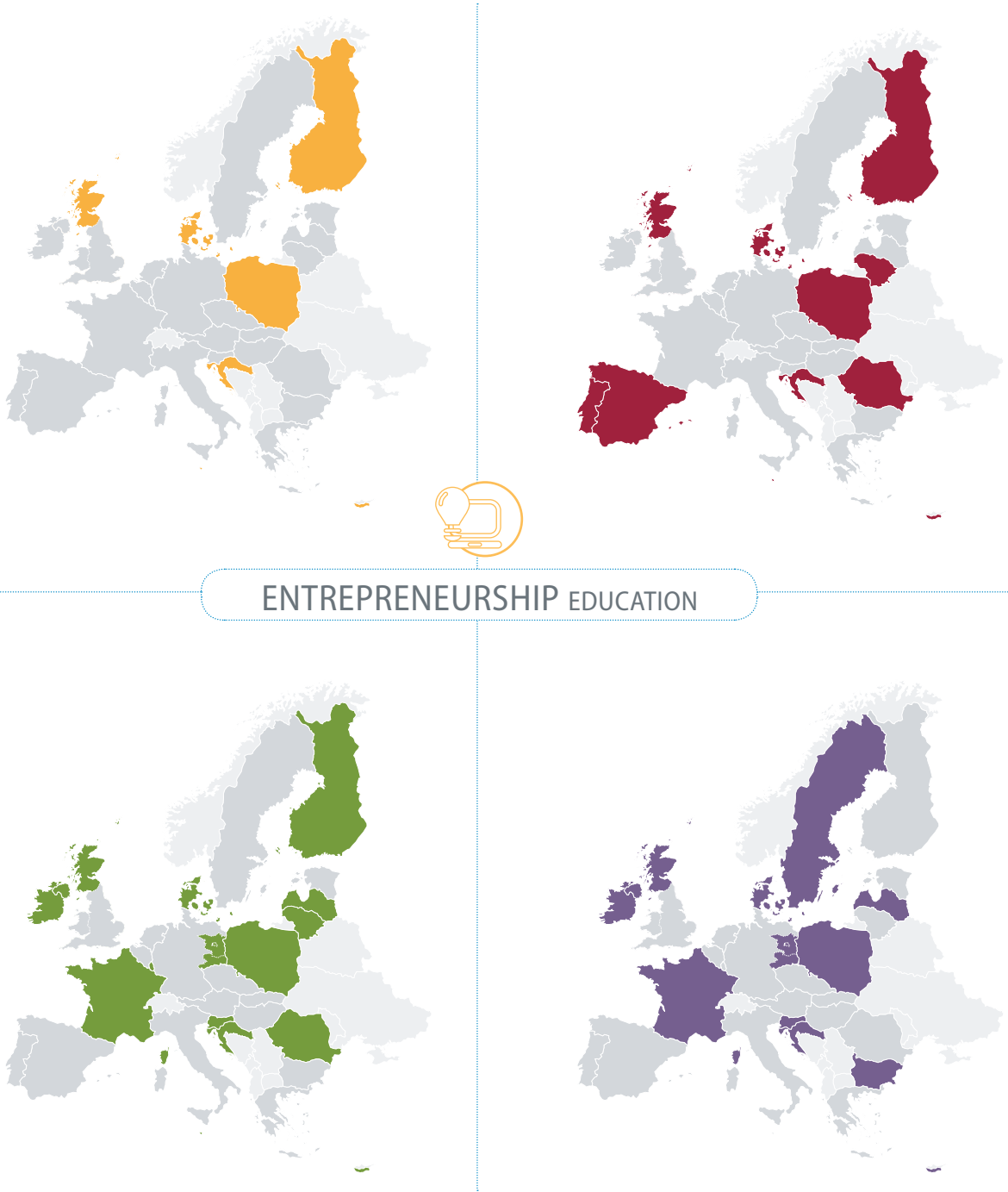
Several countries such as Denmark, Germany, Portugal and Romania have school competitions and contests, which include aspects of IP. The experiential learning methods of competitions and contests are an extremely important way in which both IP and entrepreneurship have been integrated into schools.

In Sweden, IP education is mentioned in entrepreneurship education and the national curriculum, integrated into non-compulsory subjects and identified as good practice in education, as well as forming part of the recommendations for future education.

In Croatia, IP education in entrepreneurship education is a priority. It is mentioned in the national curriculum and is integrated into compulsory subjects. In Slovenia, entrepreneurship in school is a subject that encourages students to develop their own business ideas, as well as to learn about the protection of innovation.

[15] Evaluation of Enterprise Education in England: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/182626/DFE-RR015.pdf

IP connected learning areas mentioned in the curricula of the EU countries/regions: Entrepreneurship Education



2. 5. 3. Citizenship

The objectives related to citizenship education focus on a wide range of topics related to the 'traditional' subjects, such as, for example, human rights and democratic values or socio-political systems, but also on more contemporary or economic issues, such as sustainable development or entrepreneurship. Overall, the objectives are to instil the knowledge, values and attitudes essential for pupils and students to become active and responsible citizens.[16]

It also refers to knowledge and understanding of the main social, legal, economic and political concepts and their European or international dimensions. Examples of this include the rights and responsibilities of citizens, cultural diversity, identity, human rights and international law.

Citizenship education develops values such as respect for knowledge, labour and endeavour, honesty, tolerance, and justice, all of which are necessary, among others, to deal with the ethical issues surrounding the nature of IP. The majority of European countries agree that the area of civic and citizenship education represents one of the most appropriate ways to include and promote IP education in primary and secondary schools.

The majority of respondents refer to a wide range of objectives,[17] focusing mainly on the development of positive behaviours and the acquisition of certain civic skills, attitudes and values. While these expected positive attitudes and values are often directly linked to pupils' and students' digital culture and refer in general to the use of ICT (the internet, computer, media, searching and processing of the information), they are not connected to IP concepts. In several countries, the objectives are clearly associated with the understanding of intellectual property concepts, but do not mention any specific type of IP.

When specific references to IP are included, they mostly concern copyright and its principles. This is the case in Estonia. However, in several countries, including the Czech Republic and Poland, IP is referenced without referring to the term 'copyright'. The terms used to designate this type of IP are mostly 'authors' rights'. In some cases, it is associated with the concepts of plagiarism and piracy.

2. 5. 4. ICT/IT teaching

The ICT/IT curriculum is in rapid evolution, as the role of IT in both the classroom and daily life changes. In some school systems, ICT/IT does not exist as a separate discipline but is embedded across all curricula (notably in France and the Netherlands), or associated with another specific discipline (in Germany, it is delivered through German language learning).

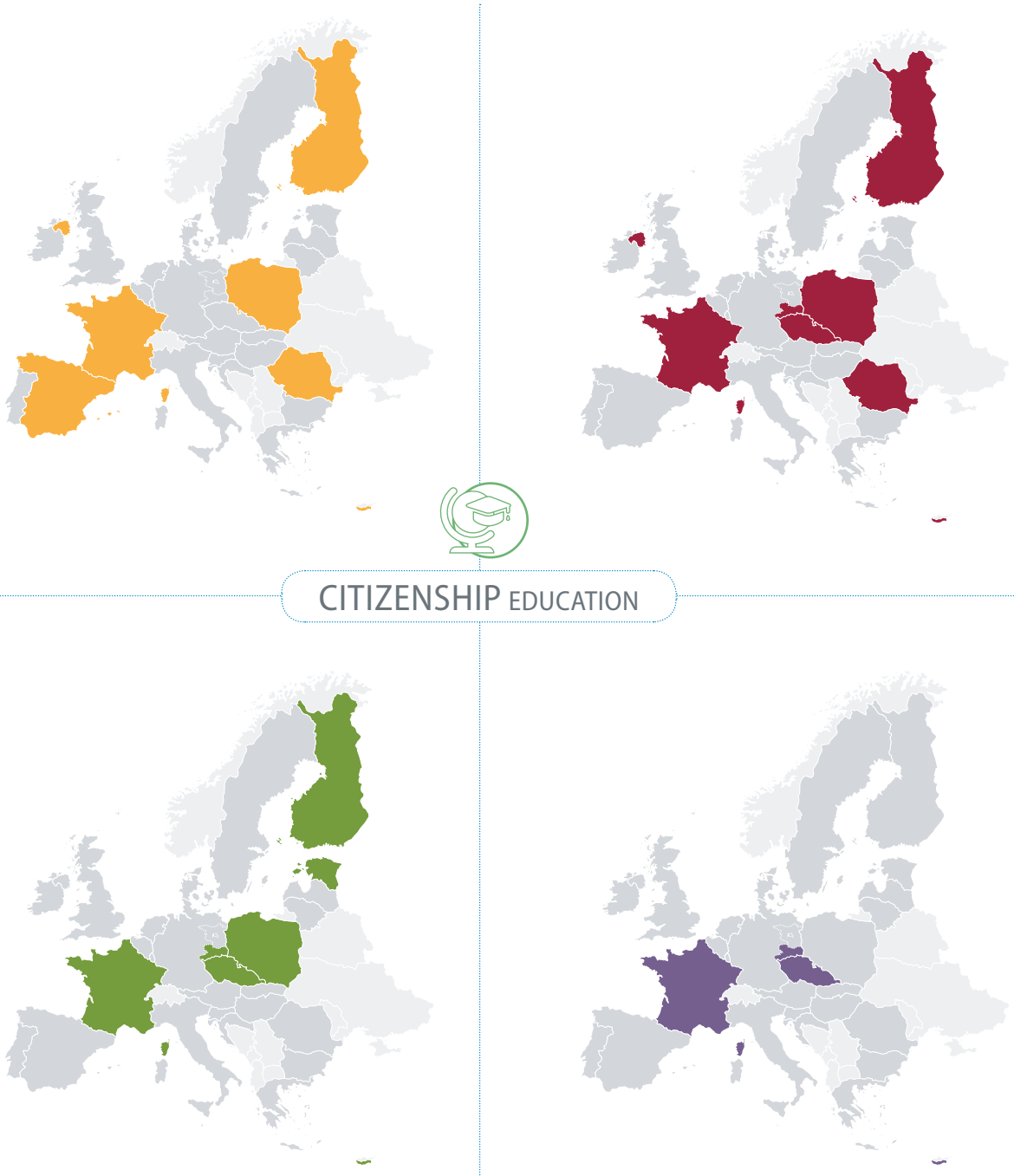
Crucially, the ICT/IT curricula are already linking – to some extent – to IP education content about software issues such as licensing, rights to use software and ownership of online content.

The ICT/IT curriculum area is, in the vast majority of MS, clearly associated with some degree of IP-relevant content around legal awareness (often bundled up with security and privacy) and piracy.

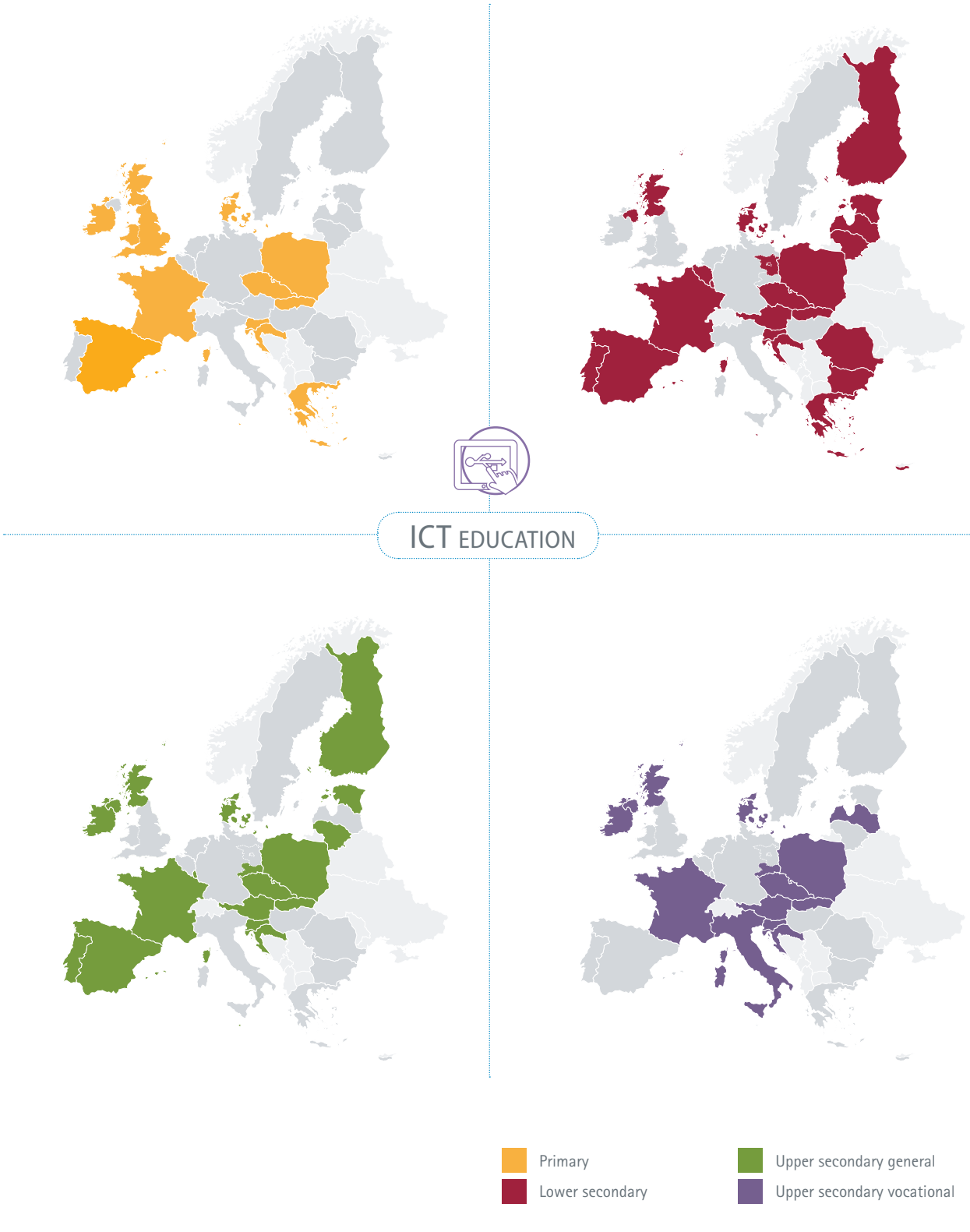
[16] Citizenship Education at School in Europe, Eurydice, 2005.

[17] Depending on the country or region, the curriculum may be expressed in terms of objectives, competencies or learning outcomes to be attained.

IP connected learning areas mentioned in the curricula of the EU countries/regions: Citizenship Education



IP connected learning areas mentioned in the curricula of the EU countries/regions: ICT Education



Several Eastern European countries consistently report a focus on IP in their ICT and IT curricula. Slovakia stands out for thoroughness among its eastern neighbours, with a curriculum that requires pupils to "understand that information, data and programmes are products of intellectual work, they are property and have a value".

Estonia sees IP education as an aspect of supporting students to become innovative people who can use modern technology purposefully and function successfully in the rapidly changing living, studying and working environment. In the Czech Republic, the "protection of intellectual property rights, copyright, informational ethics" is clearly mentioned as a point of the learning content in "information and communications technology in lower secondary education".

In Austria, technology students learn about key measures and legal principles related to data security, privacy and copyright. In Germany, at upper secondary level, information and communications technology students are asked to think about their rights to their own work, copyright, plagiarism and licence models. In Lithuania, within citizenship education, there is a special mention of regulations on the legal use of software and of how authors' rights are protected by law.

Whilst in IT teaching in France, there is an accompanying insistence on the need to use information available on the internet in a civic way, and to be respectful of individuals' rights and of intellectual property.

2. 5. 5. STEM education – Science, Technology, Engineering and Maths

The STEM curriculum has been reformed over the past decade to comprise a wide range of employability skills, such as critical thinking, research processes and team working, in addition to the core domain knowledge.

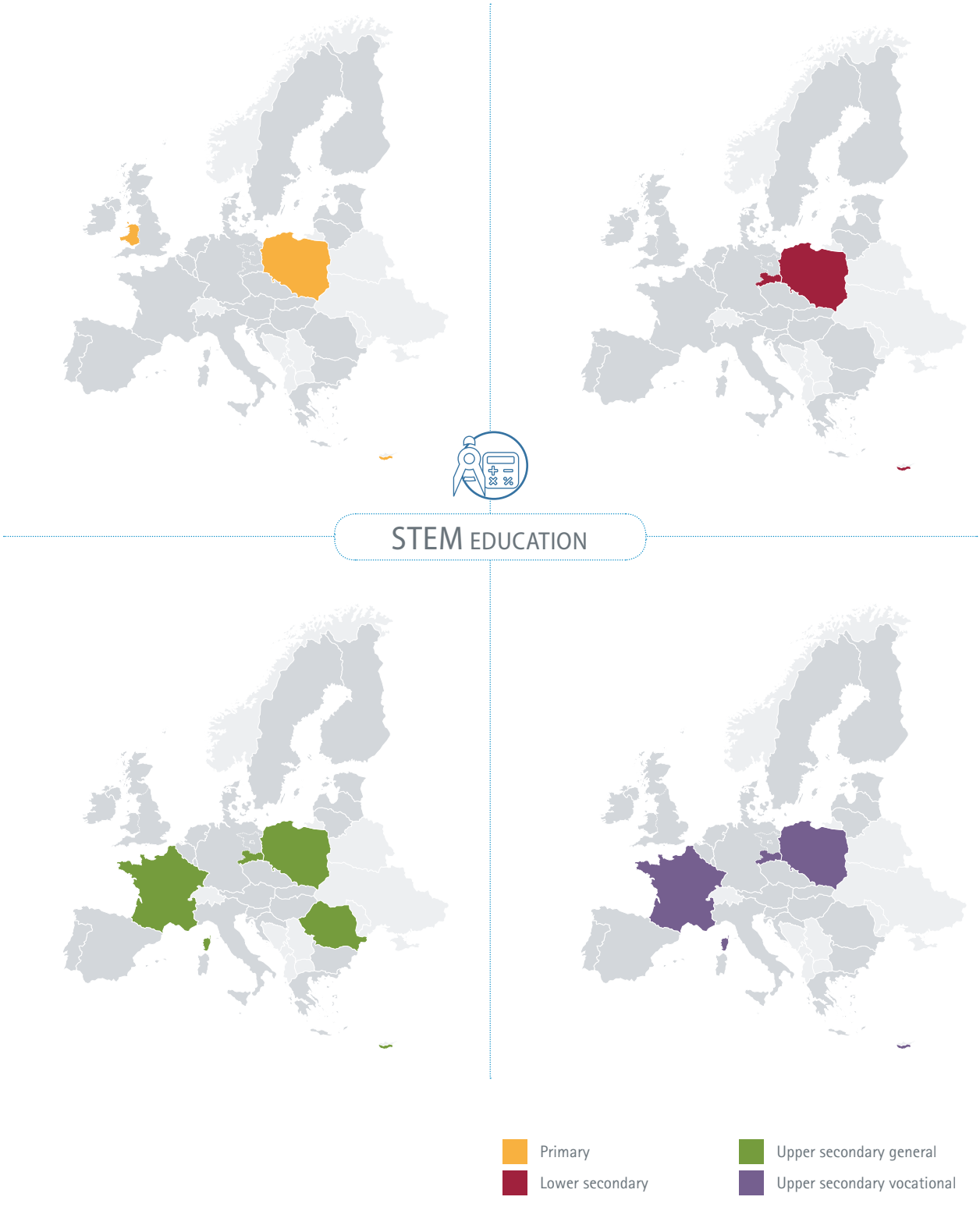
Several rich and potentially relevant STEM education discourses exist at secondary level, such as:

- Ownership of ideas in key scientific processes such as publishing, peer review, hypothesis and exploitation;
- The environmental angle (the ownership of natural resources processed through technological know-how);
- In the emerging "big data" economy, the rights to exploit knowledge derived from analysing data.

The STEM curriculum area does not consistently report IP education content. Less than half of respondents offered any comment at all on IP education associated with STEM subjects. STEM curricula were entirely absent in IP education reports from a number of countries, including Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, England, Scotland and Slovakia. The exceptions are Sachsen, Cyprus and Poland, which address IP in STEM subjects at three or more levels of education.

In the responses that did identify IP education content within the STEM curriculum (Cyprus, Sachsen, Poland, Romania, Wales and France), the association is mostly made through either the process of science-based inventing, or the notion that sciences entail a fundamental humanist respect for the process of accrediting sources. However, it is noteworthy that most nations appear to either not see, or not capture, the relevance of IP in STEM.

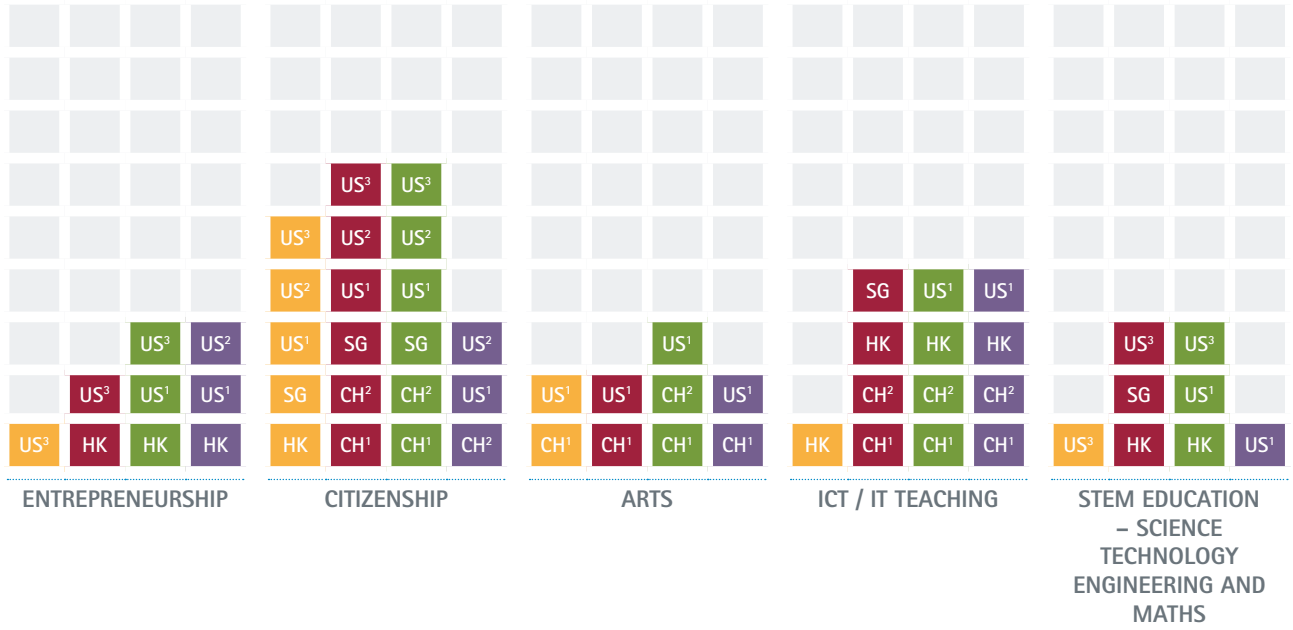
IP connected learning areas mentioned in the curricula of the EU countries/regions: STEM Education



2. 6. Integration of IP education in non-EU countries/regions

This section summarises the main findings in the five learning areas in the non-EU countries/regions:

IP connected learning areas mentioned in the curricula of the non-EU countries



CH[1]: CH (DE) Switzerland (German speaking) · CH[2]: CH (FR) Switzerland (French speaking)
HK: Hong Kong · SG: Singapore · US[1]: CA – California · US[2]: MA- Massachusetts · US[3]: WA – Washington

2. 6. 1. Arts

Arts, as one of the five learning areas of IP identified, seems to be less linked to concrete IP education in the non-EU countries/regions. Only the German speaking part of Switzerland and the U.S. state of California report both explicit and implicit references to IP within the arts areas of their whole school curricula, from primary through to upper secondary and vocational education levels.

In California, the visual and performing arts framework sets standards of ethical behaviour that include understanding the (legal) concept of copyright and applying it.

In German-speaking Switzerland's arts & design classes, students learn about the creation and production process as well as the context of technical inventions and product design. In music classes, students speak about music software and the creative process in music, thus linking creative work and contents with IP learning outcomes.

Furthermore, references to IP in arts have been reported in the French speaking part of Switzerland at upper secondary level. No references of IP in the arts have been reported in Hong Kong, Singapore, or the U.S. states of Massachusetts and Washington.

Nevertheless, some good practices from the U.S. seem to link IP and arts education. The U.S. Register of Copyrights has a programme called 'Creativity in the Classroom', which provides teaching material that clearly links creativity, creative and literary works to value generating and trade processes as well as to IP. The U.S. Film Foundation also provides a curriculum for middle schools on 'The Story of Movies', which links film and its industry to IP issues.

In Singapore, good practices developed by IPOS link arts to IP. The IPOS "School IP Expedition" programme brought popular local artists and actors into schools to speak about the hard work that goes into every piece of creative work, underlining that when others support and honour artists' IP, creators and artists are inspired to create and perform new works and to inject even more effort, skills and resources. Doing so also keeps the local arts and entertainment industry innovative.

Hong Kong's educational authorities in close liaison with IPR stakeholders bring IP professionals into schools. The IP tutors of the school visit programme, run by the Intellectual Property Department, conduct school talks at tertiary level. They organise seminars inviting speakers from the graphic design, music and movie industries etc. to encourage creativity, and to share views and experiences of their working environment and IP protection strategies. Furthermore, the interactive drama programme at primary and secondary schools delivers messages on respect for creativity, originality and IPRs.

2. 6. 2. Entrepreneurship

Entrepreneurship education that clearly presents IP in the official school curricula as an integral part of the creative and value generating process has only been reported in the U.S. and in Hong Kong. The latter teaches IP aspects in entrepreneurship education from lower to upper secondary education levels, including vocational education.

Washington links entrepreneurship to IP education from primary to upper secondary education. California addresses IP in entrepreneurship education only at upper and vocational secondary education, and Massachusetts only in vocational education, where management and entrepreneurship skills are taught. The aim is that students understand the legal, ethical and social responsibilities for businesses.

Switzerland and Singapore do not explicitly link the study of entrepreneurship with IP education.

A good practice linked to IP and entrepreneurship is the school visits programme in Hong Kong, which is organised by the Intellectual Property Department, and occasionally invites professionals that speak about IP and entrepreneurship.

2. 6. 3. Citizenship

In the non-EU countries/regions analysed, the official school curricula often link citizenship education to IP and IP related issues. Whereas this has been done in all three examined U.S. states from primary through to upper secondary education, including vocational education in Massachusetts and California, the link in Switzerland has only been established in lower and secondary education. In Switzerland, students at this level learn, for instance, about the interdependencies of rights, society, culture and the economy.

In California, students follow the history and social science framework, discussing the economic and legal rights and obligations as democratic citizens, as well as their importance to the individual and society – including the IP concepts of patents and copyright. Students in Washington discuss concepts of digital citizenship, the appropriate use of the digital work of others as well as copyright laws and the (un-)ethical use of technology (e.g. hacking, plagiarism and pirating). Furthermore, students explore the concept of copyright by analysing campaigns of fair use in grey areas such as online music.

At vocational level, IP as a learning outcome in citizenship education is an objective in the French-speaking part of Switzerland, as well as in California and Massachusetts. Hong Kong has only reported a link in the official school curricula at primary education level where students learn to be honest, fair, and to respect the rule of law.

Some good practices from the U.S., such as the Partnership for 21st Century Skills Programme or the Skills US programme for high school and university students, as well as the youth webpage from the United States Patent and Trademark Office, link IP learning outcomes with citizenship education.

2. 6. 4. ICT/IT teaching

The ICT/IT curricula in the non-EU countries/regions analysed contain references to IP, especially when it comes to software issues such as licensing, rights to use software and ownership of online content.

In Hong Kong, ICT/IT curricula at all educational levels link to IP aspects. Respecting intellectual property rights when using information technology – as well as using ICT safely, sensibly, legally and ethically – is stressed throughout all education levels.

In both parts of Switzerland, ICT/IT education is linked to IP learning outcomes from lower secondary education to upper vocational education levels. Students learn not only to communicate, search and exchange information on the internet, but also how to protect their own data and the authors' rights of others. Furthermore, students learn to produce their own media contents and learn about laws related to publications on and the use of the internet.

Singapore introduces some references to IP at lower secondary level and California at upper and vocational secondary education. No explicit references have been reported in Massachusetts and Washington.

A wide range of good practices identified in the non-EU countries/regions that are related to digital and media literacy, link IP education with IT/ICT content and learning outcomes. The Ministry of Education of Singapore, for example, established the Edumall's ICT Connections portal. In Hong Kong there is a website about Cyber Ethics for students and youth, and in the U.S., next to the Partnership for 21st Century Skills programme, many websites for students and teachers, especially those related to copyright issues, link ICT/IT with IP issues.

2. 6. 5. STEM education – Science, Technology, Engineering and Maths

STEM education is rarely explicitly linked to IP learning outcomes. From the non-EU countries/regions analysed, only the U.S. state of Washington reports to link STEM and IP education from primary up to upper secondary education. California provides the link only at upper secondary and vocational education levels.

In Hong Kong, students learn about IP aspects in STEM subjects at lower and secondary levels. They specifically learn how and why scientific and technological research should and can be protected. Singapore reports an explicit link at lower secondary level. No references between STEM and IP in the official school curricula have been found in Switzerland or Massachusetts.

There are good practices such as the Science NBC Learning programme led by the U.S. Patent and Trademark Office, and the programme "Jugend forscht" by the Swiss Federal Institute of Intellectual Property that link science and the research and invention process to IP aspects such as ownership of scientific ideas and patents.

2. 7. Integration of IP education: EU and non-EU countries/regions compared

In the EU and non-EU countries/regions, there is a difference within the five learning areas that most commonly include IP and IP related issues in class.

In the EU IP education is mostly integrated into ICT related subjects, followed by arts and entrepreneurship related subjects, while in the non-EU countries/regions it is more integrated into citizenship education, followed by ICT related subjects.

LEARNING AREAS MOST USED TO INCLUDE IP EDUCATION

33 EU countries/regions	Non-EU countries/regions
ICT	Citizenship
Arts	ICT
Entrepreneurship	Entrepreneurship and Arts
Citizenship	STEM
STEM	

IP education in the five learning areas – ICT, Arts, Entrepreneurship, Citizenship and STEM – holds a special place at secondary education level.

In Europe, **ICT** is mostly linked to IP at lower (25 out of 33 EU countries/regions) and upper secondary general levels (21 out of 33 EU countries/regions). 15 EU countries/regions connect IP to ICT at vocational education level and 15 at primary level. In the non-EU countries/regions analysed, IP is taught as a learning area within ICT subjects from lower to upper secondary level in 3 out of 7 countries/regions. At primary level, only Hong Kong defines IP as such in ICT classes.

Arts constitute a relevant learning area for IP education at upper secondary general level in 17 out of 33 EU countries/regions. At lower secondary and primary levels, IP is linked to arts in 14 EU countries/regions, and at vocational level in 10. In the non-EU countries/regions, arts as an IP connected learning area is most relevant at upper secondary general level (3 out of 7 countries/regions), followed by primary and lower and secondary vocational levels (2 out of 7 countries/regions).

Entrepreneurship joins arts as the second most relevant IP-connected learning area in Europe, with 17 EU countries/regions linking IP to entrepreneurship education at upper secondary general level, followed by upper vocational level (14 out of 33 EU countries/regions), lower secondary (12 out of 33 EU countries/regions) and primary education (7 out of 33 EU countries/regions). In the non-EU countries/regions, IP education is less included at primary (1 out of 7 countries/regions) and lower secondary level (2 out of 7 countries/regions), whereas at upper secondary levels, 3 out of 7 countries/regions teach about IP in entrepreneurship-related classes.

IP as a learning outcome is especially relevant in **citizenship** education in the non-EU countries/regions analysed, from primary education level onwards (5 out of 7 countries/regions). At lower and upper secondary levels, IP is a relevant learning outcome taught in citizenship classes (6 out of 7 countries/regions). On the contrary, in EU countries/regions citizenship education is a less relevant learning area for IP education. At upper secondary level, only 7 out of 33 EU countries/regions teach about IP, at lower secondary level only 8, at primary, 7, and at upper vocational level, 4.

In the non-EU countries/regions, **STEM** classes are linked to IP learning outcomes to a greater extent than in the EU Member States: 3 out of 7 non-EU countries/regions at lower and upper secondary general level, 1 at vocational level and 1 at primary level. Out of 33 EU countries/regions, only 5 have defined IP as learning outcomes at upper secondary general, 4 at vocational level, and only 3 EU countries/regions at lower secondary and primary levels.

2. 8. IP education: Good practices in the EU and non-EU countries/ regions

The report reveals many examples of good practice in IP education. These can be categorised as follows:

IP education within the curricula.	Extra-curricular IP education, invariably in private-public collaborations between stakeholders and Ministries of Education or Culture.

By definition, good practice involves informing and raising awareness about IP rights and issues, and creating practices that can be benchmarked and replicated. Students should be encouraged to value innovative and creative work while discovering and using their own creative talents. They should be familiarised with creative work and creative industries through engagement with fellow students, teachers and schools, and through interaction with artists and industry players. To achieve this, they need instructive guides and quality teaching materials.

2. 8. 1. Good practices within the curricula

Education and other relevant ministries such as culture and business development have a key role to play in developing good practices, as do intellectual property offices and, of course, the schools themselves. Good practices can emerge through private-public partnerships through involvement with industry players such as publishers, the music and film industries, trade associations, private foundations and consumer protection bodies.

Good practices within the curricula are almost always carried out by, or in cooperation with public authorities, including ministries of education and other ministries, schools and public libraries. Public authorities may also conceive and/or support the actions by the funding and validation of content provided by private stakeholders. The topics of good practices within the curricula carried out through private-public partnerships are mainly related to IP rights, IP protection and IP infringements, as well as the importance of creative industries and copyright.

Public authorities and private stakeholders may provide information material for teachers and organise different kinds of challenges and sponsorships for schools, students and teachers. For pupils, youth training and summer schools – as well as materials/activities – are made available.

The majority of good practices identified within the curricula concentrate on IP aspects such as copyright, but also on the topics of innovation, inventions and entrepreneurship. Other projects within the school curricula exist on ICT and data management, as well as secure online behaviour.

HIGHLIGHTED GOOD PRACTICES WITHIN THE CURRICULA

CURRICULA ELEMENTS & PILOT CURRICULUM ACTIVITIES

The Romanian Ministry of Education, the Romanian Copyright Office (ORDA) and the State Office for Inventions and Trademarks (OSIM), are jointly working on drafting a national curriculum for an Intellectual Property course. The related course is already encompassed in the 2014 National Curriculum Plan as a priority for drafting, and is envisaged as an optional subject at secondary school level to be implemented in the school year 2015-2016 and will include copyright and related rights (including the issue of plagiarism), patents, trade marks, geographical indications, drawings and designs, and topographies of semiconductor products.

Through the U.S. Library Standards for Public Schools, "Promoting 21st century schools", school libraries in various federal states help prepare students to live and learn in a world of information including the "ethical, legal and safe use of information in print, media and online resources". The Library Standards are to be taught collaboratively by the classroom teacher and the school librarian in the context of the curriculum.

CREATIVITY, INNOVATION, INVENTIONS & ENTREPRENEURSHIP

In Slovenia, the Ministry of Economic Development and Technology financed (from 2010-2012) the project "Celoviti programme spodbujanja ustvarjalnosti, inovativnosti in podjetnosti mladih", a comprehensive programme to promote creativity, innovation and entrepreneurship for young people in which more than 2,000 pupils from primary and secondary schools participated.

In the U.S., the project, "Science NBC Learn", by the National Science Foundation and the U.S. Patent and Trademark Office explores the process of innovation with particular attention paid to patents. As part of this, scientists and engineers who have used patents or trade marks to protect their work share their stories with students. The project includes related lesson plans by the National Science Teachers Association aimed at 6th to 12th grade students and provides teachers with supporting curriculum materials, films, videos and websites.

DATA MANAGEMENT, COPYRIGHT

In Finland, some school districts and towns have their own curricula dealing with IP issues (copyrights etc.). In Tampere, an existing curriculum for data management skills in secondary schools includes the basics of data management in each subject. The data management skills mentioned include the ability to find information and to be critical regarding sources, whilst respecting the copyright and other laws and knowing how to make source references. In particular, music and arts classes enable students to learn more about certain IP issues.

ICT, INTERNET SAFETY AND SECURITY

In Singapore, internet safety and netiquette are taught across all subjects where ICT is used under the umbrella standard of cyber wellness. Cyber wellness is taught at all age groups and the Ministry of Education's Baseline ICT Standards stress their importance.

2. 8. 2. Extra-curricular good practices

Many extra-curricular good practices are carried out exclusively by private stakeholders, mainly from the creative industries, and implicating artists, writers and creative professionals as well as their associated collective societies and networks. Furthermore, teacher associations, private companies and foundations play a role, especially in the IP-related topics of entrepreneurship and ICT. Consumer protection associations are also active in this area.

Private-public partnerships identified in extra-curricular good practices work especially well together regarding the topics of IP, IP protection and IP infringements, creative industries, IP and copyright, creativity, innovation, inventions and entrepreneurship, and civic education, as well as copyright in education.

Private stakeholders offer elements of IP that can be integrated into the curricula of the schools. They run contests and sponsorships for schools, students and teachers and offer training and summer schools for students. Some provide information and teaching material for teachers, as well as information for wider audiences including parents and companies, and materials and inspiration for activities for schoolchildren and young people through websites, and online and offline publications.

Below, we list the topics of IP education in extra-curricular activities and cite related good practices found in the study.

IP, IP PROTECTION & INFRINGEMENTS

In Austria, the "Ideas are valued" programme comprises eight sections covering, among others, IP in the film and music industry and internet use.

CREATIVE INDUSTRIES, IP & COPYRIGHT

The Estonian Intellectual Property and Technology Transfer Centre (EIPTTC), founded by the Estonian Chamber of Commerce and Ministry of Economic Affairs and Communication, offers a wide variety of intellectual property and technology transfer support training, plus educational materials for students and teachers.

ICT, INTERNET SAFETY & SECURITY

In Poland, one of the initiatives aimed at promoting ICT in school, including IP education, and targeted at both teachers and students, is a programme called "Cyfrowa Szkola" (Digital School), which is backed by various ministries.

DIGITAL & MEDIA LITERACY

In Germany, the "Urheberrecht" copyright initiative now works together with more than 30 organisations and unions, representing the interests of around 150,000 copyright holders. The idea is for all branches of creative activity to unite in a discussion forum, which actively supports the interests of the copyright holders.

COPYRIGHT FOR TEACHERS IN EDUCATION

Finland's "Kopiraitti" in is a project designed to help teachers tackle different issues with copyright. The Ministry of Education and Culture has acquired broad copyright permission to copy books and magazines, to print websites and to record and use TV programmes in education, and these permissions can be checked with Kopiraitti. It also emphasises students' rights to their own work.

"IP PROFESSIONALS"

The Portuguese Association for Consumer Protection (DECO) is promoting 18 school conferences about digital consumer rights. "NETtalks"' conferences also address IP-related issues such as respect for copyright and illegal downloads.

In Singapore, IPOS started an outreach programme "IP Expedition" to help primary school students better appreciate the importance of intellectual property and copyright concepts. This was mainly delivered through 30-minute interactive skits organised in primary schools at the end of 2014.

TEACHER TRAINING & INTERACTIONS

On the Swedish Ministry of Education's official webpage, there are six teacher guides on how to use copyright material in education: images, TV, radio and film, internet, music, and texts. There is also a general guide about copyright and one for performing rights regarding theatre. Real examples help teachers inform their students about these rights.

CHALLENGES & SPONSORSHIPS FOR SCHOOLS, STUDENTS AND TEACHERS

In Lithuania, the collective copyright management association LATGA-A launched a short video competition on the topic 'I am an Author. My Rights' for 9th to 12th grade students.

Lithuania's Dot Award 2014 is a competition for students that make their own website and demonstrate that they know how to make practical use of the internet. Judging includes criteria such as reliability of content, whether the webmaster made sure that the content does not infringe upon the copyright of other people or organisations, and whether the website collects personal data, among others. An international jury selects the winners for Best Content, Best Design and Best Use of ICT Tools.

The UK Intellectual Property Office provides a nationwide educational resource called Wallace & Gromit's World of Cracking Ideas, which focuses on the topics of entrepreneurship, innovation, invention and intellectual property and all link to the four UK curricula. The website, featuring the Oscar® winning characters Wallace & Gromit, and developed in partnership with Aardman Animations, targets children aged 4 to 16. It contains educational activities tailored to the curriculum and broken down into three age groups (4 to 7, 8 to 11 and 12 to 16-year-olds), a nationwide competition and games. The aim is to teach children that they can all innovate; they can all own ideas; innovation can be linked to financial reward; and they can commercialise their ideas if they are protected by IP.

The government of Hong Kong has maintained close liaison with IPR holders and youth organisations to encourage the young people to respect and protect IP rights by co-organising and supporting various activities, such as video production, workshops, game design, creative competitions and live music shows. Collaborative partners include among others the HK Reprographic Rights Licensing Society, the Business Software Alliance, the HK Intellectual Property Society and the International Federation against Copyright Theft.

CIVIC EDUCATION

In Austria, the Saferinternet.at website empowers students, parents and teachers regarding the confident, competent and responsible use of digital media. In Portugal, the "Grande C" creativity contest for schools, designed by the Portuguese Association for the Management of Private Copying (AGECOP), endeavours to build literacy on copyright and related rights surrounding the overall strategy to protect intellectual property, and to promote greater awareness regarding the need to protect creativity in the digital environment. Its mission is to engrain the values of creation and preservation of cultural diversity, contributing to the education, awareness and literacy of the younger audience.

In Hong Kong, www.cesy.edb.hkedcity.net, a website about cyber ethics for students and young people, aims to provide guidelines to parents and suggests learning activities for teachers and students on the ethical, legal, psychological and technical issues of cyber ethics. In Singapore, IP rights are part of the "core values" that a citizen should acquire. Students are taught to discern from right and wrong and helped to make responsible choices. There is specific mention of the consequences of infringement.

MATERIALS/ACTIVITIES FOR SCHOOLCHILDREN AND YOUNG PEOPLE

In Denmark, FFE-YE and the Danish Patent and Trademark Office (DKPTO) are behind the website StyrkDinIde.dk (Strengthen Your Idea). Teachers can use the site to introduce students to issues regarding the protection of intellectual property rights. Students can also use the site for answers to their questions, or find inspiration on how to strengthen their ideas through patents, trade marks and designs.

In Singapore, IPOS also created an IP Booklet for primary school students called "A Day in the life of Jacob". The IP booklet contains light-hearted comics and hands-on activities to educate students on the different types of IP as well as the importance of respecting IP rights.

The United States Patent and Trademark Office (USPTO) has a youth-focused webpage that includes interactive games and information targeting children from kindergarten to 6th grade and others from 7th to 12th grade in support of teachers, parents and coaches. The webpage uses different tools focused on IP education that teach children and young people about trade marks, patents and copyright, as well as the ethical use of internet and information.

In Malta, an entrepreneurship project compiled by science students encouraged them to be creative and take ownership of their work and advertise it to other students in the class in the style of a competition. In 2012, Nordic Innovation stated that the training and motivation of teachers in relation to entrepreneurship lags behind the political vision of the Nordic countries for this area. A magazine on the theme was elaborated with cases and examples on how entrepreneurship currently is working in the Nordic countries. There are three cases from Denmark.

In the U.S., the "Creativity in the Classroom" project, backed by the music publishing body ASCAP, provides teaching materials on entrepreneurship, creativity and inventions. Furthermore, the educational programme, "Join the © Team", by the Entertainment Software Association (ESA), introduces intellectual property to primary and lower secondary school students by encouraging creativity and respect for IP. It focuses on activities for parents, teachers and librarians and has developed different resources through activities such as computer projects, learning activities, workshops and class presentations.

The Swiss youth initiative "Jugend forscht CH" organised by the Swiss Federal Institute of Intellectual Property, informs young people about patents, trade marks and designs.

INFORMATION FOR TEACHERS AND TEACHING MATERIAL

The resource library of the Spanish Ministry of Education, Culture and Sport (MECD) offers secondary school teachers the "Learning from the past to create the future: artistic creations and copyright" material to complement literature and art programmes, especially when students are asked to create original works in these areas. This material was created by the World Intellectual Property Organization and translated into Spanish by the Ministry as a concrete action within the government's integrated plan for reducing and eliminating activities that infringe intellectual property.

In Germany, several projects and initiatives are linked to patents. The EPO Patent teaching kit of the European Patent Office (EPO) can be used in economics lessons and the Teacher Portal INSM "Economics and School" provides knowledge about innovation and patents. Another school website provides information about genetic engineering and patents. A lot of offers for children regarding patents exist. The Children's Patent Office, run by the Patent Information Centre of Darmstadt, is an image database of child inventions that will serve as a museum and archive. The website of the Kid's Network offers a large collection of inventions "From Pippi to Blue Jeans" with countless examples of inventions that children encounter in their daily lives. The public TV programme "Nine and a half" presents young inventors.

INFORMATION ON IP FOR ALL AUDIENCES

The training programme of the Hellenic Copyright Organisation for the protection of copyright and related rights aims to raise students' awareness of the importance of copyright for modern society and for the development of creativity and culture.

"B4U Surf" is a website operated by the Business Software Association (BSA) in Singapore that provides information for parents, children and educators on all aspects of internet safety, including the ethical use of the internet. The section for educators complements the Ministry of Education's Cyber Wellness programme.

The UK initiative "Creating Movie Magic", led by Into Film, supports the teaching of IP in design and technology (D&T) at Key Stage 3. It empowers teachers, film club leaders and youth group workers to explain the importance of copyright to young people, encourage respect for the film-making process, open up a debate about the value of IP, and involve them in activities which encourage their own creative talents.

The Slovenian Intellectual Property Office (SIPO) translated and published two publications initiated by the WIPO, entitled "Learn from the Past, Create the Future: Inventions and Patents" (2006), and "Learn from the past, create the future. The arts and copyright" (2011). Both publications can be used for IP education in schools.

The majority of extra-curricular projects and initiatives cover the copyright aspect of IP. Nevertheless, some other interesting projects exist that focus on the three other aspects of IP: trade marks, design and patents.

OFFICE FOR HARMONIZATION
IN THE INTERNAL MARKET
(TRADE MARKS AND DESIGNS)

INTELLECTUAL PROPERTY AND EDUCATION IN EUROPE

STUDY ON IP EDUCATION IN SCHOOL CURRICULA IN THE EU MEMBER STATES
WITH ADDITIONAL INTERNATIONAL COMPARISONS

3. TOWARDS THE FUTURE OF IP EDUCATION

3. TOWARDS THE FUTURE OF IP EDUCATION

The study's findings indicate how IP education could be incorporated into the curriculum and give clear pointers as to where, in the various syllabuses, it might be included in the future.

According to the responses by the ministries of education, the most fruitful areas in which to include IP education are the arts, citizenship, entrepreneurship, ICT teaching and STEM. IP education is not a core curriculum subject, but an area of learning that lends itself to cross-curricular delivery as it is relevant to all subjects that use resource material and lead to the creation of outputs.

Teachers who are trained in creativity hold more positive views about IP education and have the power to unlock their students' creative and innovative potential. Improved teacher training in the area of IP rights, with provision for innovative classroom resources, should enable a better delivery of IP education.

Teachers and school principals need greater information about IP education, starting with a clear definition of what IP education embraces – beyond copyright. Teachers, especially non-specialists, need clear guidance on the specific assessment methods to determine if pupils have successfully achieved IP education learning outcomes. Providing effective guidance on achieving IP education learning outcomes is still a clear challenge, one that requires political consciousness as well as specific teacher training provisions and materials.

Areas of education that focus on creativity and innovation are a natural arena for discussing patents, trade marks, copyright and designs. Pupils will want to know the economic value of their creations and how to protect them.

Some insights from the most innovative countries outside of the EU show that not only the "positive" side of IPR needs to be transmitted to the pupils, but also that which is related to IP infringements, counterfeiting and piracy, therein building a notion of respect and providing a full picture of intellectual property complexity.

Moreover, this study has found that many of the good practices in IP education come from private-public partnerships, in particular between commercial enterprises and relevant government ministries. The report provides stakeholders with a tool based on solid research with which to inform their discussions and negotiations with government.

As a follow-up stage of this report, and based on knowledge obtained from this study, the Office of Harmonization in the Internal Market will focus on creating a specialised network between the educational institutions, notably those that participated in the drafting of this report and stakeholders of the Observatory, in order to work together to develop dedicated teaching programmes for teachers and students, design and coordinate appropriate educational activities and support.

OFFICE FOR HARMONIZATION
IN THE INTERNAL MARKET
(TRADE MARKS AND DESIGNS)

INTELLECTUAL PROPERTY AND EDUCATION IN EUROPE

STUDY ON IP EDUCATION IN SCHOOL CURRICULA IN THE EU MEMBER STATES WITH ADDITIONAL INTERNATIONAL COMPARISONS

ANNEXES

ANNEX 1
NATIONAL/REGIONAL PROFILES

The following section provides a synthesis of the findings obtained from the mapping of the curricula that was carried out. The aim of this section is to provide an overview of ways in which IP is currently integrated into the curricula and provide examples of best practices.

For each country, a brief synopsis of the educational system is provided. This information is obtained from **Eurypedia,**[1] a Eurydice product that presents a comprehensive description of European educational systems.

Primary
Upper secondary general
Lower secondary
Upper secondary vocational

1 Information obtained from: http://eacea.ec.europa.eu/education/eurydice/eurypedia_en.php.

AUSTRIA (AT)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In Austria, competence for legislation in education and its implementation is divided between the Federation (Bund) and the Länder (Bundesländer). The **Federal Ministry of Education and Women's Affairs** has overwhelming responsibility for the system of education.

In Austria, nine years of education are mandatory. The first four years of compulsory education are completed in primary schools. From age ten until the age 14-15 children can attend either a junior high school or secondary school or the lower grades of a higher general secondary school.

Upper secondary education includes higher secondary institutions: gymnasium, trade schools and vocational preparatory schools.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP enters the Austrian curriculum at all levels of education, and in a range of subjects.

At primary level, it comes through in visual design classes, while in upper secondary general it is a topic in computer science. Upper secondary vocational school has done the most to integrate IP and it appears in many different subjects, including technology and computer science, design, economics, law, and media.

Additionally, there are many potential entry points for IP to be further integrated into the curriculum. At primary level, pupils already learn to respect and appreciate the work of others, as well as their own work. In lower and upper secondary levels, they develop their appreciation and respect for creativity and artistic work, and also learn responsible consumer behaviour and responsible use of media and new technologies.

The Austrian Ministry of Education is working on a decree to include the concept of intellectual property in economics and consumer education, and the country has developed various initiatives and good practices to support IP and IP rights.

AUSTRIA (AT)			Primary school education (age 6-10)	Lower secondary education (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN	Visual Design *(Bildnerische Gestaltung)*	■			
		Interior and Surface Design *(Interior-und Surfacedesign)*				■
	PATENT					
	COPYRIGHT	Computer Science *(Informatik)*			■	
		Technologies and Applied Computer Science *(Technologien und Angewandte Informatik)*				■
		Interior and Surface Design *(Interior-und Surfacedesign)*				■
		Economics and Law *(Wirtschaft und Recht)*				■
		Applied Computer Science *(Angewandte Informatik)*				■
		Media Technology *(Medientechnik)*				■
		Media Economy *(Medienwirtschaft)*				■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY				■	
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP					
	ARTS			■		■
	ICT			■	■	■
	STEM					

AT

IP related learning objectives in the curriculum	**Primary:** critical consumer work behaviour, respect and appreciation of other's products, appreciative attitude towards one's own labour and the labour of others, ability to take criticism. **Lower and upper secondary:** critical consumer behaviour, creative design, creative and responsible use of new media and technologies, creative activity, aesthetics education, technical and craft skills, creative attitudes and methods, giftedness regarding professions with artistic or design competence requirements, musical creativity.
Ongoing reforms or debates	Ministry of Education is working on a fundamental decree on economics and consumer education to include the intellectual property concept.
Examples of good practices of IP education	"Ideen sind etwas wert" (Ideas have a value): programme created in 2005 for schools by the Austrian Association of Music Industry with support of the former Federal Ministry for Education, Science and Culture. Since 2006, it has included the film industry and experienced educators. It informs about the importance of creative industries in Austria and intellectual property/copyright. "Safer Internet" programme: informs and provides services and support for teachers, young people and parents on the confident, competent and responsible use of digital media. The initiative is being implemented on behalf of the European Commission, within the framework of the Safer Internet programme (www.saferinternet.at). Initiatives aiming at raising awareness about IP by the trade association Creativ Wirtschaft Austria (CWA), part of the Austrian Federal Economic Chamber (www.creativwirtschaft.at).
IP education addressed in teachers' initial or in service training	

References:

1. Wirtschaftserziehung und VerbraucherInnenbildung (Business and Consumer Education) http://www.bmbf.gv.at/
2. Lehrplan (Curriculum for Primary and General Secondary Education) http://www.bmukk.gv.at
3. Lehrplan (Curriculum of Secondary Colleges and Compulsory Subjects for Higher Technical and Commercial Schools) http://www.htl.at
4. Lehrplan der Fachschule für wirtschaftliche Berufe (Curriculum of College for Economic Professions) http://www.abc. berufsbildendeschulen.at

BELGIUM (Flemish) (BE[1])

INTRODUCTION TO THE EDUCATIONAL SYSTEM

The **Department for Education and Training of the Ministry of Education and Training for the Flemish Community** is responsible for education in Flanders.

Compulsory education in Flanders starts at the age of 6 and ends at 18. There are six years of mandatory primary education consisting of three cycles of two school years until the age of 12.

Like in Wallonia and Brussels, secondary education in Flanders lasts for six years, having three two-year cycles. From the second cycle onwards students decide to follow a more general education leading to university or to specialise in more technical, artistic or professional secondary education in one of these four general school types.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

In Flanders, aspects of IP are taught as a transversal topic at all levels, from primary up to upper secondary general and vocational education. Students discuss IP elements and privacy, especially in arts, philosophy and ICT at lower and upper secondary levels.

Entry points for IP education can be found at all levels when it comes to ethic values and notions of property. There are also numerous IP education entry points at primary level, such as in musical education where students work on the notions of authentic creation, originality, creativity and works of art.

At lower secondary level, other subjects related to creativity, like design and technology, offer space for discussion. Furthermore, students learn about the responsible and safe use of ICT and of information sources, as well as the need to have the author's permission to use texts, photos or cartoons. The respect of other people's work is a social ability learnt in the subject human and society.

Upper secondary levels offer the possibility to approach IP issues in subjects such as philosophy, where the property of artists, scientists and entrepreneurs is discussed. The legal perspective is deepened in political-juridical education, where the rights of oneself and others are an issue of discussion. Students further learn about proper scientific work, including how to collect and use data properly.

BELGIUM (Flemish) (BE[1])			Primary school education (age 6-10)	Lower secondary education (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	ICT		■		
		Philosophy *(Filosofie)*			■	
		Political-juridical *(Politiek-juridisch)*				■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP					
	ARTS		■	■		
	ICT			■		
	STEM					

IP related learning objectives in the curriculum	**All levels:** ethic values, property. **Primary:** musical education (authentic creation, originality, creativity, works of art); world orientation (rules in society). **Lower secondary:** technics, design; creativity, social abilities (respect and appreciation in dealings); mathematics (dimension of human inventiveness); human and society (respect for work); learning (use of different sources of information). **Upper secondary:** philosophy (property of artists, scientists, entrepreneurs,...); political-juridical education (rights of selves and others); proper scientific work (collecting data...).
Ongoing reforms or debates	
Examples of good practices of IP education	
IP education addressed in teachers' initial or in service training	

References:

1. http://www.vlaanderen.be
2. http://www.ond.vlaanderen.be/
3. http://www.go.be/

BELGIUM (French) (BE²)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In the French-speaking federal region of Belgium, the **Department for Educational Development of the Regional Ministry of Education** of Wallonia & Brussels is responsible for implementing government policy.

Education in Belgium is compulsory between the ages of 6 and 18 or until students graduate from secondary school. Primary education begins at the age of 6 and consists of three cycles of two school years until the age of 12.

Secondary education lasts for six years and also consists of three cycles, each lasting two years. During secondary education, a whole range of academic subjects are studied and there is a strong emphasis on learning the different national languages – French, Dutch and German.

Pupils begin to choose different programmes from the second cycle onwards, according to preference and their ability. The options range from a more general education leading to university, or to a specialisation in a more technical, artistic or professional secondary education. There are schools which specialise in one or more of these four general school types.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

In Wallonia & Brussels, IP education exists at all levels as a transversal theme, except vocational. At primary level, it is mentioned in arts classes, while at lower secondary and upper secondary general level, it is included in IT classes. Copyright is a also topic at lower secondary level in the course 'young people and the internet'.

Entry points for IP education in primary and lower secondary education are especially related to research and the use of textual and audio-visual information, as well as data and the ethical, social and political aspects of the sciences. Furthermore, in art education pupils discuss art works, as well as their means of dissemination.

In upper secondary education, entry points can be found mainly in the research, collection and processing of information and while demonstrating how to effectively use different media and the internet.

BELGIUM (French) (BE[2])			Primary school education (age 6-10)	Lower secondary education (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	Young people and internet *(Les jeunes et internet)*		■		
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY			■		
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP					
	ARTS		■	■		
	ICT				■	
	STEM					

BE[2]

IP related learning objectives in the curriculum	**Primary and lower secondary:** recognising information in relation to book references, text, visual document (French); investigating research track, collating information from literature search and consultation with key informants, identifying and correctly recording information drawn from a scientific text, data table, diagram, sketch, photograph or audio-visual document, behavioural nature and the ethical, social, political aspects of sciences. Introduction to Sciences; give and defend opinions on productions, art events and means of dissemination, express an opinion on the production of others, justify mode of expression, performance techniques, the subject, the context, the means used (Art Education). **Upper secondary:** search, collect information (documentation centre, library, museum...), consult effectively different media (written, oral, visual, sound), properly record a reference, process the information with critical thinking (History); conduct a literature search, collect and select information (General Sciences), internet use.
Ongoing reforms or debates	
Examples of good practices of IP education	« Les jeunes et internet : guide pédagogique et ludique »: guide designed to facilitate interaction between teachers and students and introduces students to responsible Internet use while having fun. It focuses on legal records: privacy and protection of personal data, rights of publicity, copyright, content harmful to young people, cyberharassment and right to tranquility, and illegal internet transactions. « Journalistes en herbe » (Young reporters): initiated 2008 by the cell Culture-education of the Ministry of the Federation Wallonia - Brussels to implement, promote and strengthen collaboration between culture and education. "Young reporters" competition promotes creativity, written and graphic expression, through the production of a journal. "Passport ICT" project: aims to make students autonomous in computer use and Internet civic practice. "Discover your Federation" contest starts with the work of Wallonia-Brussels Federation artist (writer, poet, painter, actor, etc.), on which students should base original and unpublished group work, respecting legal provisions on copyright.
IP education addressed in teachers' initial or in service training	

References:

1. Socles de compétences, Enseignement fondamental et premier degré de l'Enseignement secondaire http://www.enseignement.be
2. Arrêté du Gouvernement de la Communauté française déterminant les compétences terminales et savoirs requis à l'issue de la section de transition des humanités générales et technologiques en mathématiques, en sciences de base et en sciences générales et déterminant les compétences terminales et savoirs http://www.ejustice.just.fgov.be

BULGARIA (BG)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

Education in Bulgaria is overseen by the Bulgarian **Ministry of Education and Science**. The administration of school education is organised on four levels: national, regional, municipal and school level.

Primary and lower secondary education is organised as a single structure system, beginning at the age of 7 (or 6 at the discretion of their parents) and consisting of eight years of compulsory schooling. After four years of primary education, students change to a lower secondary junior high school until the age of 15.

Upper secondary education – comprising selective/comprehensive high schools and vocational schools – is compulsory for students until they reach 16 years of age but the vast majority of the population continues their studies up to the 12th grade.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

In Bulgaria, IP education does not enter at primary level, but is integrated as a theme across different curriculum areas from lower secondary level on.

Intellectual property, specifically the IP elements of trade marks and copyright, are addressed at lower secondary level in ICT classes. At upper secondary level it is addressed in the course 'ethics and law', while in vocational education it enters studies about entrepreneurship.

Entry points for IP education are found at lower secondary level; especially in ICT when students learn how to use licensed programmes, data files and other information sources, such as the Internet. At upper secondary level, intellectual property is addressed as a type of property in ethics and law. Furthermore, issues of IP are also touched on when students discuss administrative and commercial procedures.

BULGARIA (BG)			Primary school education* (age 6-10)	Lower secondary education* (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas			■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	*Ethics and Law (Право и етика)*			■	
	DESIGN					
	PATENT					
	COPYRIGHT	*Information Technology (Информационни Технологии)*		■		
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					■
	CITIZENSHIP					
	ARTS					
	ICT			■		
	STEM					

* The curricula as such do not formally separate between primary and lower secondary education. In the study, we have differentiated these levels in term of age.

IP related learning objectives in the curriculum	**Lower secondary:** using programmes and data files, computer work, understanding the right to use licensed programme products and other sources (Information Technology). **Upper secondary:** intellectual property as a type of property, ethics and law; administrative and commercial procedures, work in educational enterprise.
Ongoing reforms or debates	
Examples of good practices of IP education	Competitions on civil education: Ministry of Education's civil education (Гражданско образование) national competition: stimulates students to develop their civil skills and perceptions of civil education, including intellectual property. (http://www.minedu.government.bg)
IP education addressed in teachers' initial or in service training	

References:

1. Ministry of Education and Science http://www.mon.bg
2. Regulations of National Competitions http://www.minedu.government.bg

CROATIA (HR)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

The Croatian education system is centrally managed by the **Ministry of Science, Education and Sports** (MSES).

Primary and lower secondary education is organised as a single structure system, beginning at the age of 6 and consisting of eight years of compulsory schooling.

Upper secondary education is not compulsory, but almost all pupils do enrol in general or vocational upper secondary courses upon completing lower primary level.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP enters all levels of Croatian education, from primary to upper secondary levels. All levels discuss IP in relation to entrepreneurship, arts and ICT. Upper vocational level also discusses the different IP elements in courses related to ICT, aesthetics, business and marketing.

In Croatia there are numerous entry points for IP education at all levels, from primary through to vocational education, while at the higher levels it is also addressed in topics such as industrial design and entrepreneurship. At all levels there is some discussion of IP in relation to computer literacy, copyright of artistic work, innovation, creativity and artistic education. In the school library pupils are taught to respect IP in the way they use and create information.

In upper secondary education IP is touched on in aesthetics and design, where pupils are taught to be aware of the value of their own creations. Likewise, in business law and marketing, trade marks, patents and trade secrets are discussed in the context of industrial design. The use of downloaded, copyrighted content is also discussed in informatics.

CROATIA (HR)			Primary school education* (age 6-10)	Lower secondary education* (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	Legal environment of business *(Pravno okruženje poslovanja)*				■
		Marketing				■
		Aesthetics *(Estetika)*				■
	DESIGN	Legal environment of business *(Pravno okruženje poslovanja)*				■
	PATENT	Legal environment of business *(Pravno okruženje poslovanja)*				■
	COPYRIGHT	Multimedia technologies *(Multimedijske tehnologije)*				■
		Legal environment of business *(Pravno okruženje poslovanja)*				■
		Basics of informatics *(Osnove informatike)*				■
		Business Informatics *(Poslovna informatika)*				■
		Web Contents *(Web sadržaji)*				■
		Informatics *(Informatika)*				■
		Computer Sciences *(Računalstvo)*				■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					■
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP		■	■	■	■
	CITIZENSHIP					
	ARTS		■	■	■	■
	ICT		■	■	■	■
	STEM					

* The curricula as such do not formally separate between primary and lower secondary education. In the study, we have differentiated these levels in term of age.

HR

IP related learning objectives in the curriculum	**All levels:** creativity, cultural heritage, copyrighted artistic works, traditional culture and art (artistic education – music, art, design); innovation, creativity, problem solving, critical thinking, entrepreneurship, computer literacy, use of ICT, civic education. Primary and lower secondary education: citation, quotation, reference, authorship, respecting intellectual property in use and creation of information (school library). **Upper secondary education:** aesthetics (design, aesthetics, awareness of own creations); multi media technologies (legal regulations and copyright); entrepreneurship (patents, licenses); legal environment of business (trade mark, patent, trade secret, industrial design); marketing (trade mark in relation to economic products); copyright/ownership rights for computer programmes; business informatics (legal regulations and copyrights related to audio and video production) web contents and informatics (copyright download use content from computer networks accordingly); industrial design; fashion design (graphic design); politics and economy.
Ongoing reforms or debates	
Examples of good practices of IP education	The vocational education curriculum has a specific compulsory subject that includes entrepreneurship, integrating IP education. The subject aims to develop students' creativity, with specific mention of the concepts: franchising, patents and licensing. "Autori čine svijet ljepšim" ("Authors make the world better"): State Intellectual Property Office (SIPO) campaign: informs about the importance of copyright and art through positive and engaging audio-visual messages. Contains materials for students. (http://www.autori.hr/) "Stop krivotvorinama i piratstvu" ("Stop counterfeiting and piracy"): campaign run by the State Intellectual Property Office (SIPO) and other national stakeholders. The campaign includes public educational actions in various towns. (http://www.stop-krivotvorinama-i-piratstvu.hr/hr/) Summer School on Intellectual property: in Dubrovnik, for university students and young professionals. Organised by WIPO, SIPO and University of Dubrovnik each year. (http://www.wipo. int/academy/en/courses/summer_school/croatia.html)
IP education addressed in teachers' initial or in service training	

References:

1. Curriculum for basic education: http://public.mzos.hr/fgs.axd?id=14181
2. Curriculum for general upper education: http://www.ncvvo.hr
3. Curriculum for vocational upper education: http://www.asoo.hr

CYPRUS (CY)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

The education system in Cyprus is centrally managed by the **Ministry of Education and Culture** (MoEC).

Education is compulsory from the age of 4 years and 8 months to 15 years. Primary education comprises a six-year course of general education, beginning at the age of 5 years and 8 months.

Two types of secondary education are offered: secondary general education and secondary technical and vocational education. Secondary general education consists of two cycles of studies, of three years duration each. The first cycle is the gymnasium and the second is the lyceum. Secondary technical and vocational education comprises the second cycle of secondary education only and it is open to pupils who have successfully graduated from the gymnasium.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is well integrated in the educational system of Cyprus and can be found at ell levels, from primary to upper secondary. It is mentioned at all levels in ICT classes, and is also addressed at all levels in relation to entrepreneurship, citizenship, arts, ICT and STEM classes. In lower secondary education it is also addressed in civic education.

Numerous entry points for IP education exist in Cyprus at all education levels when it comes to civic education and creative subjects; such as music, theatre and art. In the lower secondary, students also learn critical thinking, correct use of new technology and how to behave online. Issues such as copyright, data protection, security of information and software piracy, as well as intellectual property and intellectual property rights are discussed. In upper secondary vocational education, additional entry points can be found in graphic design and photography.

IP education is also addressed in teachers' training.

CYPRUS (CY)			Primary school education (age 6-11)	Lower secondary education (age 11-15)	Upper secondary level (age 15-18)	
					General	Vocational
Inclusion of IP elements in the curriculum*	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	ICT		■		
	DESIGN					
	PATENT					
	COPYRIGHT	ICT	■	■	■	■
		Civic Education *(Κοινωνική και πολιτική αγωγή)*		■		
		Photography (Φωτογραφία)				■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY		■	■	■	■
	PLAGIARISM		■	■	■	■
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP		■	■	■	■
	CITIZENSHIP		■	■	■	■
	ARTS		■	■	■	■
	ICT		■	■	■	■
	STEM		■	■	■	■

* Across the curriculum through projects (e.g. Safe Internet project.)

IP related learning objectives in the curriculum	**All levels:** civic education, music, theatre, art. **Lower secondary:** critical thinking, new technologies, copyright protection, security of information, behaviour on the internet, software piracy, legal issues of the use of non-original software, intellectual property (informatics); human rights, intellectual property rights, civic education. **Upper secondary (vocational):** intellectual property rights, graphic design, photography (image banks).
Ongoing reforms or debates	
Examples of good practices of IP education	Cyprus' engagement with IP has to be highlighted. In the presentation of the Universal Declaration of Human Rights (Article 27) it is written: "Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits. Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author." Cyprus holds to this through initiatives such as Safer Internet and Creative Commons Initiative in Cyprus.
IP education addressed in teachers' initial or in service training	Workshops/seminars/presentations for in-service teachers Conferences (16/11/13).

References:

1. Socles de compétences, Enseignement fondamental et premier degré de l'Enseignement secondaire http://www.enseignement.be
2. Arrêté du Gouvernement de la Communauté française déterminant les compétences terminales et savoirs requis à l'issue de la section de transition des humanités générales et technologiques en mathématiques, en sciences de base et en sciences générales et déterminant les compétences terminales et savoirs http://www.ejustice.just.fgov.be

CZECH REPUBLIC (CZ)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In the Czech Republic, the Ministry of Education, Youth and Sports determines the integrated state educational policy, while regions are responsible for upper and tertiary education on their territory and communities for pre-primary education and compulsory schooling.

Education is compulsory for nine years, usually from the ages of 6 to 15. Primary and lower secondary education is organised mostly within a single-structure system, in nine-year basic schools, which are divided into the first and second stage.

Upper secondary education is provided by upper secondary schools in general and vocational fields. The age of pupils is usually 15 to 18/19.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

In the Czech Republic, IP is an integrated topic at all levels of primary and secondary education. Copyright is especially integrated, and IP also enters learning areas like ICT, arts and citizenship.

There are also plenty of additional entry points for IP education at all levels. Next to learning about copyright in the subjects of ICT and publishing or photography, students learn about creativity, creative thinking and positive attitudes towards art works, ownership and property. In this respect students discuss the legal protection of property; including issues of infringement, rights and obligations, illegal acting, IP rights and their protection. Furthermore, learning about intellectual values, ethics and civic education is highly valued. Likewise, digital literacy and the proper and responsible use of information and communication technologies is also taught.

CZECH REPUBLIC (CZ)			Primary school education* (age 6-10)	Lower secondary education* (age 10-15)	Upper secondary level (age 15-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	/nformation Science and Information and Communication Technologies *(Informatika a informační a komunikační technologie)*		■	■	
		Publishing *(Nakladatelství)*				■
		Photography *(Fotograf)*				■
		Man and his World *(Člověk a jeho svět)*	■			
		Media and Media Production *(Média a mediální produkce)*			■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP			■	■	■
	ARTS			■	■	
	ICT		■	■	■	■
	STEM					

* The curricula as such do not formally separate between primary and lower secondary education. In the study, we have differentiated these levels in term of age.

CZ

IP related learning objectives in the curriculum	All levels: creativity, creative thinking, positive attitude towards art works, creativity, ownership, property, legal protection of property and intellectual values, infringement, rights and obligations, illigal acting, IP rights and protection, information and communication technologies, digital literacy, ethics, civic education.
Ongoing reforms or debates	
Examples of good practices of IP education	Basic education – primary and lower secondary level: Pupils develop a "positive relationship towards work" and take "responsibility for the quality of their own and conjoint work results". They achieve "orientation in different areas of human activity, forms of physical and intellectual work and adopt necessary knowledge and abilities, relevant for self-realisation and for the selection of one's professional focus". An inter-departmental working group led by the Ministry of Education, Youth and Sports: established in 2012 with focus on preparation of official supportive guidelines for schools, directors and teachers, with possible links to IP. Working group included representatives of relevant ministries, experts and multimedia content managers.
IP education addressed in teachers' initial or in service training	IP is addressed in the education of future teachers and in adult education.

References:

1. Educational framework programme for basic education
http://www.msmt.cz/vzdelavani/zakladni-vzdelavani/upraveny-ramcovyvzdelavaci- program-pro-zakladni-vzdelavani
2. Educational framework programme for grammar schools
http://www.msmt.cz/vzdelavani/skolstvi-v-cr/skolskareforma/ramcovevzdelavaci- programy
3. http://zpd.nuov.cz
4. http://www.msmt.cz/

DENMARK (DK)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

The education system in Denmark is centrally managed by the **Ministry of Education** who are responsible for schools at primary, lower and upper secondary level and their curricula.

Education is compulsory between the ages of 6 and 16. Compulsory education consists of ten years of a single-structure education, combining primary and lower secondary education, including one pre-school year.

Upper secondary education and vocational education and training is usually from age 16 to 19. In the field of vocational education and training, sectoral committees – with equal representation of the labour market organisations concerned – play an important role in defining and developing vocational qualifications and stipulating the training conditions.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic at all levels of education. At lower secondary level it is discussed in photography, while at upper secondary level copyright is discussed in history of ideas, IT and technology. In primary education, as well as lower and upper secondary, IP enters through entrepreneurship and ICT studies. IP is not mentioned at the upper secondary vocational level.

Entry points for IP education in primary and lower secondary can be found in subjects such as entrepreneurship, innovation, culture and ICT. Furthermore, students learn digital competencies and about information searching, as well as the use of information from the internet. In lower secondary, they also discuss ethics and morals, in the context of digital publishing.

At upper secondary, students learn about their rights and duties in society, copyright rules and other relevant data legislation in the field of information technology. Legal and ethical aspects of communication and the internet are learnt. Students also learn innovative and creative skills, critical thinking and entrepreneurship, all of which present good entry points for IP education.

DENMARK (DK)			Primary school education* (age 6-10)	Lower secondary education* (age 10-17)	Upper secondary level (age 17-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	History of Ideas *(Idehistorie)*			■	
		History of Technology *(Teknologihistorie)*			■	
		Photography *(Fotolære)*		■		
		International Technology and Culture (optional) *(International teknologi og kultur)*			■	
		Technology *(Teknologi)*			■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP		■	■	■	■
	CITIZENSHIP					
	ARTS				■	
	ICT		■	■	■	■
	STEM					

* The curricula as such do not formally separate between primary and lower secondary education. In the study, we have differentiated these levels in term of age.

IP related learning objectives in the curriculum	**Primary and lower secondary:** entrepreneurship and innovation culture, digital competences, use of information from the Internet, information search and retrieval, technologies and communication, critical skills, ethics and morale in the context of digital publishing (lower secondary). **Upper secondary:** rights and duties in a society, innovative and creative skills, creativity, critical thinking, knowledge of business technologies, copyright rules, innovation and entrepreneurship, creative work, innovative projects, relevant data legislation, information technology, internet use, legal and ethical aspects of communication.
Ongoing reforms or debates	"Entrepreneurship within General Study Preparation" project: Ministry of Education experiment on how innovation fits with the general upper secondary school profile, initially as an integral part of general study preparation. Innovation should become a natural part of upper secondary education. 2012-13 school year, 53 public upper secondary schools participated in a pilot project, which was evaluated as excellent among the participants. No further plans for the future. http://www.uvm.dk
Examples of good practices of IP education	IP education in entrepreneurship education: defines skills, attitudes and knowledge that may be acquired through IP education; recommends how IP education should be implemented outside the national curriculum as well; teaching approaches are recommended and best practices and other relevant information are shared to facilitate teachers. "StyrkDinIde.dk" (Strengthen Your Idea): website developed by Foundation for Entrepreneurship – Young Enterprise (FFE-YE, http://eng.ffe-ye.dk) and the Danish Patent and Trade mark Office (DKPTO, www.dkpto.org). IP materials for teachers and students; information on patents, trade marks and designs. Ministry of Education portal: offers IP resources, e.g. the book: "Who owns the music?" Texts on copyright about images and arts available at http://www.emu.dk Ministry of Culture miniguide on copyright; easily readable and appropriate for primary school students. (http://www.kum.dk) Ministry of Education campaign: attracting pioneers in education: http://www.uvm.dk/Aktuelt/~/UVM-DK/Content/News/Aktuelt/2007/Mar/070315-Pris-til-pionerer?a-llowCookies=on Pioneer awards 2008, 2009 and 2010: http://www.uvm.dk/Aktuelt/~/UVM-DK/Content/News/Aktuelt/2009/Sep/090902-Pionerpri-sens-vindere-fundet "Når jeg bliver stor: Nordisk magasin om entreprenørskab i grundskolen" ("When I grow up:"): Nor-dic magazine on entrepreneurship in primary schools. (https://www.mm.dk/pdf.php?id=67864) The Foundation for Entrepreneurship – Young Enterprise Young (FFE-YE): private commercial foun-dation and focal point for the development of entrepreneurship teaching at all educational levels, from primary school to PhD. (http://eng.ffe-ye.dk) Schools and educational institutions can apply for support for projects related to entrepreneurship. Financed through a mix of governmental and private funds. (http://eng.ffe-ye.dk/knowledge-center/entrepreneurship-education/entrepreneurship-in-the-teaching)
IP education addressed in teachers' initial or in service training	Recommendations (teaching orientations) are part of the curricula, or common goals, for primary and secondary education. IP is mentioned indirectly under "The students' all-round development". The recommendation is to ensure students have necessary skills in source criticism and good internet behaviour.

References:

1. Danish Ministry of Education: http://www.emu.dk
2. Ministry of Culture miniguide: http://www.kum.dk
3. Entrepreneurship within General Study Preparation: http://eng.uvm.dk
4. https://www.retsinformation.dk

ENGLAND (UK[4])

INTRODUCTION TO THE EDUCATIONAL SYSTEM

Overall responsibility for the education service in England lies with the UK government. Two ministerial government departments have responsibility for education. The Department for Education **(DfE)** is responsible for the education service in schools and early years settings and the Department for Business, Innovation and Skills **(BIS)** is responsible for science, innovation and skills, and further adult and higher education and enterprise.

Full-time education is compulsory between the ages of 5 and 16 years. Primary and lower secondary education are organised in three key stages and schools follow the programmes set out in the national curriculum.

The great majority of young people continue with full-time education after the age of 16. In upper secondary education (Key Stage 4) English, maths and science and religious education are mandatory and complemented by a broad and balanced curriculum. Vocational qualifications (currently the focus of reform) are also available for study, alongside the General Certificate of Secondary Education (GCSE).

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP enters the English curriculum primary level, through the IP-related learning areas of arts and ICT. There are also numerous entry points.

In primary education (Key Stages 1 and 2), IP entry points exist especially in the ICT subject, where students learn how to safely, respectfully and responsibly use technology, the internet and computing programmes. In lower secondary (Key Stage 3) students are taught about the developments in design and technology, its impact on individuals, society and the environment and the responsibilities of designers, engineers and technologists.

At lower and upper secondary (Key Stages 3 and 4) students learn to be responsible citizens and about their rights and responsibilities; ensuring that they also are responsible, competent, confident and creative users of information and communication technology. Students are specifically taught to create, re-use, revise and repurpose digital artefacts for a given audience and also how to protect their online identity and privacy.

ENGLAND (UK[4])			Primary school education key stage 1 (age 5-7) key stage 2 (age 7-11)	Lower secondary education key stage 3 (age 7-14)	Upper secondary level key stage 4 (age 14-18)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■			
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT					
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP					
	ARTS		■			
	ICT		■			
	STEM					

UK[4]

IP related learning objectives in the curriculum	**Key stages 1 and 2:** use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour (computing programmes of study). **Key stage 3:** understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists (design and technology programmes of study); take account of new evidence and ideas, together with the importance of publishing results and peer review (science programmes of study). **Key stages 3 and 4:** explore political and social issues critically, weigh evidence, debate and make reasoned arguments; prepare pupils to take their place in society as responsible citizens, deepen pupils' understanding of rights and responsibilities of citizens, human rights and international law (citizenship programmes of study); ensure that all pupils are responsible, competent, confident and creative users of information and communication technology, and are taught to create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability, understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns, understand how changes in technology affect safety, including new ways to protect their online privacy and identity (computing programmes of study).
Ongoing reforms or debates	
Examples of good practices of IP education	The inclusion of intellectual property in the UK's new computing curriculum was achieved at the insistence of BCS, The Chartered Institute for IT; this example demonstrates the value of engaging broader stakeholders. (http://www.bcs.org/upload/pdf/cas-national-curriculum.pdf) "Cracking Ideas": competition involving participation of 4.000 schoolchildren, organised by UKIPO in age groups of 4 to 7 years, 8 to 11 years, and 12 to 16 year olds. (http://www.crackingideas.com/competition/) UKIPO resource Think Kit provides teacher resources for IP lesson plans for 14-16 year olds. http://www.ipo.gov.uk/whyuse/education/education-thinkkit.htm IP issues are explored through interactive presentations followed by discussions, teacher plans and follow up activities with teacher resources running alongside each case study. (http://webarchive.nationalarchives.gov.uk/20140603093549/http:/www.ipo.gov.uk/whyuse/education/education-schoolsupport.htm) Creating Movie Magic, (led by Into Film) is a free resource that supports the teaching of IP in design and technology (D&T) at Key Stage 3. It empowers teachers, film club leaders and youth group workers to explain the importance of copyright to young people, encourages a respect for the film making process, opens up debate about the value of IP and involves youth in activities which encourage their own creative talents. http://www.intofilm.org/creating-movie-magic
IP education addressed in teachers' initial or in service training	

References:

1. UK Curriculum: www.gov.uk/dfe/nationalcurriculum

ESTONIA (EE)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In Estonia, general education and vocational education is centrally managed by the Estonian government of education who provides a uniform national curriculum, on the basis of which schools compile their own curricula.

The obligation to attend school applies to children who are 7 to 17 years old. Basic education, including primary and lower secondary education, lasts for nine years.

Secondary education is based on basic education and is divided into general secondary education; which is acquired in upper secondary schools, and vocational secondary education; which is acquired in vocational schools. The length of general upper secondary education is three years.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

Intellectual property is an integrated topic from lower secondary level upwards. Trade marks, patents, design and copyright are all discussed at upper secondary level and IP is referenced in primary and secondary arts teaching, as well as secondary ICT.

At primary education level, entry points for IP education can especially be found in arts studies and visual arts (including drawings, cinema, photography, design and numerical arts).

At lower secondary level, students start learning about social values, norms, rules and ethics; as well as about the value of their own work and other people's work in 'civics and citizenship' and 'people and law'.

Furthermore, in IT and 'media and information', students are taught new technologies, critical and innovative skills, and how to use the media, information and the internet safely and in a responsible manner. Students acquire knowledge about intellectual property requirements and the protection of copyright.

Upper secondary level additionally teaches students about product design and cultural traditions in technology and new technologies. In social studies, a strong focus is put on IT law and acts; on the protection of personal data and files, copyright, IT crimes, software law enforcement and rights of use; along with issues such as licensing, piracy and referencing.

ESTONIA (EE)			Primary school education* (age 6-10)	Lower secondary education* (age 10-16)	Upper secondary level (age 16-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas			■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	People and Law (optional) *(Inimene ja seadus)*			■	
	DESIGN	Computer Studies *(Arvutierialade)*				■
	PATENT	People and Law (optional) *(Inimene ja seadus)*			■	
	COPYRIGHT	Civics and Citizenship Education *(Ühiskonnaõpetus)*			■	
		People and Law (optional) *(Inimene ja seadus)*				■
		IT Legislation *(IT õigus)*				■
		Media and Information *(Meedia ja teave)*		■		
		Civics and Citizenship Education *(Ühiskonnaõpetus)*			■	
		Information Environment *(Teabekeskkond)*			■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP				■	
	ARTS			■	■	
	ICT			■	■	
	STEM					

* The curricula as such do not formally separate between primary and lower secondary education. In the study, we have differentiated these levels in term of age.

IP related learning objectives in the curriculum	**Primary:** arts studies, visual arts (including drawings, cinema, photography, design and numerical arts). **Lower secondary:** social values, norms and rules, value of one's own work and the work of others, creations of others, internet use, safety and intellectual property requirements, protection of copyright, new technologies, ethics, critical and innovative skills, media and information. **Upper secondary:** social values and moral norms; copyright protection rules, civics and citizenship education, critical skills, ethics, dangers arising from the use of technology, product design; cultural traditions technology, new technologies, social study (IT law and acts, protection of personal data and files, copyright, IT crimes, software law enforcement, rights of use, licence, pirate copy, referencing, etc.).
Ongoing reforms or debates	
Examples of good practices of IP education	The Estonian Intellectual Property and Technology Transfer Centre (EIPTTC, http://www.eitk.ee/en/), founded by Estonian Chamber of Commerce and Ministry of Economic Affairs and Communication, offers IP and technology transfer support training and educational materials for students and teachers. Educational materials--e-books, videos and comics--are available in Estonian. (http:// www.autor.ee/)
IP education addressed in teachers' initial or in service training	

References:

1. http://www.hm.ee (National Curriculum for Basic and Upper Secondary Schools)
2. https://www.riigiteataja.ee/ent

FINLAND (FI)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In Finland, education is the responsibility of the Ministry of Education and Culture. The Finnish National Board of Education works with the Ministry to develop educational aims, content and methods for primary, upper secondary and adult education. Schools have a large amount of autonomy in designing their own curricula and education.

Compulsory education, including primary and lower secondary education begins at age 7 and lasts for nine years. It is provided in a single structure system called basic education.

Upper secondary education is provided by general and vocational upper secondary schools. The general age to take upper secondary studies is from 16 to 19 years.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

Intellectual property is an integrated topic at all levels of secondary education. Design, copyright and confidentiality are all discussed at upper vocational level, while IP is referenced at either lower or upper secondary level teaching of entrepreneurship, arts, ICT and citizenship.

In Finland, students at all levels are taught creative thinking and associative skills, as well as concepts of expression and creativity. Interaction skills and positive experiences within artistic education are highly valued in the Finnish education system.

Entry points for IP education in primary and lower secondary are especially found in subjects linked to participatory citizenship and entrepreneurship; with teachings about ethics, rights, rules, laws, obligations and responsibilities, entrepreneurship and its importance to society. Furthermore, students learn about communication and media skills in their first years at school.

Within upper secondary, students learn more about working and economic life, entrepreneurship and citizenship and should acquire a certain amount of communication and media competence. In vocational schools, students also learn about copyright, consumer protection and design.

FINLAND (FI)			Primary school education* (age 7-10)	Lower secondary education* (age 10-16)	Upper secondary level (age 16-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					■ **
	PATENT					
	COPYRIGHT					■ **
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					■
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP		■	■	■	
	CITIZENSHIP		■	■	■	
	ARTS			■	■	
	ICT			■	■	
	STEM					

* The curricula as such do not formally separate between primary and lower secondary education. In the study, we have differentiated these levels in term of age.

** Music and craft schools.

FI

IP related learning objectives in the curriculum	**Primary and lower secondary:** ethics, rights, obligations and responsibilities within a group, entrepreneurship and its importance to society. Communication and Media skills (IESTINTÄ JA MEDIATAITO), Growth as a person, Participatory Citizenship and Entrepreneurship. **Lower and upper secondary:** ethical issues, rules, laws, entrepreneurship, active citizenship, etc. (social studies). **Upper secondary:** working and economic life and entrepreneurship, ethical issues concerning individuals and communities, direct and indirect consequences of choices (general objectives); active citizenship and entrepreneurship, technology and society, communication and media competence. Active citizenship and entrepreneurship: safety and well-being; sustainable development; cultural identity and knowledge of cultures; technology and society; communication and media competence. **Upper secondary (vocational) schools**:** several mentions about copyrights especially in the parts student evaluation, consumer protection, design, copyrights privacy laws and copyright laws. **All levels concerned:** creative thinking and associative skills, expression, creativity, interaction skills and positive experiences within artistic education.
Ongoing reforms or debates	The Finnish national core curricula (primary and lower secondary education) are being reformed and the new curricula will be introduced in August 2016. In September-October 2014, the stakeholders will be asked to give their feedback.
Examples of good practices of IP education	Some school districts have their own curricula dealing with IP issues. Curriculum from Tampere introduces a set of transversal skills dealing with IP issues, copyrights, etc., that should be applied in each subject; students develop the ability to find information, be critical with sources, respect copyrights and other laws, learn to make source references, etc. (http://tietohaltuun.wordpress.com/tiedonhallintataitojen-opetussuunnitelma/) "Kopiraitti": online copyright guide produced in co-operation with "Kopiosto" (copyright organisation for authors, publishers and performing artists) and the Ministry of Education and Culture. The guide provides copyright information to schools, and emphasizes students' rights to their own work. It has been developed for teachers to clarify copyright issues. The Ministry of Education and Culture has acquired broad copyright permission for educational institutions: copying books and magazines, printing from websites, recording and use of TV shows in education; teachers can check copyright permission in the Kopiraitti guide. (www.kopiraitti.fi)
IP education addressed in teachers' initial or in service training	

References:

1. Primary education: http://oph.fi/english/curricula_and_qualifications/basic_education
2. General upper secondary education: http://oph.fi/english/curricula_and_qualifications/general_upper_secondary_education
3. National Qualification Requirements for Vocational Education and Training translated into English: http://oph.fi/english/curricula_and_qualifications/vocational_upper_secondary_education

FRANCE (FR)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

The French educational system is characterised by a strong state presence in the organisation and funding of education. It falls under the responsibility of the **Department for National Education, Higher Education and Research,** which sets the details of curricula at all educational levels.

Education is compulsory between the ages of 6 and 16 years. Primary education admits children between the ages of 6 and 11. Afterwards students go to a 'collège unique' until the age of 15.

During upper secondary education, from 15 to 18 years, it is determined whether students will continue either in general, technological or professional education. All types of school prepare pupils to take the baccalauréat in three years.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic at all levels of primary and secondary education. Copyright is referenced at all levels of education, while trade marks, design and patents are addressed at different levels of secondary education. It is also addresses at all levels in citizenship and ICT classes, and at upper secondary levels through entrepreneurship, STEM and arts.

There are numerous entry points for IP at all levels. At primary and lower secondary levels, French students learn about art, history and ICT, as well as social sciences and technology. At upper secondary level, students learn about media education, economy and management and sciences. They also speak about technological innovation and creation, design culture and have to do an individual multidisciplinary project; such as creating a product or service while respecting aspects of IP.

FRANCE (FR)			Primary school education (age 4-10)	Lower secondary education (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	Discovery learning *(Enseignements d'exploration)*			■	■
	DESIGN	Design and Applied Arts *(Design et Arts Appliquées)*				■
	PATENT	Discovery learning *(Enseignements d'exploration)*			■	■
		Technology *(Téchnologie)*				■
		Foreign languages *(Langues étrangèes)*				■
	COPYRIGHT	Citizenship education *(Éducation Civique)*	■	■	■	■
		Technology *(Téchnologie)*		■		
		Information & Communication *(Informatique et Internet)*			■	
		Art education *(Histoire des Arts)*			■	■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP				■	■
	CITIZENSHIP		■	■	■	■
	ARTS				■	■
	ICT		■	■	■	■
	STEM				■	■

IP related learning objectives in the curriculum	**Primary education:** world discovery (« découverte du monde ») (Brevet informatique et internet)), art education (« pratiques artistiques et histoire des arts »), French language, civics (instruction civique et morale), history, ICT education (techniques usuelles de l'information et de la communication). **Lower secondary:** civics (histoire-géographie, education civique), technology, art education, French language, professional discovery (découverte professionnelle), « Itinéraires de découverte (IDD) » (créations et techniques). **Upper secondary:** French language, history-geography, citizenship education (ECJS), art education, media education, Economy and management (principes fondamentaux de l'économie et de la gestion), Economy and social science (sciences économiques et sociales), engineering sciences (sciences de l'ingénieur), Technological innovation and creation (création et innovation technologiques), creation and design culture (création et culture design), Personnal Project (« Travaux Personnels Encadrés »: Contraintes et libertés / Ethique et responsabilité), Multidisciplinar project (« Projet Pluridisciplinaire à Caractère Professionnel » : Réalisation d'un produit, d'un service, d'un chantier, de tâches professionnelles).
Ongoing reforms or debates	
Examples of good practices of IP education	« Liberté, droit et justice » (freedom, law and justice): specifically addresses IP issues in K8 (classe de 4ème) curriculum through activity on the relationship between national and European laws where students consider a national law conditioned by a European directive. (http://www.ac-paris.fr/portail/jcms/p1_350039/la-loi-hadopi-education-civique-4eme) Upper secondary – préparation of the baccalauréat technologique STI2D: Discovering innovation is linked directly to industrial property and norms, patent registration and innovation protection. (http://cache.media.eduscol.education.fr/file/CIT/08/6/LyceeGT_Ressources_2_ Exploration_Creation-Innovation-Technologiques_147086.pdf) "Economy and management" ('Principes fondamentaux de l'économie et de la gestion ou sciences économiques et sociales'): In order to stimulate students' curiosity and develop inquiry-based learning, the teacher will use daily situations to introduce broader problems; for instance, whether online video-sharing platforms and communities are compatible with IP rights and enforcement issues. (http://cache.media.eduscol.education.fr/file/PFEG/86/0/LyceeGT_Ressources_2_ Exploration_Eco-Gest_148860.pdf) "Brevet Informatique et Internet" (B2I): Use of web resources while respecting copyright and intellectual property. (http://eduscol.education.fr/numerique/textes/reglementaires/competences/b2i/lycee/referentiel) « Enseignements d'exploration » ('Inquiry-based learning') enables upper secondary level students to discover new subjects and new intellectual domains. These new learning situations include innovative approaches to IP. (http://eduscol.education.fr/cid52775/enseignements-d-exploration- 2nde.html)
IP education addressed in teachers' initial or in service training	

References:

1. http://www.education.gouv.fr
2. http://eduscol.education.fr/
3. http://media.education.gouv.fr
4. Bulletin officiel en ligne: http://www.education.gouv.fr/pid285/le-bulletin-officiel.html
5. CNDP – rubrique Informations officielles/ Programmes et accompagnements: http:// www.cndp.fr/doc_administrative/programmes/

GERMANY
(Berlin-Brandenburg) (DE[1])
(Sachsen) (DE[2])

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In the Federal Republic of Germany, responsibility for the education system is divided between the Federation and the Länder. The scope of the Federal Government's responsibilities in the field of education is defined in the Basic Law (Grundgesetz). Unless the Basic Law awards legislative powers to the Federation, the Länder have the right to legislate. Within the education system, this applies to the school sector, the higher education sector, adult education and continuing education.

Compulsory education begins with primary school at the age of 6 and ends at 16. Following the primary school stage, secondary education in the Länder is characterised by division into the various educational paths, with their respective leaving certificates and qualifications for which different school types are responsible.

Once pupils have completed compulsory schooling, at age 16 they move into upper secondary education. The range of courses on offer includes full-time general education and vocational schools, as well as vocational training within the duales System (dual system).

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic at all levels of secondary education in both Berlin-Brandenburg and Sachsen. Both Lander refer to IP at one or more levels of secondary education in the context of patents, design, copyright and trade marks. In Berlin-Brandenburg it is also addressed in entrepreneurship, arts and IT. Sachsen discusses IP in each of these learning areas, as well as citizenship and STEM, at all levels of secondary education.

There are lots of entry points for IP education in the curricula in both Berlin-Brandenburg and Sachsen from primary to upper secondary education level. In primary education in Berlin, subjects like natural sciences, music and the subject 'people, nature and culture', and exploring consumer issues, allow students to approach different aspects of IP. In Sachsen students also learn how to use information from different sources and they regularly visit expositions and art galleries.

At lower secondary level, students from Berlin start learning about economical and legal aspects as well as the consumer's role in economic sciences, but also in social sciences and philosophy; where they additionally discuss social responsibility, norms, values, ethical and technological issues, political and juridical processes.

In informatics, arts and music classes, students come in direct contact with IP through discussions about copyright, originals, adaptations and plagiarism. They also get to meet artists and product and fashion designers.

Other entry points in Berlin are German classes (literature in the media context, commercialisation and literature) and psychology classes; with discussion about conformism and peer pressure. In Sachsen students at lower secondary level have the chance to discuss IP issues as well; in technology and engineering classes, along with discussions about competition, patent law, piracy and infringements during business classes.

At upper secondary level, students from Berlin approach IP issues when talking about design, creativity and brands. Courses in economic sciences include marketing, while social and economic sciences allow discussions about IP via topics such as globalisation, consumer protection and rights, morality and legislation.

In Sachsen, in addition to civic, economic and legal education, students also get to talk about plagiarism, copyright, performance rights, music industry and professions as well as marketing and consumption in music classes. Furthermore, ICT classes touch on copy-and media rights, along with the invention process, public availability of information, confidentiality and patent law.

GERMANY (Berlin-Brandenburg) (DE[1])			Primary school education (age 6-10)	Lower secondary education (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	Marketing communication *(Marketingkom-munikation)*				■
	DESIGN	Marketing communication *(Marketingkom-munikation)*				■
	PATENT	Marketing communication *(Marketingkom-munikation)*				■
	COPYRIGHT	Informatics *(Informatik)*		■		
		Informationtechnology *(Informationstechnik)*				■
		Marketing communication *(Marketingkom-munikation)*				■
		Information and documentation *(Information und Dokumentation)*				■
		Print and digital me-dia designer *(Medien- und Printmediengestalter/in)*				■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM			■		■
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP				■	■
	CITIZENSHIP					
	ARTS		■	■	■	■
	ICT			■		■
	STEM					

IP related learning objectives in the curriculum	**Primary education:** natural sciences, music, Sachunterricht ("people, nature and culture") consumer issues, German (citations). **Lower secondary:** economic sciences (company, juridical frameworks, consumer's role); social sciences (social responsibility, ethical and technological issues, political and juridical processes); law (norms, values, ethics and morality, juridical conflicts); philosophy (freedom and responsibility, norms and values, morality); ethics; informatics (copyright); music (original and adaptations, plagiarism); fine arts (meeting artists and designers, product design and fashion, illustration, design); German (literature in the media context, commercialisation and literature; psychology (conformism and peer pressure). **Upper secondary:** design, creativity, brands; economic sciences (marketing, market and pricing); social and economic sciences (globalisation, creative potential, consumer protection and rights, rights of others, morality and legislation).
Ongoing reforms or debates	
Examples of good practices of IP education	RESPE©T COPYRIGHT: teachers website offering free information and materials on intellectual property and piracy. (http://www.respectcopyrights.de) iRights.info: information platform and online magazine provides understanding of legal issues in copyright and the digital world. "Mabb - Medienkompetenz-Materialien" (Media literacy materials): website provides free media literacy teaching materials. (http://www.mabb.de/) "In the wrong movie?!" - instructional DVD: on copyright, intellectual property protection and illegal copies. (http://www.visionkino.de) "Patente und Rechte. Kinder erfinden" (Patents and rights. Children invent): includes "Inventor" children websites, clubs, suggestions and contacts. (http://www.tecnopedia.de) "Initiative Neue Soziale Marktwirtschaft (INSM)": Economics and School: teacher portal: http://www.wirtschaftundschule.de Online dossier on copyright of the Federal Agency for Civic Education. (http://www.bpb.de) "Links zu Urheberrecht und Unterricht (Gesetze)": Links to Copyright and education (law) for teachers: http://lehrerfortbildung-bw.de/sueb/recht/weit/links/ Patent Information Centre, Darmstadt. Initiatives include: - Children Patent Office: image database of child inventions (www.kinderpatentamt.de) - Children's Science Days: aimed at very young children (www.science-days.de/kinder) - From Pippi to Blue Jeans: children's inventions (www.kindernetz.de) - Kinder are inventors (www.kinder-are-erfinder.de) - Kinder as inventors: presents young inventors. (www.prokik.de)
IP education addressed in teachers' initial or in service training	

References:

1. http://www.berlin.de
2. http://bildungsserver.berlin-brandenburg.de/

GERMANY (Sachsen) (DE[2])			Primary school education (age 6-10)	Lower secondary education (age 10-16)	Upper secondary level (age 16-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	Marketing communication *(Marketingkom-munikation)*				■
	DESIGN	Marketing communication *(Marketingkom-munikation)*				■
	PATENT	Informatics *(Informatik)*		■	■	■
		Biotechnology and bionics *(Biotechnologie und Bionik)*			■	■
		Marketing communication *(Marketingkom-munikation)*				■
	COPYRIGHT	Information and Com-munication Technology *(Informations- und Kom-munikationstechnologie)*		■	■	■
		Informatics *(Informatik)*		■	■	■
		Marketing communication *(Marketingkom-munikation)*				■
		Information and documentation *(Information und Dokumentation)*				
		Print and digital media designer *(Medien-und Printmediengestalter/in)*				
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY			■	■	■
	PLAGIARISM			■	■	■
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP			■	■	■
	CITIZENSHIP			■	■	■
	ARTS		■	■	■	■
	ICT			■	■	■
	STEM			■	■	■

IP related learning objectives in the curriculum	Primary: social studies (using information from different sources); art (visiting expositions, a gallery); music; ethics. Lower secondary: economics; ethics (values, norms); arts, music; informatics (copyrights, license); technology; engineering, social sciences, business (competition, patent law, piracy, infringement). Upper secondary: civics education, rights and duties; economy; law and justice; social sciences (company, business idea); music (plagiarism, copyright, performance rights, music industry, music professions, marketing, consumption); ICT (copyright, media rights), computer/technology (invention process, public availability of information, confidentiality, patent law).
Ongoing reforms or debates	
Examples of good practices of IP education	RESPE©T COPYRIGHT: teachers website offering free information and materials on intellectual property and piracy. (http://www.respectcopyrights.de) iRights.info: information platform and online magazine provides understanding of legal issues in copyright and the digital world. "Mabb - Medienkompetenz-Materialien" (Media literacy materials): website provides free media literacy teaching materials (http://www.mabb.de/) "In the wrong movie?!" - instructional DVD: on copyright, intellectual property protection and illegal copies. (http://www.visionkino.de) "Patente und Rechte. Kinder erfinden" (Patents and rights. Children invent): includes "Inventor" children websites, clubs, suggestions and contacts. (http://www.tecnopedia.de) "Initiative Neue Soziale Marktwirtschaft (INSM)": Economics and School: teacher portal of the (http://www.wirtschaftundschule.de) Online dossier on copyright of the Federal Agency for Civic Education. (http://www.bpb.de) "Links zu Urheberrecht und Unterricht (Gesetze)": Links to Copyright and education (law) for teachers: http://lehrerfortbildung-bw.de/sueb/recht/weit/links/ Patent Information Centre, Darmstadt. Initiatives include: - Children Patent Office: image database of child inventions (www.kinderpatentamt.de) - Children's Science Days: aimed at very young children (www.science-days.de/kinder) - From Pippi to Blue Jeans: children's inventions (www.kindernetz.de) - Kinder are inventors (www.kinder-are-erfinder.de) - Kinder as inventors: presents young inventors. (www.prokik.de)
IP education addressed in teachers' initial or in service training	

References:

1. http://www.schule.sachsen.de/

GREECE (GR)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In Greece, the general responsibility for education lies with the Ministry of Education and Religious Affairs. Curricula for all types of primary and secondary education schools are centrally specified and their application is compulsory for all schools in the country.

Compulsory education in Greece starts at the age of 5 years with one year of pre-primary education. The following primary education lasts for six years before students change to lower secondary education at the Gymnasio for three years, which marks as well the end of compulsory education.

Upper secondary education is provided in general or vocational upper secondary schools that last also for three years.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

In Greece, elements of IP can be found in primary and lower secondary education in subjects related to ICT. It does not enter the curriculum at upper secondary level.

Nevertheless, there are various entry points and at all levels students learn how to use new technologies and how to behave on the internet; including how to protect copyrights and security of information. Students also learn about innovation and human rights; as well as creativity and creation and often have to do projects or create artwork on their own.

At the primary education level environmental studies courses allow students to approach topics as diverse as intellectual rights, civic education and how to be responsible consumers; along with the connection between products and jobs. At lower secondary they discuss the value of work.

GREECE (GR)			Primary school education (age 6-12)	Lower secondary education (age 12-15)	Upper secondary level (age 15-18)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■		
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	Informatics *(Πληροφορική)*	■	■		
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP					
	ARTS					
	ICT		■	■		
	STEM					

GR

IP related learning objectives in the curriculum	**Primary education:** environmental studies (intellectual rights, civic education, education for responsible consumers, connection between products and jobs), cultural heritage. **Lower secondary:** value of work. **All levels:** informatics (critical thinking, new technologies, copyright protection, security of information, behavior on the internet); innovation, human rights, protection of human dignity; creativity, art creation, project work.
Ongoing reforms or debates	
Examples of good practices of IP education	Greek Network of Education (part of the Ministry of Education) provides information about copyrights and intellectual property. (http://internet-safety.sch.gr) Hellenic Copyright Organisation training programme for protection of Copyright and Related Rights, to raise awareness of students on importance of copyright. (http://www.opi.gr)
IP education addressed in teachers' initial or in service training	

References:

1. http://11dim-evosm.thess.sch.gr/downloads/ps/eisagogi.pdf
2. http://www.pi-schools.gr/download/programs/depps/10deppsaps_kpa.pdf
3. http://ps.privateschools.gr/dimotiko/e_dim/koinoniki_politiki_agogi/biblio_mathiti/koi_agogi_math.pdf

HUNGARY (HU)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In Hungary, schools and kindergartens are mainly established and maintained by the state and local governments. The overall responsibility for the education systems lies with the **Ministry of Human Resources,** which is in charge of education, culture, social affairs, health care, youth and sport. However, school-based VET is within the competence of the **Ministry for National Economy.**

Participation in education is mandatory between the ages of 5 and 18, the upper limit currently being reduced to age 16. Primary and lower secondary education is organised as a single-structure system in 8-grade basic schools, typically for pupils aged 6 to14.

Upper secondary education, typically for pupils aged 14 to 18, usually covering grades 9 to 12, is provided by general secondary schools, vocational secondary schools or vocational schools.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

In Hungary, IP issues mainly regarding copyright are approached from lower secondary level on, especially in IT classes.

Entry points for IP education in lower secondary education can be found in media awareness education, education for citizenship and moral education. In IT, students learn the ethical use of IT tools, web use rules and how to indicate information sources in their own documents.

At upper secondary level, students discuss IP when speaking about legal and ethical rules of library use and quotation practices and related information processes. In ethics, they learn about the protection of intellectual and material properties and conscious market behavior. The art and media-related subjects give space for discussions about media ethics and media regulation, and in ICT, IP issues are addressed when discussing the information society, data protection and basic copyright related subjects, such as publication rules of information.

HUNGARY (HU)			Primary school education (age 6-10)	Lower secondary education (age 10-15)	Upper secondary level (age 15-18)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas			■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	IT *(Informatika)*		■	■	■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP					
	ARTS					
	ICT					
	STEM					

IP related learning objectives in the curriculum	**Lower secondary:** media awareness education, education for citizenship, aesthetic-artistic abilities (moral education); ethical use of IT tools, web use rules, indication of used info sources in own documents (IT); world heritage protection, historical monuments, protected areas and values (geography). **Upper secondary:** legal and ethical rules of library use and related info processes, ethics of quoting, bibliographies (Hungarian literature); protection of intellectual and material properties, conscious market behaviour (ethics); media ethics, media regulation (arts, media); information society, data protection knowledge, basic copyright-related subjects, publication rules of info communication (IT).
Ongoing reforms or debates	
Examples of good practices of IP education	
IP education addressed in teachers' initial or in service training	

References:

1. http://www.njt.hu
2. http://kerettanterv.ofi.hu/02_melleklet_5-8/index_alt_isk_felso.html / 8.3 Vocational schools 2. 8.2.7

IRELAND (IE)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

The Irish education system is best described as one of partnership between the state and various private agencies and organisations. The Department of Education and Skills (DES) is responsible for the overall administration of education at all levels.

In Ireland, education is compulsory between the ages of 5 and 16 years. Primary education until the age of 12 is followed by a three-year lower secondary education up to the age of 15 or 16 years.

Upper secondary education is generally completed at one of four types of school: voluntary secondary schools, vocational schools, comprehensive schools, or community schools or Gaelcholáistes, which are second level schools for Irish language medium education. The emphasis of the education system at second level is as much on breadth as on depth; the system attempts to prepare the individual for society and further education or work. This is similar to the education system in Scotland.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic and can be found at primary and upper secondary education levels in the Irish school curricula. IP connected learning areas, such as entrepreneurship, arts and ICT, can be found mainly in upper secondary education. However, ICT is also included at primary level.

Entry points for IP education at primary school level can be found in the general appreciation and enjoyment of aesthetic activities offered; including music, visual arts, dance, drama and language education. Students also acquire knowledge on social responsibility, and how to be active and responsible citizens. They learn to be aware of socially and morally acceptable behavior, how to make ethical judgements and how to respect the rights, views and feelings of others. At an early age, technological skills and the use of ICT are also taught.

During secondary education, students also acquire knowledge about the business environment and working to develop a positive attitude towards enterprise. Other IP education entry points include musical creativity, linked with competence and enterprise; the spirit of musical enterprise in music class, as well as the use of information and communication technologies in a business enterprise, in enterprise education. Furthermore, students touch IP issues in classes related to design and communication graphics, as well as technology and art.

IRELAND (IE)			Primary school education (age 6-12)	Lower secondary education (age 12-14)	Upper secondary level (age 14-18)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■		■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT					
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP				■	■
	CITIZENSHIP					
	ARTS		■		■	■
	ICT		■		■	■
	STEM					

IE

IP related learning objectives in the curriculum	**Primary education:** appreciation and enjoyment of aesthetic activities, including music, visual arts, dance, drama and language; sensitivity towards other people, and a respect for the rights, views and feelings of others; social responsibility, and an awareness of socially and morally acceptable behaviour; capacity to make ethical judgements informed by the tradition and ethos of the school; active and responsible citizenship; technological skills, ICT use. **Secondary education:** participative, enterprising citizens; positive and ethical attitude to enterprise, business environment and working life; new technologies (Business); musical creativity linked with competence and enterprise, spirit of musical enterprise (Music); use of information and communication technologies in a business enterprise (Enterprise Education); design and communication graphics, technology and art.
Ongoing reforms or debates	
Examples of good practices of IP education	
IP education addressed in teachers' initial or in service training	

References:

1. http://www.curriculumonline.ie/
2. http://www.ncca.ie/uploadedfiles/Curriculum/LCA%20prog.pdf (leaving certificate programme)

ITALY (IT)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

The education system in Italy is organised on a subsidiarity basis and promotes the of autonomy of schools. The State has exclusive legislative competence on general issues in education, on minimum standards to be guaranteed throughout the country and on the fundamental principles that regions should comply with within their competencies. Regions share their legislative competencies with the state on all education issues; except for vocational education and training, over which they have exclusive legislative control.

Compulsory education lasts for ten years (from 6 to 16 years of age). It covers five years of primary school, three years of lower secondary school and the first two years of upper secondary school. Compulsory education can also be accomplished by attending three and four-year courses offered within the regional vocational education and training system.

The upper secondary level of education has a duration of five years (from 14 to 19 years of age) and it is offered in both general and vocational pathways (Licei, technical and vocational institutes, respectively).

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

Intellectual property as an integrated topic is only included at upper secondary levels and mainly concerns copyright aspects in arts and the protection of privacy in ICT. Nevertheless, entry points for IP education are numerous.

Primary and lower secondary education students learn about active citizenship and also collect original ideas and texts produced by others from different sources.

At general and/or vocational upper secondary education level, students get in touch with IP when they discuss art and the art market. They also discuss IP copyright issues, originality, creativity and imitation during humanities, Latin and culture classes. Privacy policy and copyright issues are also discussed in ICT. Students touch further on IP aspects in citizenship education and ethics, where they discuss the legal system and artistic and cultural production.

ITALY (IT)			Primary school education (age 6-11)	Lower secondary education (age 11-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas				■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	Art *(Arte)*			■	
		Information and Communication Technologies *(Tecnologie dell'informazione e della comunicazione)*				■
		IT and Laboratory *(Informatica e laboratorio)*				■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					■
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP					
	ARTS				■	
	ICT					■
	STEM					

IP related learning objectives in the curriculum	**Primary and secondary education:** active citizenship; collecting original ideas, texts produced by others and from different Italian sources; value of cultural heritage (geography). **Upper secondary general and/or vocational:** art market, copyright, dissemination of pictorial procedures (art schools); forms of communication and circulation of texts; originality, creativity and imitation (in humanities, Latin language and culture class); privacy policy and copyright (Information and communication technologies); citizenship education and ethics; legal systems, artistic and cultural production (history and geography).
Ongoing reforms or debates	
Examples of good practices of IP education	
IP education addressed in teachers' initial or in service training	

References:

1. http://www.edscuola.eu

LATVIA (LV)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

The education system of the Republic of Latvia is governed by the Ministry of Education and Science.

In Latvia, compulsory education begins with the pre-school education for 5- and 6-year-old children. Primary and lower secondary education is organised as a single structure system beginning at the age of 7 and consisting of nine years of compulsory schooling.

Upper secondary education is not compulsory, but the majority of students also complete it.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic from lower secondary through to vocational levels. At the upper and vocational levels copyright is discussed in the context of ICT, music, economics and confidentiality. IP is also addressed in entrepreneurship at vocational level and in ICT at vocational level.

Entry points for IP education at primary and lower secondary level can mainly be found in the subject of ICT; where students discuss ethical and legal aspects, the notion of respect as well as the issue of copying and sharing, IP and personal data protection. In English and social science, students are taught about legal and illegal actions as well as the respect for others' work.

At the upper and vocational levels copyright is discussed; especially in the context of ICT, music, and economics. In informatics, intellectual property rights related to internet use, software, data bases and safety are addressed. Furthermore, data copying, sharing, lending and distribution, information transfers in networks and the protection of personal data discussed. Ethical and legal rights related to IP, copyright and protection laws are also a theme in music education.

Furthermore, students learn about consumer rights, the different types of IP and IP in commercial actions. In economics students address also the violations of IP and in ethics how to respect others' IP rights in the context of an information society and new communication technologies. In philosophy, students also discuss globalisation, consumption attitudes and the value of information where IP issues such as copyright and confidentiality are addressed. IP is also addressed in entrepreneurship and in ICT at vocational level when students learn software programming or about marketing.

LATVIA (LV)			Primary school education (age 7-16)	Lower secondary education (age 7-16)	Upper secondary level (age 16-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas			■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	*Informatics (Informātika)*			■	■
		Music (Muzika)			■	
		Economics (Ekonomika)			■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					■
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP				■	■
	CITIZENSHIP					
	ARTS					
	ICT			■		■
	STEM					

LV

IP related learning objectives in the curriculum	**Primary education:** ICT (ethical, legal aspects, respect, copying and sharing, IP and personal data protection), English (respect for others work); Social Science (legal and illegal actions). **Upper secondary (general and/or vocational):** consumer rights (IP in commercial actions, types of IP, copyrights) economics (violations of IP) Ethics (informational society and communication, respect for others' IP; Philosophy (globalisation, attitude about consumption, information value); informatics (intellectual property and protection of personal data; software, licence, copyright, safety; data copying, sharing, lending and distribution, information transfers in networks, use of internet, ethical and legal rights of using computers); music (IP, copyright protection laws); basic programming (ethical and legal rights of using computers); clerical studies (informational databases, computer programmes, professional ethical laws [clerk]; protection information and confidentiality of information [secretary, computer system and network administrator, programming engineer]; marketing and sales (introduction and development of new products); library information specialist (professional ethical rules, laws and regulations); innovation (entrepreneurship).
Ongoing reforms or debates	
Examples of good practices of IP education	Guidelines for the protection and provision of intellectual property rights for 2014 – 2020: aims to stimulate cooperation amongst institutions, to encourage pre-school educational institutions to become familiarised with IP rights made simplified; strengthen network of teaching staff on IP subjects through information exchange and training. National Centre for Education: published information explaining copyrights and related rights. (http://visc.gov.lv) Copyright agency AKKA/LAA, in cooperation with Ministry of the Education and Science and National Centre for Education, have commenced updating study materials to promote understanding of IP related matters. (http://www.akkalaa.lv/lat/sazinai_un_izzinai/preses_relizes/?doc=1220)
IP education addressed in teachers' initial or in service training	"Intellectual property and copyrights" (Intelektuālais īpašums un autortiesības) guidelines for teachers and students (10th-12th grade) published at the National Centre For Education (VISC) home page. Introduces terms related to IP and copyright for practical use and tasks for students.

References:

1. http://visc.gov.lv

LITHUANIA (LT)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In the Republic of Lithuania, education policy development and implementation is the responsibility of the Ministry of Education and Science. The local authorities of the ten Latvian regions also have a department of education responsible for general education.

Compulsory education starts at the age of 7 years and ends at the age of 16 years. After four years of primary education, lower secondary education follows in different school types such as pro-gymnasiums, basic education schools, secondary schools, gymnasiums and vocational schools.

Upper secondary education, lasting two years, is implemented by gymnasiums, secondary, vocational and other schools, for students aged from 17 years to 19 years.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic in primary, lower secondary and upper secondary general levels. Copyright is referenced at upper secondary level in regard to music, law and ICT. IP is also mentioned in the context of entrepreneurship and ICT at lower and upper levels and arts only at upper secondary level.

There are lots of entry points for IP education in the Lithuanian curriculum. At primary education level, students learn in arts education how to appreciate their own and others' creations by doing plenty of creative activities.

In visual arts they learn to respect authors' rights. At lower secondary level, ethics teaches notions of ownership and about the regulations for safe internet use.

IT classes teach students some data protection principles, authors' rights, how to ensure and secure personal data and how to legally use of software. In visual arts students discuss their own and others' artworks and visit art galleries, museums and exhibitions. Music education reminds them of the creative process and ethical obligations, while speaking about music software and the publication of music compositions. Citizenship education additionally teaches about legal software use and the protection of authors' rights.

Upper secondary offers courses on graphic designs, which include notions of creativity, individuality, originality, innovation and authors' IP rights. In IT classes, students learn about creative attitudes, copyright, personal data protection and the legal use of software. Social sciences teach students a number of legal aspects, including main IP rights and the notion of entrepreneurship and responsibility. Furthermore, students are taught in arts education the value of creativity and original thinking and in music they discuss plagiarism and authors' rights, authors' copyright laws and regulations.

The programme of Education of General Competencies recommends that teachers implement IP education values across the national curriculum.

LITHUANIA (LT)			Primary school education (age 7-11)	Lower secondary education (age 11-15/17)	Upper secondary level (age 15-17/19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN	Graphic Design *(Grafinis Dizainas)*			■	
	PATENT	Graphic Design *(Grafinis Dizainas)*			■	
	COPYRIGHT	IT Technologies *(IT Technologijos)*			■	
		Law *(Teisė)*			■	
		Music *(Muzika)*			■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM				■	
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP			■	■	
	CITIZENSHIP					
	ARTS		■		■	
	ICT			■	■	
	STEM					

IP related learning objectives in the curriculum	Primary: arts (creative activities, aesthetical environment, appreciate their own and others' creations); visual arts (respect authors' rights). Lower secondary: ethics (respecting own and others' property, ownership; criticise media and advertising, regulations of safe internet use; prevention program: safe internet - saugesnis internetas); IT (data protection principles, authors' rights, safety and security of personal data; legal use of software, software piracy, licensing); visual arts (art metrics - author's name, name of artwork, date, technique; represent other authors', friends', own artworks, authors' artworks, art galleries, museums and exhibitions, respect of cultural heritage); music (listeners ethical obligations, music software, creative process, publication of music compositions); citizenship education (legal software use and protection, authors' rights). Upper secondary: graphic designs (creativity, individuality, originality, innovation, authors' IP rights, indicate references); IT (creative attitudes, copyright and personal data protection and legal use, software, license, author rights. legal aspects of ITC; definition of IP); social sciences, law (cultural consciousness, entrepreneurship, responsibility, main IP rights, legal protection, physical and IP rights, ownership of physical rights); arts, visual arts (creativity, responsibility, critical evaluation, cultural heritage, original thinking); music (critical evaluation, ethics, plagiarism, authors' rights, authors' copyright laws and regulations).
Ongoing reforms or debates	
Examples of good practices of IP education	Lithuanian Authors and Creative Unions (Lietuvos autorių teisių gynimo asociacija, LATGA-A): video competition, 'I am the Author. My Rights', for 9-12 grade students. (http://www.latga.lt/en) Lithuanian Neighbouring Rights Association (AGATA): performers and phonogram producers collecting society, works with IP promotion. "lt. Agata Langai" (Agata Windows): a project to stimulate excellence of musical quality in young performers between 15-20 years old. The project aims to introduce author's rights and neighbouring rights to young people. (http://www.agata.lt/index.php?id=520) "Author's Rights and Neighbouring Rights": programme financed by Ministry of Culture. (http://www. lrkm.lt) Dot Award 2014: competition for students who make their own website and demonstrate practical use of the internet, making sure that content does not infringe copyright or data protection laws. (http://www.dotaward.cat/index.php) Competition 'Promoting Youth Entrepreneurship' 2014. Organised by the Ministry of Economy of the Republic Of Lithuania, 'Enterprise Lithuania' and 'Lithuanian Junior Achievement': Upper Secondary Education students working together to generate ideas to promote youth start-ups and entrepreneurship. (http://www.lja.lt/index.php/lja-konkursai/jaunimo-verslumo-skatinimas-2014) Competition 'Little Hats' (lt. Kepurėlių čempionatas): Students role play owning companies, encouraging entrepreneurial decision-making, developing marketing skills, etc. (http://www.lja.lt/index.php/lja-konkursai/kepureles) VEMP Business Competition: started in 1995, similar to the Little Hats competition. The competition is announced each year. (http://www.lja.lt/index.php/lja-konkursai/vemp-verslo-cempionatas)
IP education addressed in teachers' initial or in service training	Programme of Education of General Competencies recommended teachers to implement IP education values across national curriculum (http://portalas.emokykla.lt/bup/Documents/Vidurinis%20ugdymas/Bendruju_kompetenciju_ugdymas_10_priedas.pdf).

References:

1. www.smm.lt
2. http://portalas.emokykla.lt
3. http://www.kpmpc.lt

LUXEMBOURG (LU)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

The main responsibility for Luxembourg's educational system is with the **Ministry of Education, Children and Youth,** which is responsible for planning and managing compulsory school education.

School attendance is compulsory for students between the ages of 4 and 16 years starting with two years of preschool education. Primary education is organised in four cycles and finishes at 10 or 11 years.

Secondary education comprises two branches of education: general secondary education; lasting seven years or technical secondary education; lasting seven or eight years, which also includes the optional vocational education path.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic all the way from primary to upper secondary levels. It is addressed at primary level through arts, at lower secondary through ICT, and at upper secondary level in the context of arts, ICT and entrepreneurship.

There are numerous entry points for IP education. At primary education level students learn to appreciate art pieces while realising their own creative work and artistic ideas. They also discover art works from other cultures and approach artists and artisans of the country/region.

Students get media education and learn about the fundamental conditions of media production and broadcasting, including author rights and the risks and dangers linked to the use of media. Furthermore, students learn to compile rudimentary bibliographies, referencing authors and illustrators from different audiovisual and textual sources.

At lower secondary level, students learn about aspects of IP when approaching property laws and economic issues. Students additionally learn how to use information sources and tools, such as the Internet, how to protect IP rights and how to be responsible citizens. In art, students are taught about the spirit of initiative, creativity, innovation, invention and aesthetics.

In upper secondary, violation and protection of IP, as well as data protection in an IT context are discussed.

Apprenticeship and business projects allow discussions about IP issues; such as copyright, brand image, logo laws and the creative process.

LUXEMBOURG (LU)			Primary school education (age 6-12)	Lower secondary education (age 12-15)	Upper secondary level (age 15-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum		SUBJECT				
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	IT *(Informatique)*			■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY				■	
	PLAGIARISM			■	■	■
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP				■	
	CITIZENSHIP					
	ARTS		■		■	
	ICT			■	■	
	STEM					

LU

IP related learning objectives in the curriculum	**Primary education:** appreciate art pieces and one's own work, realise a work from artistic ideas, know art works from other cultures, discover and approach artists and artisans of the country/region; creativity, initiative; media education, fundamental conditions of media production and broadcasting (e.g. author rights), compile rudimentary bibliographies, use documents of reference, IT and audio-visual tools; identify: author, illustrator, title; risks and dangers linked to the use of media; technical inventions. **Lower secondary:** property law (economic and legal initiation and elements of law), sources of information (e.g. the internet, dictionaries, etc. and other works of reference); protection of IP; rights and liberties of citizens; responsible attitude towards information and use of interactive tools, rules and rights regarding IT, internet use; risks and dangers of the internet (e.g. online fraud); creative process (art); spirit of initiative, creativity, innovation, invention, aesthetics, citizen attitudes, critical spirit. **Upper secondary:** critical judgement of IT, violation and protection of IP, website (legilux.lu) authors' rights, data protection, copyright; brand image, logo laws; apprenticeship business and projects; creative process, art.
Ongoing reforms or debates	IP is expected to be addressed through individual work (« travail personnel ») that students must achieve in 2nd class (12th year) and is already part of the schedule in some schools.
Examples of good practices of IP education	Some of the transversal competencies required at the end of primary education refer to IP education, e.g. those concerned with fundamental aspects of authors' rights, data, data security and personality rights. UNESCO's "Global day of books and authors' rights": coordinated by National Library and Ministry of Education: involving most primary and secondary schools. (http://portal.education.lu)
IP education addressed in teachers' initial or in service training	

References:

1. http://www.men.public.lu/fr/publications/fondamental/apprentissages/documents-obligatoires/plan-etudes/index.html
2. http://portal.education.lu/programmes/ProgrammeSecondaire.aspx

MALTA (MT)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

Maltese education draws its main inspiration from the British educational system.

In Malta, education is compulsory for all children between 4 and 16 years. Primary school starts at age 5 and lasts for six years. After primary school, students move on to secondary school which lasts for five years, until the age of 16.

Upper secondary education, called Sixth Form, is optional. It lasts for two years, and students choose whether to go at age 16.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic from primary to upper secondary general level. At all these levels it is referenced in arts, entrepreneurship and ICT.

The national curriculum (being updated) contains cross-curricular themes including some IP such as digital literacy, citizenship education learning area (to be replaced by 'education for democracy'), education for entrepreneurship, creativity and innovation, and education for sustainable development or economic stability and independence.

At all educational levels there are plenty of entry points for IP education next to the above mentioned. Students learn how to be responsible citizens and how to confidently and critically use digital data sources. Furthermore, students have classes about consumer education and ethics in economics where they learn to ethically prioritise economic values to ensure stability and autonomy.

MALTA (MT)			Primary school education* (age 5-11)	Lower secondary education* (age 11-12)	Upper secondary level (age 12-18)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT					
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY			■		
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP		■	■	■	
	CITIZENSHIP					
	ARTS		■	■	■	
	ICT		■	■	■	
	STEM					

IP related learning objectives in the curriculum	The 2012 'National Curriculum Framework For All' (being updated) contains the cross-curricular themes including some IP: digital literacy, Citizenship Education Learning Area (to be replaced by the Education for Democracy), Education for Entrepreneurship Creativity and Innovation. Education for Sustainable Development or Economic stability and independence. All levels: responsible citizenship, consumer education, confident and critical use of digital data sources; social, ethical and personal aspects; digital literacy; pro-innovation culture, invention, entrepreneurship, netiquette, online safety measures, ability to ethically prioritise economic values to ensure stability and autonomy; education for entrepreneurship; creativity and innovation; ethics in economics.
Ongoing reforms or debates	2011-2020 National Strategy for Research & Innovation, the Working Group converges previously separate cross curricular themes of Education for Entrepreneurship, Creativity and Innovation as one cross curricular theme:'Education for Entrepreneurship, Creativity and Innovation'. IP rights will be given more importance in the new Learning Outcomes Framework, expected September 2015.
Examples of good practices of IP education	"Entrepreneurship through Education Scheme": involving teachers and students from four colleges, designed to develop students' entrepreneurial skills and strengthen intrapersonal skills, with emphasis on creativity and innovation, leadership, communication and decision making; promotes science among Form 2 students. (http://xjenzaathandaq.webs.com/) "eContent project (ERDF 159)": funded by the Education Department ERDF: developing core subject digital lessons. Author's IP rights in resources are respected by asking them to waive their copyright before school use. "Our Community" (age: 8-10): children discover how local communities function and learn how people and businesses operate within a community. "Europe, My Business" (age: 10-12): increases understanding of how businesses operate in Europe, interdependence between countries, and explores various economic issues that impact people and business. The programme introduces the relationship between the natural, human, and capital resources found in different countries and explores European businesses that produce goods and services. "Enterprise in Action" (age: 13-15) Enterprise in Action is an eight to ten week class that helps students to understand the principal characteristics of the free enterprise economic system and the role of business. The Company Programme (age: 16-19) designed to bridge the gap between theoretical and practical implications of business. Students learn how to take a business idea from concept to reality. (http://xjenzaathandaq.webs.com/) "Entrepreneurship through Education Scheme": initiative intended so to develop the students' entrepreneurial skills, strengthening intrapersonal skills particularly creativity and innovation, leadership, communication and decision making. (Xjenza@Handaq.com)
IP education addressed in teachers' initial or in service training	Aspects of IP implementation are addressed in Initial Teacher Education (ITE) through discussions and institutional regulations about plagiarism, promotion and the awarding of higher marks for creativity and innovation in students' work.

References:

1. 'National Curriculum Framework for All': http://curriculum.gov.mt

THE NETHERLANDS (NL)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In the Netherlands, overall responsibility for the education system lies with the state, specifically the Minister of Education, Culture and Science and the State Secretary for Education, Culture and Science. This national institution creates the statutory requirements for early childhood, primary and secondary education and secondary vocational education.

Local administrations are responsible for the management of primary and secondary schools and for secondary vocational education. The provincial authorities' sole responsibilities around education are limited to supervisory and legal tasks.

In the Netherlands, compulsory education begins at the age of 5, at which time every child must attend school full-time; however, nearly all children start going to school at the age of 4.

Primary education lasts eight years, after which, at around the age of 12, pupils opt for one of three types of secondary education: pre-vocational secondary education (four years), senior general secondary education (five years) or pre-university education (six years). Most secondary schools are combined schools, offering several types of secondary education so that pupils can transfer easily from one type to another.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic at lower secondary and upper secondary vocational level. Copyright is addressed at vocational level in regard to AV-production, game artists and media management.

There are plenty of entry points for IP education in Dutch school curricula. At primary level students learn to cite different kinds of sources, including digital sources, and to respect norms and values, as well as their own and other people's work in artistic orientation. At lower education level, students learn to use written and digital sources; design and develop a technical product, and to conduct research. They also learn to respect each other's work and reflect on their own work and that of others.

At upper secondary level students can learn about IP through ICT and economics classes, and vocational education offers more opportunities to expand IP education, especially through courses on media development and management and informatics and ICT.

THE NETHERLANDS (NL)			Primary school education (age 4-11)	Lower secondary education (age 12-15)	Upper secondary level (age 15-17/18)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas			■		■
Aspects of IP mentioned in the curriculum*	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	AV-Production *(AV-Productie)*				■
		Game Artist *(Game artist)*				■
		Application and Media development *(Applicatie-en mediaontwikkeling)*				■
		Media Management *(Mediamanagement)*				■
Additional aspects of IP mentioned in the curriculum*	CONFIDENTIALITY, SECRETS, PRIVACY					■
	PLAGIARISM			■		
IP connected learning areas mentioned in the curriculum*	ENTREPRENEURSHIP					
	CITIZENSHIP					
	ARTS					
	ICT					
	STEM					

* There is no national curriculum in the Netherlands and so for this study the official documents detailing the core objectives established by the Ministry were reviewed.

NL

IP related learning objectives in the curriculum	**Primary:** Dutch (Nederlands), Orientation on yourself and the world (Orientatie op jezelf en de wereld), Artistic Orientation (Kunstzinnige Orientatie), structure information and its sources, including digital sources (Dutch); respect for generally accepted norms and values (Orientation on yourself and the world); reflect on the work and on the work of others (Artistic orientation). **Lower secondary:** Dutch (Nederlands), Arithmetic and Mathematics (Rekenen en wiskunde), Humans and nature (Mens en natuur), Mens en maatschappij (Man and Society), Art & Culture (Kunst en cultuur), written and digital sources, organise and assess the information (Dutch); design and develop a technical product (Humans and nature); criticism, conduct research, recognise effects of choices by using own experiences in one's own environment, respect for each other's work importance of human rights, significance of international cooperation (Man and Society); present the artistic work. Reflect on the work and on the work of others (Art & Culture). **Upper secondary (general – optional subjects):** History (Geschiedenis), Computer Science (Informatica), Economy (Economie). **Upper secondary vocational education:** professions concerned Application and media development, AV-Production, Game Artist, Media Management, Informatics and ICT, working on projects, ethical standards and values when using computer/ICT (Computer Science); domestic and international developments, international competitiveness (Economy).
Ongoing reforms or debates	
Examples of good practices of IP education	
IP education addressed in teachers' initial or in service training	

References:

1. http://www.slo.nl
2. http://www.kwalificatiesmbo.nl
3. http://www.examenblad.nl
4. http://www.rijksoverheid.nl

NORTHERN IRELAND (UK[1])

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In Northern Ireland, the Department for Education (DfE) has overall responsibility for pre-primary, primary and secondary education and the youth service.

Compulsory education starts at the age of 4, which is the earliest compulsory school starting date in the UK and one of the earliest in Europe, and ends at the age of 16 years. Primary education is organised in two cycles of two years ending at the age of 7 (Key Stages 1 and 2). Lower secondary education (Key Stages 3 and 4) is provided in secondary schools and grammar schools, known collectively as 'post-primary schools', and ends with the General Certificate of Secondary Education (GCSE).

Upper secondary education is followed by the great majority of young people from 16 years up to age 19. Education for young people aged 16 to 18/19 is characterised by subject specialisation and a range of providers: sixth forms in post-primary schools (11 to 18/19) and further education colleges (16+). Young people have a wide choice of programmes, leading to general/academic, pre-vocational or vocational qualifications.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic from primary to upper secondary levels. At primary level, it is addressed in citizenship and arts classes, and at lower secondary level in arts and ICT. At upper secondary general level it is addressed in ICT and entrepreneurship.

All levels offer IP entry points when speaking about creativity, employability, consumer rights and responsibilities. Primary education offers IP education entry points in subjects such as citizenship, media, economic awareness, rights and responsibilities. Furthermore, language and literacy classes underline the value of writing, authors and illustrators. In arts they get to know the work of real artists, designers and craft workers and learn to appreciate their uniqueness and value. Students learn about design, inventors and inventions, goods and services; as well as their production, distribution and selling process. Music classes also include composition and performance activities. Lower secondary education includes notions of norms and values, as well as ethical and economic awareness.

Students are also taught how to use ICT for information research and how to behave online. In arts, music and design, students discuss the work of artists, designers and craft workers and the concept of "value for money" in performances.

Science and technology classes allow topics such as pirating, mass production of counterfeit goods, internet regulation, and technological warfare to be discussed.

The subject 'learning for life and work' touches on issues such as globalisation, innovation, entrepreneurial spirit, business, the rights of workers and employers and address different aspects of IP. Upper secondary equally touches IP elements in subjects on enterprise and entrepreneurship, and innovation and ICT

NORTHERN IRELAND (UK[1])			Primary school education (age 5-11)	Lower secondary education (age 11-14)	Upper secondary level (age 14-18)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT					
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM			■		
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP				■	■
	CITIZENSHIP		■	■		
	ARTS		■	■		
	ICT			■	■	■
	STEM					

IP related learning objectives in the curriculum	All levels: creativity, employability, consumer rights and responsibilities. Primary education: citizenship, media, economic awareness, rights and responsibilities; language and literacy (value of writing, author and illustrator); arts (work of real artists, designers, craft workers, uniqueness, music composition and performance); personal development and mutual understanding; production, distribution and selling of goods; design, inventors and inventions, goods and services. Lower secondary: integrity in dealings; moral character and dilemmas, values; ethical awareness; economic awareness; using ICT (researching, handling and communicating information, safe and acceptable online behaviour); arts, music and design (work of artists, designers and craft workers, "value for money"in performances); science and technologies (ethical dilemmas, pirating, mass production of counterfeit goods, internet regulation, technological warfare, etc., technology and design, media); learning for life and work, (global markets, innovation, entrepreneurial spirit, business, rights of workers and employers); global citizenship. Upper secondary: enterprise and entrepreneurship, innovation, ICT, globalisation.
Ongoing reforms or debates	
Examples of good practices of IP education	
IP education addressed in teachers' initial or in service training	

References:

1. Northern Ireland curriculum: http://www.nicurriculum.org.uk/

POLAND (PL)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

The Polish education system is characterised by a combination of centralised governance (i.e. laws/ regulations for which the Ministry of Education and the Ministry of Science and Higher Education are responsible) and decentralisation of school administration (for which local authorities are responsible).

Full-time, compulsory education lasts for 10 years and comprises the last year of pre-school education. This is followed by six years of primary school education and from the age of 12 years up to 15/16 years students receive lower secondary school education.

Upper secondary education comprises three school forms: three-year general upper secondary school, four-year technical upper secondary school and three-year basic vocational school. Pupils attend upper secondary schools from the age of 16 to 19/20. The vast majority of students continue education in upper secondary school.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic from primary to upper secondary vocational level. Copyright is addressed through arts, ethics and ICT and patent is also discussed in ICT at upper secondary general level. IP also enters Polish education through the IP connected learning area of entrepreneurship, citizenship and STEM.

There are IP entry points at all levels. In primary education, pupils discuss the concept of property, basic ethical values, value of work, rights, obligations, laws and regulations at school, in the family and in the local community. They also learn about the risks and limitations related to the use of computers and the Internet, and about creativity.

At lower secondary level, pupils learn about creativity and participation in cultural activities, ethical and legal issues, public life, human rights, entrepreneurship, market economy, responsibility, economic activity, ethics in economic life and entrepreneurship.

At upper secondary levels, education includes basic ethical concepts and notions such as the problem of copying at exams; ethical and legal issues of ICT; and entrepreneurship.

POLAND (PL)			Primary school education (age 6/7-13)	Lower secondary education (age 13-16)	Upper secondary level (age 16-19/20)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT	Information Technology			■	
	COPYRIGHT	Arts *(Zajecia Artystyczne)*		■	■	
		Fine Arts *(Plastyka)*	■			
		Ethics *(Etyka)*	■			■
		IT	■			■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					■
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP		■	■	■	■
	CITIZENSHIP		■	■	■	
	ARTS		■	■	■	
	ICT		■	■	■	■
	STEM		■	■	■	■

PL

IP related learning objectives in the curriculum	**Primary education:** property concept, basic ethical values, value of work, rights, obligations, laws and regulations at school, in family and in local community (cross-cutting area of ethics); risks and limitations related to the use of the computer and the internet (cross-cutting theme on computing/computer science); creativity (fine arts education). **Lower secondary:** creativity and participation in cultural activities (arts); ethical and legal issues (ICT); public life, human rights, entrepreneurship, market economy, responsibility, economic activity, ethics in economic life (civic education); initiation to entrepreneurship. **Upper secondary:** basic ethical concepts and notions, problem of copying at exams (ethics); ethical and legal issues of ICT; entrepreneurship (introduction to entrepreneurship and applied economics).
Ongoing reforms or debates	The curricular reform in general education from 2009. The curricular reform in vocational education from 2012.
Examples of good practices of IP education	Foundation Centre for Citizenship Education: providing projects on civic education including IP topics. (http://www.ceo.org.pl/pl/szkolazklasa2zero/news/school-class-20-0) "Legalna Kultura" (Legal Culture): national public service campaign promoting the use of legal sources of culture, appeals to positive values, such as loyalty towards favourite creators and artists, honesty and responsibility. Supported by numerous media partners and cultural institutions, such as the Ministry of Culture. Contains teaching materials on IP. (http://legalnakultura.pl/pl) "Cyfrowa Szkola" (Digital school): government programme promoting ICT at school, including IP education, targeted at both teachers and students. It involves the ministries of Education, Culture and National Heritage, Administration and Digitization, Institute for Educational Research, as well as other organisations. (http://www.cyfrowaszkola.men.gov.pl) "Cyfrowa Przyszłość" (Digital Future): project conducted by the Modern Poland Foundation (http:// nowoczesnapolska.org.pl). Contains a separate programme, "Media and Information Education" (edukacjamedialna.edu.pl), offering teaching material on IP for secondary schools, to be introduced at pre-primary and primary education levels. (http://cyfrowaprzyszlosc.pl) The following websites provide information on workshops and education tools related to IP for teachers: - Workshops and resources for schools: http://ore.edu.pl/strona-ore/index.php?option=com_phocadownload&view=category&id=158&Itemid=1776 –resources for teachers, - Various subjects: http://www.scholaris.pl/resources/zasoby?api=&t-query=w%C5%82asno%C5%9B%C4%87+intelektualna+w+sieci+internetowej&teid=0 - Law in culture, legal sources: http://legalnakultura.pl/pl/prawo-w-kulturze/b-przewodnik-b-poprawie- autorskim http://cyfrowa-wyprawka.org/ - Educational resources resources for teachers, students and parents about art: http://sztuka24h.edu.pl/?p=2770 - Education website: http://www.interklasa.pl/portal/index/strony?mainSP=subjectpages&mainSRV=informatyka&methid=19769861&page=article&article_id=344678 - Tools and materials for teachers, examples of classes: http://edukacjamedialna.edu.pl/lekcje/ekonomiczne-aspekty-wlasnosci-intelektualnej/ - Free access to school readings: http://wolnelektury.pl/ - Website for teachers and schools: http://www.ceo.org.pl/pl/cyfrowaszkola/news/prawa-autorskie-dowiedz-sie-wiecej
IP education addressed in teachers' initial or in service training	The Development of Education Center systematically organises different forms of teacher training on legal education containing Intellectual Property issue. http://www.ore.edu.pl/index.php?option=com_content&view=article&id=3789:szkolenie-qedukac-ja-prawna-w-podstawie-programowejq-&catid=99:edukacja-obywatelska-aktualnoci&Itemid=1205 Online platform for teachers (in collaboration with the Ministry of National Education), offering tea-ching materials on IP: http://scholaris.pl

References:

1. Ordinance of the Ministry of National Education on the national curricula of general education from pre-school education, in all types of schools (Rozporządzenie Ministra Edukacji Narodowej,w sprawie podstawy programowej wychowania przedszkolnego oraz kształcenia ogólnego w poszczególnych typach szkół) http://bip.men.gov.pl/
2. RozporządzenieMinistraEdukacjiNarodowej (Ordinance of the Ministry of National Education on the national curricula – by subject) http://bip.men.gov.pl/
3. List z ministerstwa w sprawie nauczania o własności intelektualnej (Letter from the ministry on IP education), 20 MAY 2014

PORTUGAL (PT)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In Portugal, the **Ministry of Education and Science** has the responsibility for defining, coordinating, implementing and evaluating national policies for education, science and information society, articulating them with the policies of qualification and training.

Compulsory education begins at the age of 6 and lasts for 12 years. It encompasses basic education and secondary education. Basic education including primary and lower secondary education lasts for nine years and is divided into three cycles. Basic education includes: general basic education; specialised artistic courses; vocational courses; and recurrent education.

Upper secondary education lasts for three years and is organised into diversified forms according to different aims, either focusing on access to further studies or on preparation to active life. The permeability between courses oriented to working life and courses geared to continue studies is guaranteed.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic from primary to upper secondary general level. Patents are mentioned in the context of economics, and copyright in ICT. It is also referenced through entrepreneurship, and plagiarism is discussed at all three levels of education.

There are numerous entry points for IP education at all levels. From the start of education on, students are taught respect for copyright and to avoid plagiarism. They know their rights and duties through ethics classes and get entrepreneurship and citizenship education and are trained to acquire media literacy.

At primary education level, they learn about citations practice and creativity. At lower secondary level, students learn ethical principles of intellectual work, producing own personal and creative texts. Correct use of sources and a correct citation practice as well as data protection are important. Discussions about concepts of intellectual property and copyright applied to software (ICT), infringements, ownership and about free/commercial and creative commons are encouraged.

At upper secondary level students additionally learn about licenses and patents, and public and common goods in economy classes, where they also discuss (trade) globalisation and regionalisation. Students furthermore attend multimedia classes touching copyright and distribution contracts topics.

PORTUGAL (PT)			Primary school education* (age 6-12)	Lower secondary education* (age 12-15)	Upper secondary level (age 15-18)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT	Economics *(Economie)*			■	
	COPYRIGHT	Information and Communication Technologies *(Tecnologias de Informação e Comunicação)*		■		
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM		■	■	■	
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP			■		
	CITIZENSHIP					
	ARTS					
	ICT			■	■	
	STEM					

IP related learning objectives in the curriculum	**All levels:** respect for copyright rights and duties, ethics, plagiarism, media literacy. **Primary education:** citation, paraphrase, parody, plagiarism, creative imitation (Portuguese). **Lower secondary:** ethical principles of intellectual work, produce personal and creative texts, identify and citing used sources (Portuguese); data protection and intellectual property, infringement, licensing, owner, free/commercial and creative commons, concepts of intellectual property and copyright applied to software (ICT). **Upper secondary:** quotation, intellectual work principles, identification of sources used, citation standards, bibliography (Portuguese); globalization and regionalization, trade globalization, licenses and patents, public and common goods (economy); multimedia integration (copyright and distribution contracts).
Ongoing reforms or debates	Citizenship Education guideline documents are being prepared / updated to include IP-related topics.
Examples of good practices of IP education	The reference to copyright is included in the final or intermediary goals to be attained at the end of different educational steps (cycles). Creativity Contest for Schools (Grande C"): Portuguese Association for the Management of Private Copying (AGECOP): Aims to increase young people's knowledge of copyright and related rights' knowledge, and the importance of protecting original works, to familiarise them with creative work and the value of standards that protect that work. (www.agecop.pt) "IGAC goes to School": the General Inspectorate of Cultural Activities (IGAC): project aimed at school teachers and students. Since 2011, more than a thousand students have participated. "Portal das Escolas" (Schools' Website): the collaborative online network for pre-primary, primary and secondary schools, teachers, pupils, parents and non-teaching staff. Offers digital educational resources related to copyright, plagiarism and creative commons licenses. Resources validated by the Ministry of Education and Science. (https://www.portaldasescolas.pt) "NETtalks": a serie of conferences proposed to schools by the Portuguese Association for Consumer Protection (DECO), related to respect for copyright, illegal downloads, digital consumer rights. (http://www.nettalks.pt) "Operação 7 Dias com os Media" (Operation 7 Days with Media): competition aiming at promoting critical and creative use of media, safer use of the internet and respect for copyright by the educational community, particularly students. http://www.literaciamediatica.pt "SeguraNet": programme offering activities to schools, pupils, teachers and other staff, focusing on safe behaviours and attitudes to be adopted when using digital equipment and tools, including rules to respect the work of others, copyright and intellectual property, standards of conduct in the use of online digital environment, and identifying authorship of information available through electronic sources. (www.seguranet.pt)
IP education addressed in teachers' initial or in service training	

References:

1. http://dge.mec.pt/
2. http://www.dgidc.min-edu.pt
3. http://dre.pt
4. http://www.portugal.gov.pt

ROMANIA (RO)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In Romania, the education system is managed at national level by the Ministry of National Education (MEN). The main purpose of the education and vocational training of children and young people is to develop competencies, in the form of a multifunctional and transferable set of knowledge, skills/abilities and aptitudes.

Education is compulsory for ten years and includes primary and secondary education. Primary education lasts four years and lower secondary three.

Upper secondary education includes grades 9 to 12/13, with the following paths: theoretical vocational and technological; or vocational education with a duration of three years.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic from primary to upper secondary vocational level. IP is referenced in the lower levels through citizenship teaching and the upper levels through ICT, arts, STEM entrepreneurship.

Entry points for IP education are numerous. At primary level students learn in citizenship education about the concepts of property, human rights and legal compliance. At lower secondary level sciences education and the classes of geography and history are open to discussions about different aspects of IP. Music, arts, ICT and entrepreneurship classes offer plenty of space for discussion about the different IP elements. In upper secondary students learn even more about creativity, as well as reading and life skills.

ROMANIA (RO)			Primary school education (age 6-11)	Lower secondary education (age 11-15)	Upper secondary level (age 15-19/20)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	Information and Communication Technology *(Tehnologia informației și comunicațiilor)*			■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP			■	■	
	CITIZENSHIP		■	■		
	ARTS					■
	ICT			■		
	STEM				■	

RO

IP related learning objectives in the curriculum	**Primary:** Environment knowledge *(Cunoaşterea mediului)* 1st-2nd grade; Civic education *(Educaţie civică)* 3rd grade; Technological education *(Educaţie tehnologică)* 3rd grade; History (storie) 4th grade; property concept, human rights, legal compliance, confidence, active citizenship. **Lower secondary:** Romanian Language and Literature *(Limba şi literatura română)* 5th-8th grades; Biology *(Biologie)* 5th-8th grades; Chemistry *(Chimie)* 7th-8th grades; Physics (Fizică) 6th-8th grades; Mathematics *(Matematică)* 5th-8th grades; Civic culture *(Cultură civică)* 7th-8th grades; Geography *(Geografie)* 5th -8th grades; History (Istorie) 5th-8th grades; Musical education *(Educaţie muzicală)* 5th -8th grades; Plastic education *(Educaţie plastică)* 5th-8th grades building initiative and entrepreneurship skills, ICT. **Upper secondary:** Biology, creativity, reading and life skills.
Ongoing reforms or debates	Ministry of Education, Romanian Copyright Office (ORDA) and State Office for Inventions and Trade marks (OSIM) are developing an optional subject: intellectual property and information literacy for upper secondary education, due 2015/16, which includes the following issues: copyright and related rights (including plagiarism), patents, trade marks, geographical indications, Drawings and Designs, topographies of semiconductor products.
Examples of good practices of IP education	The Romanian State Office for Inventions and Trade marks (OSIM): In accordance with OSIM representative declaration, initiative to deliver presentations on elements of intellectual property in high schools, both directly and with the support of the Junior Achievement Foundation. IP presentations made at high school. (www.jaromania.org)
IP education addressed in teachers' initial or in service training	

References:

1. Cultură civică - clasele a VII-a VIII-a (Civic education for the 7th-8th grades) (p. 7)
2. Educaţie plastică, clasele V-VI (Plastic education, 5th-6th grades) (p. 2-3)
3. Educaţie economică, curriculum la decizia şcolii ofetă naţională, gimnaziu (Economical education, school based curriculum, national offer, gymnasium,) (p. 5)
4. Lectura şi abilităţile de viaţă curriculum la decizia şcolii V-XII (Reading and life skills – optional curriculum) valuing creativity as a resource for personal and community development) (p.4)
5. Educaţie tehnologică, clasele V-VIII (Technological education, 5th -8th grades) (p. 6)
6. Economia întreprinderii, clasa a X-a technological route (Business economics, 10th grade, technological route, specialization: services)

SCOTLAND (UK[2])

INTRODUCTION TO THE EDUCATIONAL SYSTEM

Scottish education is laid down by the Scottish government through the Cabinet Secretary for Education and Lifelong Learning, and the Directorates for Learning; for Children and Families; and for Employability, Skills and Lifelong Learning with the support of several agencies.

Education is compulsory between the ages of 5 and 16. Primary education starts at the age of 5 and ends at the age of 12. From age 12 to 16, students attend lower secondary education in comprehensive secondary schools.

Upper secondary education is optional from age 16 to 18 and takes place predominantly in secondary schools, but can also take place in colleges. Vocational training is undertaken with independent providers or in colleges.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP elements can be found across different curriculum areas from primary up to upper secondary education. They are especially approached in topics linked to entrepreneurship, arts and ICT.

Entry points for IP education can also be found at all levels. In expressive arts students learn about responsible citizenship, ethical questions, creativity, enterprise, new technologies, design, and how creative adults and cultural organisations work. Furthermore, the subjects of social studies, sciences and technologies allow discussions on creativity and entrepreneurial skills, inventiveness and innovation, and how to become informed consumers and producers that appreciate the merits and impacts of products and services.

Within secondary education, students learn about goods and services as well as globalisation. In literacy and English they are taught how to appropriately acknowledge sources and in technology IP is touched when speaking about the design, planning and production of items.

SCOTLAND (UK[2])			Primary school education (age 5-12)	Lower secondary education (age 12-16)	Upper secondary level (age 16-18)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT					
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP		■	■	■	■
	CITIZENSHIP					
	ARTS		■	■	■	■
	ICT		■	■	■	■
	STEM					

IP related learning objectives in the curriculum	**All levels:** expressive arts (responsible citizens, ethical questions, creativity, enterprise, collaboration with technologies, study of design, partnerships with professional arts companies, creative adults and cultural organisations); sciences (creativity, inventiveness); social studies (citizenship, critical and independent thinking, enterprising attitudes, concepts that encourage enterprise and influence business); technologies (creativity and entrepreneurial skills, innovation, critisism, informed consumers and producers, appreciation of the merits and impacts of products and services). **Secondary education:** social studies (goods and services, globalisation, patterns of work and employment conditions); literacy and English (appropriate acknowledge of sources); technologies (design, plan and produce items, ICT and computer use). **Subjects concerned:** **Primary and Lower:** Expressive Arts; Sciences; Social Studies; Technologies. **Lower and upper secondary:** Literacy and English.
Ongoing reforms or debates	
Examples of good practices of IP education	
IP education addressed in teachers' initial or in service training	

References:

1. http://www.educationscotland.gov.uk

SLOVAKIA (SK)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In Slovakia, education is the responsibility of the national ministry as well as the municipal administrations. Thus, the Ministry of Education, Science, Research and Sport of the Slovak Republic develops the educational aims, content and methods. The actual administration of the education is up to the municipalities which provide most of pre-primary, primary and lower secondary education.

Compulsory education begins in primary school. Primary and lower secondary education is organised as a single structure, beginning at the age of 6 and consisting of nine years. The compulsory schooling lasts ten years and pupils complete it by finishing the first year of upper secondary education.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic from primary to upper secondary vocational level. Copyright is mentioned at upper secondary vocational level in relation to journalism and IP is referenced at all levels of ICT teaching.

Entry points for IP education at primary level can especially be found in ICT classes where students learn about risks related to the use of internet and ICT, how to protect their personal data, and about the basic rights of authors while copying information. They are taught to respect the rights of others, and to develop their own creative ideas. At lower secondary, students develop a moral awareness and performance related to the use of technology. In citizenship education they learn about ethics and their rights and obligations as well as about illegal acts and their consequences. Furthermore, they acquire more media and creative competences.

At upper secondary level, students study explicitly the values of intellectual property and authorship, as well as the ethical and legal aspects of informatics including software rights of author, licenses and software piracy. Next to ICT, media education, journalism, library and academic information as well as art classes offer plenty of entry points for IP education.

SLOVAKIA (SK)			Primary school education (age 6-10)	Lower secondary education (age 10-15)	Upper secondary level (age 15-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT	Journalism, Library and Academic Information				■
	COPYRIGHT	Journalism, Library and Academic Information				■
		Informatics	■			
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP					
	ARTS					
	ICT		■	■	■	■
	STEM					

SK

IP related learning objectives in the curriculum	**Primary:** rights and obligations, risks related to the use of internet and ICT, personal data protection, basic rights of author while copying (information education), respect the rights of others, creativity and own ideas, attitudes towards values and towards man's work, ethical education. **Lower secondary:** moral awareness and performance related to the use of technology, creativity and ideas, attitudes towards values of men's profession (manual education - technology); responsibility, civic behaviour, citizen's rights and obligations, illegal acts and their consequences, critical thinking in relation with media production and other cultural processes; retroactivity of rights and obligations (Civic Education); creative competences. **Upper secondary:** values of intellectual property; authorship, ethical and legal aspects of informatics (computer sciences, informatics); software rights of author, licensing, legal protection of programmes, licence for software use, rights of author of software producers, multilicense, software piracy (Informational society); critical attitude towards information; rights and obligations, personal responsibilities; legal, ethical principles and risks of ICT use; respect of art, cultural and historical traditions; of IT use; media education; journalism, library and academic information.
Ongoing reforms or debates	Concepts related to IP are part of the innovated educational standards (mainly the national standard for financial literacy - NŠFG) that will come into force from the school year 2015/2016.
Examples of good practices of IP education	Ministry of Culture in collaboration with the Slovak Industrial Property Office, digital platform: aiming at offering basic overview, orientations and sources in a wide range of matters related to IP. The objective is to inform, educate and increase the level of enforcement of IP rights in the country. Designed for experts as well as for students, the general public, and creative people interested in how to protect their work. (www.dusevnevlastnictvo.gov.sk) The national strategy for fighting against falsification and piracy (2012 - 2016): adopted by the Slo-vak Industrial Property Office. One of its aims is to prepare educational projects for different schools related to the problems of IP protection and rights enforcement. The Ministry of education runs a central informational portal for research, technology development and innovation.
IP education addressed in teachers' initial or in service training	

References:

1. National Educational Program http://www.statpedu.sk/

SLOVENIA (SI)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In the Republic of Slovenia, education (including pre-school, primary, secondary and higher education) are in the domain of the Ministry of Education, Science and Sport. According to Eurydice, in the management of public education institutions, the national government plays several roles: it is the regulator, the founder, the main finance contributor and the supervisor. The management of schools is the responsibility of the municipalities.

Compulsory basic education in Slovenia is organised in a single-structure nine-year basic school attended by pupils aged 6 to 15 years. Public basic schools are managed by municipalities. Basic education is financed from municipal and state budgets.

Upper secondary education can take between two to five years, depending on the type of programme (vocational, professional and general programmes). The management and financing of upper secondary schools and the decisions related to distribution of education programmes are taken at the national level.

The language of instruction is Slovenian; the Italian and Hungarian ethnic minorities have the right to have education in their own languages. The Constitution also protects the status and gives special rights to members of the Roma community who live in Slovenia.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic from primary to upper secondary vocational level. Trade marks are referenced at vocational level in relation to economics and entrepreneurship and at lower levels in household education. Copyright is especially mentioned in ICT and art classes.

Entry points for IP education at all levels are numerous. At primary education level, art and music education classes teach students about creativity, innovations, artistic heritage, graphic designs, the concept of "logos", as well as about reproductions or originals.

Students also learn how to use ICT and how to be a responsible consumer. In ethics they are taught their rights, duties and responsibilities and in natural sciences and technology students acquire competences in design and entrepreneurship. At lower secondary level students learn about the creative and critical use of the internet and abuses of digital technology. In Slovenian language classes they discuss copyrights and how to correctly cite sources used. Students also learn about artistic creativity and media education touching on IP issues.

At upper secondary level students speak in informatics about data protection, privacy and copyright learning; how to reference correctly and avoid plagiarism. The subjects of art and graphic design, fine art and music provide a place to speak about creativity, authenticity, innovation and the market value of artistic products. In entrepreneurship, students acquire additional knowledge about marketing and analytical innovation and the legal protection of innovations.

SLOVENIA (SI)			Primary school education (age 6-12)	Lower secondary education (age 12-15)	Upper secondary level (age 15-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	Gospodinjstvo *(Household)*	■			
		IKT in osnove ekonomike (optional) *(ICT and the basic of Economics)*				■
		Basics of entrepreneurship and sale (optional) *(Osnove podjetniš-tva in prodaja)*				■
	DESIGN	Wood sciences *(Lesarstvo)*			■	
	PATENT					
	COPYRIGHT	Informatics and technical communication *(Informatika s tehniškim komuniciranjem)*				■
		The management of application software (Upravljanje z uporabniško programsko opremo)				■
		Maintenance of informatinal equipment (Vzdrževanje infor-macijske opreme)				■
		Information / digital literacy *(Informacijsko opis-menjevanje)*		■		
		Computer Sciences *(Računalništvo)* *(Optional subjects)*	■	■		
		Informatics *(Informatika)*			■	
		Library and IT knowledge *(Knjižnično informa-cijsko znanje)*			■	
		Fine Art *(Likovna umetnost)*			■	
		Business Informatics (optional) *(Poslovna informatika)*			■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY				■	
	PLAGIARISM				■	■
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP				■	■
	CITIZENSHIP					
	ARTS				■	
	ICT		■	■	■	
	STEM					

IP related learning objectives in the curriculum	**Primary:** art, music education (creativity, innovations, artistic heritage, graphic design, concept of "logo", reproductions or originals); ICT use; technics and technology; entrepreneurship, critical reception of artistic / literary works, consumer education, concept of trade mark; human rights and duties; informational technology; society (rights, duties and responsibilities); natural sciences and technology (design, critical, positive attitude, digital literacy, social and citizenship competences, entrepreneurship). **Lower secondary:** citizenship education and ethic (social rules in society; rights, duties and responsibilities; social and ethical dilemmas and questions, critical thinking, equality under the law, rules, human rights, value system); geography. creative and critical use of internet data / information, abuses of digital technology, Slovenian language (author and narrator); chemistry (proper citation of sources used, critical thinking, information sources); philosophy, citizenship culture, artistic creativity, computer science, information / digital literacy, media education. **Upper secondary:** informatics (data protection and privacy, copyright protection of programs, internet use); library and IT knowledge (rules of behavior and ethics, copyright, citation, references, authorship, plagiarism); theory of art (creativity, author, citations, artistic creations; critical attitude towards student's own and peers' work, authenticity, innovation, market value of artistic products); art and graphic design; fine art; music; sociology (personal data protection, human rights); marketing and analytical innovation; entrepreneurship (innovations, creativity, protection of innovations); economy, ICT; law.
Ongoing reforms or debates	
Examples of good practices of IP education	'Podjetništvo': IP education in entrepreneurship education is mentioned as integrated in compulsory and non-compulsory subjects. Entrepreneurship as a compulsory subject (general education), involves encouraging students to develop their own business ideas as well as learning about the importance of creativity and innovation to achieve global competitiveness, protecting innovation and the importance of trade mark and brand. "Uči se iz preteklosti, ustvarjaj prihodnost: izumi in patenti" ("Learn from the Past, Create the Future: Inventions and Patents") and "Uči se iz preteklosti, ustvarjaj prihodnost. Umetnost in avtorska pravica" ("Learn from the past, create the future. The arts and copyright"): Slovenian Intellectual Property Office (SIPO) publications for school-based IP education. (http://www.uil-sipo.si/) "Celoviti program spodbujanja ustvarjalnosti, inovativnosti in podjetnosti mladih" ("Comprehensive program to promote creativity, innovation and entrepreneurship of young people") 2010-2012: Ministry of Economic Development and Technology project involving 1.000 pupils from primary and almost 1.000 students from secondary schools. (http://www.mgrt.gov.si)
IP education addressed in teachers' initial or in service training	IP in some teachers' initial training curricula.

References:

1. http://www.mizs.gov.si/si/delovna_podrocja/direktorat_za_predsolsko_vzgojo_in_osnovno_solstvo/osnovno_solstvo/ucni_nacrti/
2. http://www.cpi.si/srednje-poklicno-izobrazevanje.aspx
3. http://eportal.mss.edus.si/msswww/programi2012/programi/index.htm

SPAIN (ES)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In Spain, the educational system is highly decentralised: competencies are distributed between the Ministry of Education, Culture and Sport at the national level and the authorities of each of the autonomous communities (departments of education).

The central education administration executes the general guidelines of the government on education policy and regulates the basic elements or aspects of the system. Regional education authorities in each autonomous community develops the state regulations and have executive and administrative competences for managing the education system in their own territory.

In Spain, basic education is compulsory and free in publicly-funded schools. It lasts ten years and it is divided into two stages: Primary education (six academic years between the ages of 6 and 12) and secondary education (between the ages of 12 and 16). At the end of this stage, students receive the first official certificate, the Lower Compulsory Secondary Education Certificate, which allows them to have access to upper secondary education or the world of work.

Upper secondary education is also provided in secondary schools. It lasts two academic years, usually studied between the ages of 16 and 18. It offers two possibilities: Bachillerato (general branch) and intermediate vocational training (professional branch).

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic from primary to upper secondary general level. It is touched on in lower secondary in subjects relating to entrepreneurship and ICT, and in ICT at upper secondary level.

In Spain there are plenty of entry points for IP education from primary up to secondary education. At primary level students learn the notions of value and respect and acquire digital skills, including how to use and cite information.

Furthermore, students are taught the use of audio-visual media and ICT; including for creative activities, where they learn to value artistic manifestations and to respect norms, for instance, related to IP in music.

At lower secondary level, students learn about software licenses in ICT, respecting art works and visual education and about values, norms and rights in citizenship education. Students also learn about innovations in IT education and technologies.

At upper secondary level students additionally discuss citation practice, creativity, curiosity and critical reflection, as well as information transfer, privacy control and data protection in sciences of the contemporary world. Furthermore, they enjoy philosophy, audio-visual culture and music and dance classes where aspects of IP are approached.

SPAIN (ES)			Primary school education (age 6-12)	Lower secondary education (age 12-16)	Upper secondary level (age 16-18)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT					
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY				■	
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP			■		
	CITIZENSHIP		■			
	ARTS					
	ICT		■	■	■	
	STEM					

ES

IP related learning objectives in the curriculum	**Primary:** value, respect, care of common heritage, goods and public services; information and digital skills, critical use of information, respect agreed norms; creative participation in linguistic games; use of audio-visual media and ICT; creativity, value artistic manifestation; respects norms regulating IP in music (musical education). **Lower secondary:** property, software, licenses, critical and responsible attitude towards propriety (technologies); respect creations of others (plastic and visual education); democratic values and norms, rights, liberties; responsibilities and civic duties (social and citizenship skills); positive attitudes towards technology and communications innovations (IT education and technologies). **Upper secondary:** critical use of bibliographic references (literature), critical knowledge of ICTs, social attitudes and values (creativity, curiosity, critical reflection), information transfer, privacy control and data protection (sciences of the contemporary world); moral action: liberty and responsibility (philosophy); freedom of expression and individual rights (audio-visual culture); artistic heritage of music and dance (history of music and dance).
Ongoing reforms or debates	The whole basic curricula in Spain will be significantly modified by a new legislation: the so-called Ley Orgánica para la Mejora de la Calidad Educativa (Organic Law for the Improvement of the Educational Quality) or LOMCE 1. This law will be applicable from the academic year 2014-2015 and introduces important changes in terms of rationalizing and simplifying the educational offer. The LOMCE gives greater weight to the major subjects ("asignaturas troncales") in detriment of the more specific ones ("asignaturas específicas"), as a way to reinforce and guarantee the solidity of the basic competences. This law improves the skills related to innovation and entrepreneurship in the basic curriculum, by giving two options during the first level of secondary education: an option for preparation into higher Secondary Education and an option for preparation into vocational education. Within the curriculum of the general primary education, there is even an explicit mention to IP in the "Educación Musical" (Music Education) and in the "Educación Artística" (Artistic Education) subjects, where it is stated that the student "accepts and respects the norms regulating the intellectual property in terms of use and copy of music creations" and that he/she will not "allow the use of his/her own image when he/she does not consider it purposeful".
Examples of good practices of IP education	"Educate to create: Intellectual Property in the classroom": project carried our by the University of Alcalá, in conjunction with the Education area of the Principado de Asturias in 2008, with the participation of students in elementary, middle and high school (6-17 years). (http://www.ite. educacion.es/formacion/enred/materiales_en_pruebas/educar_para_crear/) "Learning from the past to create the future: artistic creations and copyright": The resource library of the Ministry of Education, Culture and Sport (MECD) offers secondary school teachers material to be used as a complement to literature and art programmes, particularly when students are asked to create original works in these areas. This material was created by the World Intellectual Property Organization and translated into Spanish by the Ministry as a concrete action within the government's integrated plan for reducing and eliminating activities that infringe intellectual property.
IP education addressed in teachers' initial or in service training	

References:

1. http://www.boe.es
2. http://todofp.es/todofp/profesores/Normativa/legislacion.html
3. Real Decreto 126/2014, de 28 de febrero, por el que se establece el currículo básico de la Educación Primaria. http://www.boe.es/boe/dias/2014/03/01/
4. https://sede.educacion.gob.es/publiventa/descarga.action?f_codigo_agc=13284C_19

SWEDEN (SE)

INTRODUCTION TO THE EDUCATIONAL SYSTEM

In Sweden, educational goals and learning outcomes are defined at the central level of government. Although the central government has the overall responsibility for education and sets the framework for education at all levels; municipalities are responsible for providing and operating schools at primary and secondary level. Laws and ordinances set their legal framework and stipulate degrees in first, second and third cycle tertiary education and their requirements.

In Sweden, all pupils in compulsory and upper secondary school attend publicly funded schools. All education in the school system and in higher education institutions - except for students from non-EU/EEA countries - is free of charge.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic at upper secondary vocational level. Trade marks, patents and copyright are mentioned in the context of legal studies, arts and economy. It is also addressed in entrepreneurship education, where students should get knowledge of how ideas and products are protected by laws and regulations.

At all levels, entry points for IP education can be found in the creative areas of education and the optional web classes. At upper secondary level art classes, students discuss legal and ethical issues concerning the freedom of expression; as well as copyright in cultural expressions and communication. In business law classes, they explicitly discuss intellectual property law and the protection of trade marks, patents and other copyright material.

SWEDEN (SE)			Primary school education (age 7-16)	Lower secondary education (age 7-16)	Upper secondary level (age 16-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas					■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	Business Law -(optional) *(Affärsjuridik)*				■
	DESIGN					
	PATENT	Business Law -(optional) *(Affärsjuridik)*				■
		Economy *(Ekonomi)*				■
	COPYRIGHT	Business Law -(optional) *(Affärsjuridik)*				■
		Arts program (optional) *(estetiska programmet)*				■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					■
	CITIZENSHIP					
	ARTS					■
	ICT					
	STEM					

IP related learning objectives in the curriculum	**All levels:** all creative areas in education, web classes. **Upper secondary:** legal and ethical issues concerning freedom of expression and copyright in cultural expressions and communication (arts); Intellectual property law, protection of trade marks, patents and other copyright (business law); knowledge of how ideas and products are protected by laws and regulations (entrepreneurship).
Ongoing reforms or debates	The Nordic Council of Ministers (NMR) decided in april 2009 to conduct a Nordic comparative study on how creativity, innovation and entrepreneurship are integrated into the Nordic school systems.
Examples of good practices of IP education	"Copyright material in education": five guides available on the Ministry of Education webpage, related to images, television, radio, films, internet, music, and texts. Also available is a general guide about copyright and performing rights with examples on IP education. A section on school development covers entrepreneurship with links to a Nordic magazine about entrepreneurship in school; links to a teachers' university entrepreneurial teaching course. (http://www.skolverket.se/) The government states, "Entrepreneurship in school is about bringing forward and developing student curiosity, initiatives and confidence from a young age." IP education in entrepreneurship education is mentioned in the national curriculum, integrated as a non-compulsory subject where students may gain knowledge of how ideas and products are protected by laws and regulations.
IP education addressed in teachers' initial or in service training	

References:

1. The Ministry of Education's official webpage: http://www.skolverket.se
2. Nordic Comparative Study: http://www.skolverket.se/om-skolverket/publikationer/visa-enskild-publikation?_xurl_=http%3A%- 2F%2Fwww5.skolverket.se%2Fwtpub%2Fws%2Fskolbok%2Fwpubext%2Ftrycksak%2FRecord%- 3Fk%3D2374

WALES (UK[3])

INTRODUCTION TO THE EDUCATIONAL SYSTEM

The Welsh government's Department for Education and Skills **(DfES)** has responsibility for determining national policies and for the direction of the education system as a whole. Schools must by law provide the national curriculum and religious education. Schools are responsible for planning the whole curriculum experienced by pupils, taking into account the school's particular needs and circumstances.

Full-time education is compulsory between the ages of 5 and 16 years. Full-time compulsory education is divided into four Key Stages: Primary education from age 5 to 11 (Key Stages 1 and 2), followed by lower secondary education (Key Stages 3 and 4).

Upper secondary education (Key Stage 4), with subject specialisation from age 16 to 18/19, is followed by the great majority of young people and ends with the General Certificate of Secondary Education (GCSE). Vocational qualifications are also available for study alongside GCSEs.

INTEGRATION OF IP EDUCATION IN THE CURRICULUM

IP is an integrated topic at primary level, and is addressed through ICT and STEM classes.

There are plenty of entry points for IP education at all levels in Wales. Students learn from primary education about how to use ICT and how to use technology to research, develop and present work. The subject of music is used as an occasion to learn about technology and creativity and in sciences students learn how to access, collect, process, analyse and present relevant scientific evidence, information, ideas and data.

In Wales, students are taught design and technology; during which they learn how to find information from databases and the internet, how to communicate and present the ideas using word processors, presentation software, computer-aided design and computer-aided manufacture. In arts and design they also learn how to investigate, manipulate, develop or realise creative ideas and select appropriate software and multimedia equipment.

WALES (UK[3])			Primary school education (age 5-11)	Lower secondary education (age 11-14)	Upper secondary level (age 14-18)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■			
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT					
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP					
	ARTS					
	ICT		■			
	STEM		■			

UK[3]

IP related learning objectives in the curriculum	All levels: ICT use; music (music technology, creativity); English (using technology to research, develop and present work); science (access, collect, process, analyse and present relevant scientific evidence, information, ideas and data); design and technology (find information from databases and the internet, communicate and present the ideas using word processors, presentation software, computer-aided design and computer-aided manufacture); art and design (investigate, manipulate, develop or realise creative ideas, select appropriate software and equipment, multimedia).
Ongoing reforms or debates	
Examples of good practices of IP education	
IP education addressed in teachers' initial or in service training	

References:

1. http://wales.gov.uk/

SWITZERLAND (German Speaking Part) (CH[1])			Primary school education (age 4-10)	Lower secondary education (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	Economy and Law			■	
	DESIGN	Arts: Design & Music	■	■	■	
	PATENT	Economy and Law			■	
	COPYRIGHT	Economy and Law			■	
		Informatics		■	■	
		Languages			■	
		Media and informatics		■		■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY			■	■	■
	PLAGIARISM				■	
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP			■	■	
	ARTS		■	■	■	■
	ICT			■	■	■
	STEM					

CH[1]

IP related learning objectives in the curriculum	**Primary and lower secondary level education:** methodical competences (competent and social responsible use of media, ICT and information), Arts & Design (product design, creation and production process, context of technical inventions), Music (music software and creation), media and ICT (media competencies, production of own media content respecting the legal framework), Nature, men, society (social, legal and economic aspects in daily life, consumer education, production, trade, values & norms. **Upper secondary level education (general education):** perspectives from research, science, society, responsible citizenship, information management (researching, creating, disseminating and keeping knowledge), informatics (quotation of internet sources, legal basics), Languages (creative writing), geography (globalisation), Economy & Law (interdependency rights, society, culture, economy), Arts: Design & Music (critical reflection of one's own and others' work, creation as a process, develop own ideas, technical and textile product design, composition). **Upper secondary education (VET):** ethics, morality, values, legal system, use of inventions and scientific knowledge, responsibility for yourself and others, cultural, economic, social, political, legal and ecological interdependencies, ICT use, quotations, avoid plagiarism, informed citizens, responsible consumers, product design.
Ongoing reforms or debates	Media and ICT education aiming at a thoughtful, critical and secure use of media and ICT is reinforced in the new regional curriculums for compulsory education ("Lehrplan 21" published in October 2014 by the the Schweizerische Konferenz der kantonalen Erziehungsdirektoren (EDK).
Examples of good practices of IP education	"Youth and media": national programme (2011-2015) fosters a secure, age-adequate and responsible use of digital media. Brochure "Media competence in school". Educa Online guides for teachers: Copyright, legislation, ICT & Ethics. Media compass: media and ICT teaching material for secondary education (module on copyright). With SRFmyschool (Swiss television channel for use in classroom) several broadcasts were produced ("Piracy, Copyright & Co"). Respect ©opyright !: A school event involving artists offered by the Swiss collective rights management organisations (can be booked by schools). DICE Project Digital Copyright in Education: informative website with resources and learning tools ("Das Urheberrecht im Kontext von Unterricht und Lehre"). Developed by higher education institutions and funded by the Swiss Confederation. Fair Kopieren! Urheberrecht Achten: Information and guidelines for teachers about photocopying in school. Created by Swiss teaching publication companies. The portal.nanoo.tv facilitates the use of TV and film in schools providing a legal basis with "common tariffs" established with industry stakeholders. "Jugend forscht": youth programme of The Swiss Federal Institute of Intellectual Property informs youth about patents, trade marks and designs. (http://goo.gl/EXXl5F)
IP education addressed in teachers' initial or in service training	Universities of teacher education have departments for media education. See: e.g. http://www.phzh. ch/medienbildung/

References:

1. Lehrplan 21: http://vorlage.lehrplan.ch/downloads.php
2. Lehrplan gymnasialer Bildungsgang: http://www.erz.be.ch/erz/de/index/mittelschule/mittelschule/gymnasium/lehrplan_maturitaetsausbildung. html
3. Rahmenlehrplan für Fachmittelschulen: http://www.edk.ch/dyn/16552.php
4. Rahmenlehrplan für Berufsmaturität: http://www.sbfi.admin.ch/themen/01366/01379/01571/index.html?lang=de
5. Berufliche Grundbildung: http://www.sbfi.admin.ch/bvz/grundbildung/index.html?lang=de

SWITZERLAND (French Speaking Part) (CH[2])			Primary school education (age 4-10)	Lower secondary education (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas			■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	General education *(Formation générale)* Interdependencies *(social, economic and environmental)* (Interdependances *(sociales, economiques et environnementales)*)			■	
		Complementary economy option and law *(Option complementai-re economie et droit)*				■
		Geography *(general knowle-dge and trade schools)* (Geography *(ecoles de culture generale et commerce)*)				■
	DESIGN					■
	PATENT	Complemetary option: economics and law *(Option complementaire economie et droit)*				■
						■
						■
	COPYRIGHT	Introduction to economics and law *(Introduction a l'economie et au droit)*				■
		Media, Images, Information and Communication Technologies *(MTIC - Medias, Images, Technologies de l'Information et de la Communication)*		■	■	
		Visual arts *(Arts visuels)*			■	
		Media education *(Education aux medias)*		■	■	
		IT Management, IT and office, IT and law *(Informatique de gestion, informatique et bureautique, informatique et droit)*				■
		Economics *(Sciences économiques)*			■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY					
	PLAGIARISM					

CH[2]

IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP				
	CITIZENSHIP		■	■	■
	ARTS			■	
	ICT		■	■	■
	STEM				
IP related learning objectives in the curriculum	Possible entry points: **Primary and Lower secondary education:** - Interdépendances (sociales, économiques et environnementales): Analyser des formes d'interdépendance entre le milieu et l'activité humaine - Réflexion sur les produits de consommation proposés (prix, publicité, mode,...) et sur leurs conséquences (énergie grise, travail des enfants, contrefaçon,...). - MTIC - Médias, Images, Technologies de l'Information et de la Communication): production de réalisations médiatiques et ëchanges, communication et recherche sur internet – prise en compte des lois en vigueur dans le domaine de la publication, de l'usage d'internet, de la communication, du plagiat ; présentation et prise en compte des notions liées au droitd'auteur. - Education aux médias. **Upper secondary (general):** - Sciences économiques: l'économie du web - Arts visuels: prendre conscience de l'engagement que suppose la création - Informatique (option complémentaire): Sécurité, droit et éthique informatique: Protection des données et de la personnalité, droits d'auteur, piratage **Upper secondary (vocational):** – Objectifs géneraux (maturité spécialisée): respecter la propriété intellectuelle des sources utilisées (emploi adéquat des citations) - Informatique de gestion: Conduire l'élève à prendre conscience de l'importance des informations qu'il manipule en abordant les principes définis dans la loi sur la protection des données - Informatique et bureautique: Développer une attitude responsable dans le traitement des informations (confidentialité, pertinence, statut juridique) **Maturité professionnelle:** - Introduction à l'économie et au droit: La propriété intellectuelle, le droit d'auteur - Option complémentaire économie et droit: Les marques (la propriété intellectuelle, le marketing, ...) - Option complémentaire informatique: Être conscient des implications sociales, légales, économiques et politiques de l'accès à l'information électronique Travail de maturité: projet personnel d'études qui se déroule sur les deux dernières années de maturité				
Ongoing reforms or debates					
Examples of good practices of IP education	Téléchargement : quelles limites à la liberté sur Internet?: specifically addresses IP in media education.				
IP education addressed in teachers' initial or in service training					

References:

1. http://www.irdp.ch/documentation/programmes_etudes/programmes_etudes.html#sec2_fr
2. http://www.ciip.ch/default.asp
3. http://www.erz.be.ch/erz/fr/index/mittelschule/mittelschule/fachmittelschule/Lehrplanfachmittelschulen.html
4. http://www.plandetudes.ch/web/guest/fg/cg3/

SINGAPORE (SG)			Primary school education (age 7-12)	Lower secondary education (age 13-16)	Upper secondary level (age 17-22)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN	Computer applications		■		
	PATENT	Civics and moral education	■		■	
		Revised pre-university civics			■	
	COPYRIGHT	English teaching			■	
		Cyber wellness	■	■		
		Computer applications		■		
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY		■	■	■	
	PLAGIARISM					
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					
	CITIZENSHIP		■	■	■	
	ARTS					
	ICT			■		
	STEM			■		

SG

IP related learning objectives in the curriculum	Lower and upper secondary level education: Music: • the role and significance of recorded/ synthesized sounds on music making and every day lives (CD/MD, MP3, Sampled Sound, MIDI) • the different roles of individuals in the music industry (composer, performer) and • the different roles of individuals in the music and related industries (arranger, music producer and engineer, audience/consumer) Upper secondary Vocational Education: Design, IT and business related careers
Ongoing reforms or debates	Most of the syllabus are very recent (2014) and include up to date topics and learning objectives, but an important number of the syllabuses is from the year 2007, and is therefore seven years old, so an update should be expected.
Examples of good practices of IP education	"Entrepreneurship in Creative Industries" (post-secondary VET Education): covers topics on copyright/ intellectual property rights through contemporary case studies from Singapore and worldwide. IP Expedition: IPOS outreach programme to help primary school students better appreciate the importance of intellectual property and copyright concepts. This is mainly delivered through a 30 minute interactive skit. IP Expedition aims to reach out to 150 primary schools by the end of 2014. (http://www.ipos.gov.sg/News/Readnews/tabid/873/articleid/243/category/Press%20Releases/parentId/80/year/2013/Default.aspx) Booklet "A Day in the life of Jacob": An educational initiative by IPOS aimed at primary school students containing comics and hands-on activities to educate students on the different types of IP as well as the importance of respecting IP rights. (http://www.ipos.gov.sg/News/Readnews/tabid/873/articleid/243/category/Press%20Releases/parentId/80/year/2013/Default.aspx) B4U Surf is a website operated by the Business Software Association (BSA) providing information for parents, children and educators on all aspects of Internet safety, including the ethical use of the Internet. The section for educators complements the Ministry of Education's Cyber Wellness program. (http://www.b4usurf.org/) Project Intellectual Property Partners: initiative aimed at bringing established local IP creators together to share their creative journey and IP experience with the community. IP are invited to share relevant IP information. PIPP sessions have been running almost every month since May 2014, covering genres such as photography, gaming, illustrations, fashion, publishing and music. Attendees come from the local polytechnics, universities and institutions, as well as the general public. Flagship public outreach initiative (HIP Alliance) of the Intellectual Property Office of Singapore (IPOS) social media campaign. (https://www.facebook.com/HIPalliance and https://twitter.com/hip_ friends) Virtual World Project: providing a secure environment in which students can explore and interact with elements of their virtual environment. A related portal provides a document repository, forum for discussions and a blog about the project. Access to both the portal and the virtual world is restricted, in order to maintain the safety of users. The MOE's eMedia channel for educators provides a space for teachers to share video projects and lessons that they and their pupils have devised. Access is limited to educators with the appropriate login information. TOUCH Community Services Among the many services offered by this non-profit organisation is a cyber-wellness programme operated by its affiliate, TOUCH Youth. The program has been operational since 2001, is supported by the Ministry of Community Development, Youth & Sports, the National Development Council and the Media Development Authority, and has reached over 600,000 young people, parents and educators at over 280 schools. It has achieved this through its CRuSH (Cyberspace Risks and where U Seek Help) programme and through a center in Bukit Merah, the PlanetCRuSH Cyber Wellness Centre. To find out more about TOUCH Community Services go to http://www.touch.org. sg/ and to find out more about CRuSH go to http://www.planetcrush.org/
IP education addressed in teachers' initial or in service training	All selected candidates who are not trained in teaching pedagogy will have to undergo training at the National Institute of Education (NIE). NIE conducts 3 pre-service teacher training programmes. All three programmes include Curriculum studies, where IP and IP rights issues are surveyed.

References:

1. Singapore curriculum: http://www.moe.gov.sg/education/syllabuses/

CALIFORNIA (US[1])			Primary school education (age 4-10)	Lower secondary education (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	History and Social Science			■	
	DESIGN					
	PATENT	History and Social Science			■	■
	COPYRIGHT	History and Social Science			■	■
		Visual and Performing Arts	■	■	■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY		■	■	■	■
	PLAGIARISM				■	■
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP				■	■
	CITIZENSHIP		■	■	■	■
	ARTS		■	■	■	■
	ICT				■	■
	STEM				■	■

US[1]

IP related learning objectives in the curriculum	**Compulsory:** – Visual and Performing Arts Framework Kindergarten through 12th Grade: Copyright Law and the Visual and Performing Arts (An indicator of the standards of ethical behavior that includes understanding the concept of copyright and applying them. Students must be informed about the basic purpose of copyright, including fair-use exceptions, so that they will respect and comply with the law) – History Social Science Framework – 12th Grade– Principles of American Democracy – Evaluate and take and defend positions on the scope and limits of rights and obligations as democratic citizens - Explain how economic rights are secured and their importance to the individual and to society (e.g. the right to acquire, use, transfer, and dispose of property; right to choose one's work; right to join or not join labor unions; copyright and patent). **Vocational:** History Social Science Explain how economic rights are secured and their importance to the individual and to society (e.g., the right to acquire, use, transfer, and dispose of property; right to choose one's work; right to join or not join labor unions; copyright and patent) (12th grade); Ethics and Legal Responsibilities - Adhere to the copyright, intellectual property laws and regulations, and use and cite proprietary information appropriately; Pathway Standards: Entrepreneurship Pathway
Ongoing reforms or debates	Common Core State Standards English and Mathematics (http://www.corestandards.org/) (http://www.cde.ca.gov/be/st/ss/index.asp) Educational standards describe what students should know and be able to do in each subject in each grade. In California, the State Board of Education decides on the standards for all students, from kindergarten through high school. Having the same standards helps all students get a good education, even if they change schools or move to a different state. Teachers, parents, and education experts designed the standards to prepare students for success in college and the workplace. A Blue Print for Great Schools: http://www.cde.ca.gov/eo/in/bp/documents/yr11bp0709.pdf Provides vision and direction for education system, including a focus on 21st Century learning, meeting the needs of the whole child and the matching with the needs of real world.
Examples of good practices of IP education	The School Library Standards for California Public Schools, (Kindergarten through Grade Twelve): extent contents specifically about IP Education. The main goal is to help students "demonstrate ethical, legal and safe use of information in print, media and online resources." 7th–8th Grade Explain ethical and legal issues related to the use of intellectual property including print, visual, audio, and online materials (e.g. fair use, file sharing). 9th–12th Grade Understand the differences between quoting, summarizing, and paraphrasing and apply these skills to own work.(http://www.cde.ca.gov/ci/cr/lb/) The Center for Copyright Information, a partnership between the MPAA, RIAA and five large U.S. Internet providers, is teaching copyright classes in California public schools for kids from kindergarten through sixth grade. 'Be A Creator'™ (kindergarten through sixth grade curriculum): is the result of CCI's partnership with the California School Libraries Association and iKeepSafe, a leading digital literacy organization. (http://www.cde.ca.gov/ci/cr/lb/).
IP education addressed in teachers' initial or in service training	Teacher librarian services credential: One of the requirements is Digital Citizenship: understanding of the ethical, legal and safe use of information and technology. Respect for copyright, intellectual property, and the appropriate documentation of sources (http://www.ctc.ca.gov/credentials/leaflets/cl562.pdf). Multiple Subject Teaching Credential: One of the standards is Technology in the Subject Matter Program in which prospective teachers are introduced to ethical and social issues related to technology, such as privacy and ownership of intellectual property. http://www.ctc.ca.gov/educator-prep/standards/AdoptedMSStandards.doc Business Teacher Preparation – Standards of quality – Business Law; Information Technology Ethics, Security, and Data Integrity: ethical procedures related to information technology, including management of intellectual property. http://www.ctc.ca.gov/educator-prep/standards/SSMP-Handbook-Business.pdf Industrial and Technology Education Teacher Preparation – Standards of quality – Society and Globalization: Demonstrate an understanding of legal and ethical issues related to technology (e.g., copyright, liability, intellectual property, patents). www.ctc.ca.gov/educator-prep/.../ssmp-handbook-industrial-tech.doc

References:

1. http://www.cde.ca.gov/be/st/ss/documents/librarystandards.pdf#search=School%20Library%20Standards%20for%20Students&view=FitH&pagemode=none
2. http://www.cde.ca.gov/
3. (http://www.corestandards.org/)
4. http://www.cde.ca.gov/pd/ca/sc/stemintrod.asp
5. http://www.nbpts.org/ (Teachers certification)

MASSACHUSETTS (US[2])			Primary school education (age 4-10)	Lower secondary education (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT	Arts - Technology Competencies and the Arts	■	■	■	
		Foreign Languages	■	■	■	
		Management and Entrepreneurship				■
	COPYRIGHT	Arts - Technology Competencies and the Arts	■	■	■	
		Foreign Languages	■	■	■	
		Management and Entrepreneurship				■
		Technology Literacy				■
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY		■	■	■	
	PLAGIARISM					■
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP					■
	CITIZENSHIP		■	■	■	■
	ARTS					
	ICT					
	STEM					

US[2]

IP related learning objectives in the curriculum	The Technology Literacy Standards, focused on 21st century skills, were approved by the Board of Elementary and Secondary Education in April 2008 and incorporates kindergarten to upper secondary education. The Standards are there in order "to help students develop technology literacy skills to learn the content of the curriculum" and are present in several specific subjects: • Standard 2 is transversal to various subject areas helping students under-stand the ethics and safety issues in using electronic media. Issues relating to privacy, plagiarism, file sharing. How copyright law protects the owner-ship of intellectual property and consequences of violating the law including the misuse of technology for personal and commercial reasons (e.g. software piracy, unauthorized files). In the Arts Curriculum, there are specific contents related with IP Education. Students must understand the roles of "artists in the community" identifying the roles of different stakeholders (e.g. government, philanthropy, arts institutions, critics) and recognizing the use and impact of music copyright laws and how they affect composers and performers. In all Vocational Education courses these two subjects are required, related to IP Education: • Management and Entrepreneurship Knowledge and Skills (Strand 5) - Legal/Ethical/Social Responsibilities (e.g. understanding of legal, ethical and social responsibility for businesses); • Technology Literacy knowledge and skills (Strand 6) – Responsible use of technology (e.g. privacy, security) and an understanding of ethics and safety issues (e.g. copyright, plagiarism in using electronic media at home, in school and in society).
Ongoing reforms or debates	Since 2008, the Massachusetts government promoted the integration of 21st century skills into the State's educational programs in order to better promote the skills needed in the labor market at schools. This ongoing project is being implemented at different levels including vocational education. Important to note that this program has Educator Training and Development integrated within it. http://www.doe.mass.edu/news/news.aspx?id=4429 Common Core State Standards – English Language Arts and Mathematics. In Massachusetts, the common standards have been incorporated since 2009. Teachers, parents, and education experts designed the standards to prepare students for success in university and the workplace.
Examples of good practices of IP education	"Digital Citizenship": webpage providing diverse resources; including games, videos and classroom curricular material; developed by a diverse range of NGOs. Materials are available for teachers, students and parents and cover topics such as online safety, privacy and credibility. (www.doe. mass.edu/odl/digitalcitizen) Skills USA Massachusetts: is based on the national programme, Skills USA, for high schools and university students. The program being implemented in Massachusetts provides opportunities for the development of different skills relevant for the work world such as improved teamwork, leadership and professional skills. The programme integrates academic standards with professional job shadowing. One important aspect of the content relates to IP education. Students have to present research on the ethical guidelines of organization; e.g., contracts and their uses, legal topics, etc. (http://www.maskillsusa.org/)
IP education addressed in teachers' initial or in service training	Massachusetts Tests for Educator Licensure, promoted by Massachusetts Department of Elementary and Secondary Education is part of the process to gain a license as a teacher. To have access the following teachers licenses they must have knowledge of contents related to IP Education. Some examples: • Business (5-12 grades) – ethical and social responsibility in business (e.g. use of technology, privacy); business law and legal environment of business (e.g. legal issues related to technology systems – intellectual property, copyright and piracy)

References:

1. http://www.doe.mass.edu/frameworks/current.html
2. http://www.doe.mass.edu/cte/frameworks/?section=strands
3. http://www.doe.mass.edu/cte/
4. http://www.doe.mass.edu/pd/standards.pdf
5. http://www.doe.mass.edu/recert/2000guidelines/default.html
6. https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXII/Chapter71/Section38G

WASHINGTON (US[3])			Primary school education (age 4-10)	Lower secondary education (age 10-14)	Upper secondary level (age 14-19)	
					General	Vocational
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS					
	DESIGN					
	PATENT					
	COPYRIGHT	Educational Technology	■	■	■	
		Social Studies	■	■	■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY		■	■	■	
	PLAGIARISM			■	■	
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP		■	■	■	
	CITIZENSHIP		■	■	■	
	ARTS					
	ICT					
	STEM		■	■	■	

US[3]

IP related learning objectives in the curriculum	Educational Technology – has specific content about digital citizenship. Students practice safe, legal and ethical behavior with themes such as the practice of personal safety, ethical and respectful behavior, appropriate use of the creative digital work of others, copyright law, impact of unethical use of technology, (e.g., hacking, plagiarism, pirating). This content is created for all grades. Students from 9th to 12th grades have to work on different content related with Intellectual Property such as "exploring copyright", analyzing campaigns for fair use, the use of online music rights and respect for the intellectual property work of others. Social Studies – a specific content about social studies skills. This module exists in all grades. Students have as their goal to understand and demonstrate ethical re-sponsibility one has in using and citing sources as well as understanding the rules related to plagiarism and copyright.
Ongoing reforms or debates	21st century, academic and technical skills, A program promoted by the National Government, and implemented in Washington by the Career and Technical Educa-tion (CTE). Through CTE, students are more connected with the reality of the labor market in order to understand what careers most suits their expectations and what skills they need to develop to engage in them. The program promotes different activities such as: exploring careers in middle and high school, Identifying a career goal, take classes in high school, at skills centers and at community and technical colleges that apply math, science and other academic subjects in real-life; become leaders by participating in skills competitions and community service. The resource manual clearly refers to content related to Intellectual Property Education such as copyright and patent concerns related to the creation of media products as well as those related to innovation skills. http://www.k12.wa.us/CareerTechEd/pubdocs/21stCenturySkillsinCTEResourceManual.pdf In Washington State, vocational education is mainly implemented at the tertiary level, however, in 2009 the State Superintendent of Public Instruction promoted a Technical High School Feasibility Study in order to understand the social and financial impact of the implementation of Technical High Schools and "Technical Innovation High Schools". Within this ongoing debate IP education is mentioned but the implementation of a larger vocational education program is still pending. Common Core State Standards - English Language Arts and Mathematics (http://www.corestandards. org/) (http://www.k12.wa.us/CoreStandards/default.aspx) Educational standards describe what students should know and be able to do in each subject in each grade. In Washington, the State Board of Education decides on the standards for all students, from kindergarten through high school. By 2014-2015 these standards will be fully implemented. Having the same standards helps all students get a good education, even if they change schools or move to a different state. Teachers, parents, and education experts designed the standards to prepare students for success in college and the workplace.
Examples of good practices of IP education	Information and technology literacy instruction: Washington Library Media Association (WLMA): 71% of school librarians include digital citizenship, specifically appropriate and responsible technology use, as part of their school or district curriculum. Library Information and Technology (LIT) framework Created by Washington Library Media Association (WLMA), defines the essential functions for certified teacher-librarians. One of the contents is information and technology literacy instruction. The main goal of this is to teach students to be critical consumers and producers of information and to be safe, ethical and responsible digital citizens.
IP education addressed in teachers' initial or in service training	National Educational Technology Standards for Teachers has references to IP Education that refers to safe, legal and ethical use of digital information and technology. Subjects resources – OSPI Developed Assessment teachers share different resources to implement in their classroom (http://www.k12.wa.us/EdTech/Assessment/CBAs/G9-12SpeakUp.pdf)

References:

1. http://www.wlma.org/frameworksandstandards
2. http://www.k12.wa.us/EdTech/Standards/pubdocs/K-12-EdTech-Standards_12-2008b.pdf
3. http://www.k12.wa.us/SocialStudies/pubdocs/SocialStudiesStandards.pdf
4. http://www.k12.wa.us/CareerTechEd/pubdocs/21stCenturySkillsinCTEResourceManual.pdf
5. http://depts.washington.edu/ctpmail/research/teaching_policy.shtml
6. http://program.pesb.wa.gov/approved/teacher
7. http://www.wacte.org/
8. http://www.wtb.wa.gov/Documents/OSPITechschoolstudy.pdf

HONG KONG (HK)			Primary school education (age 4-10)	Lower secondary education (age 10-14)	Upper secondary level (age 14-19)	
					General (age 14-17)	Vocational (age 14-19)*
Inclusion of IP elements in the curriculum	Separate 'stand-alone' subject					
	Integrated into a specific subject or as a theme across different curriculum areas		■	■	■	■
Aspects of IP mentioned in the curriculum	SUBJECT					
	TRADE MARKS	Design and Applied Technology			■	
		ICT			■	
		Computer Literacy		■		
	DESIGN	Design and Technology		■		
		Design and Applied Technology			■	
		Computer Literacy		■		
		ICT			■	
	PATENT	Design and Applied Technology			■	
		ICT			■	
		Computer Literacy		■		
		Liberal Studies			■	■
	COPYRIGHT	General Studies	■			
		Computer Literacy		■		
		ICT			■	
		Media & Communication				■
		Design and Applied Technology			■	
Additional aspects of IP mentioned in the curriculum	CONFIDENTIALITY, SECRETS, PRIVACY		■	■	■	■
	PLAGIARISM		■	■	■	■
IP connected learning areas mentioned in the curriculum	ENTREPRENEURSHIP			■	■	■
	CITIZENSHIP		■			
	ARTS					
	ICT		■	■	■	■
	STEM			■	■	

*vocational training can last between 2-4 years depending on the type.

HK

IP related learning objectives in the curriculum	Primary level - General Studies: to respect intellectual property rights and privacy, to obey the security rules when using information technology. Junior secondary level - Computer Literacy: Be aware of intellectual property rights, data privacy issues, etc. and observe the rules and regulations in handling information. Junior secondary level - Design and Technology: Design consideration – value of intellectual property and possible ways to protection. Junior secondary level – Life and Society: To nurture student with the following value, Human rights and responsibilities, Self-reflection and self-discipline, Honesty and integrity, Respect for rule of law, Fairness, Freedom, Social justice. Senior secondary level - Information and Communication Technology: major issues regarding intellectual property and privacy, the need to use ICT safely, sensibly, legally and ethically. Senior secondary level - Design and Applied Technology: Understand the value of intellectual property - understand the principles of legal protection of design (e.g. IP rights, copyright, patents and trade marks). Senior secondary level – Liberal Studies: To understand that the fruits of scientific and technological research should be respected and how they are protected, To use copyright works in accordance with copyright laws, and respect intellectual efforts of authors by acknowledging the sources from which the information used is quoted. Across levels - Moral, Civic and National Education: "Respect law and order and abide by the law" and "Recognize the importance of "Respect for Rule of Laws" and "Respect for Human Rights" in our society" are the Expected Learning Outcomes at the Key Stage Two (Primary 4 to 6) and the Key Stage Four (Secondary 4 to 6), respectively, in the Revised Moral and Civic Education Curriculum Framework (2008), One of the life event exemplars proposed in the Key Stage 4 is "All of us should respect intellectual property!".
Ongoing reforms or debates	The Basic Education Curriculum Guide is updated in 2014. We are in the pipeline to review and update the Secondary Education Curriculum Guide covering Key Stage 3 and 4 (i.e. Secondary 1 to 6) which is expected to be available in late 2015.
Examples of good practices of IP education	Life and Society" (junior secondary education, age 12-15): curriculum guide includes as its core module on 'Sensible Consumption', where students learn about consumer rights, and their responsibility to respect Intellectual Property. "CyberEthics for Students and Youth": website providing guidelines for parents, and suggesting learning activities for teachers and students regarding the ethical, legal, psychological and technical issues of Cyber Ethics. (http://cesy.edb.hkedcity.net) "IP Teen City" (developed by Intellectual Property Department): on-line teaching kit divided into two sections, "Kids Zone" and "Youth Zone". Easy-to-use IP teaching materials are also prepared for teachers. (http://www.ip-kids.gov.hk) Comic Books (published by the Intellectual Property Department): Two comic series targeting youngsters and students. Each series contains 30 strips with attractive graphics on different IP subjects. Mainly distributed through school visits and at various public exhibitions. (http://www.ipd. gov.hk/eng/promotion_edu/educational_corner/comics/index.htm and http://www.ipd.gov.hk/eng/promotion_edu/educational_corner/comics_2/index.htm) School visit programme (run by the Intellectual Property Department): school talks for primary and secondary schools, given by IP tutors. For tertiary institutions, seminars are organised, inviting speakers working in graphic design, music and movie industries, IP bodies etc. to encourage creativity, share views and experiences from their work environment and strategies for IP protection. Interactive Drama programme (run by the Intellectual Property Department): 30 minute dramas with messages on anti-internet piracy and respect for creativity, originality and IPRs. It consists of interactive elements in order to arouse interests and encourage participation among students. First introduced in secondary schools, it is now extended to primary. "Respect Copyright": (campaign for primary and secondary schools) since 2007, organised by Reprographic Rights Licensing Society together with the IPD and Hong Kong Customs and Excise Department. The competition requires students to design and create their own work expressing one of the three themed messages: respecting copyright, supporting genuine work and encourage creativity, and legal copying. (2014. http://www.hkrrls.org/?page_id=2174) The Hong Kong Copyright Licensing Association (HKCLA) offers a waived, one-stop collective licensing scheme for photocopying of newspapers, available to primary and secondary teachers of schools registered with Education Bureau. Only requirement is to fill in a monthly report form. (http://www.hkcla.org.hk/service_licence_schemes.php)

IP education addressed in teachers' initial or in service training	Learning & Teaching Resources of most Curriculum guides of the Education Bureau includes reference to Intellectual Property Department website of Information on "copyright and education". Recent professional development programme: A seminar was re-run on 5 June 2014 on 'Use of copyright materials for education' with the aim of updating teachers' knowledge of copyright in education, e.g. Hong Kong's copyright law, copyright exceptions on education, licensing for schools, Creative Commons licences, etc. Primary levels: 2014 - Strengthening Media Information Education. Secondary levels: 2012 - NSS Enriching Knowledge for the Information and Communication Technology Curriculum, Series: (9) Proper use of the Internet. 2014 - Learning and Teaching Strategies for the Information and Communication Technology Curriculum Series: (7) Effective use of learning and teaching resource materials to teach social implications of information and communication technology.

References:

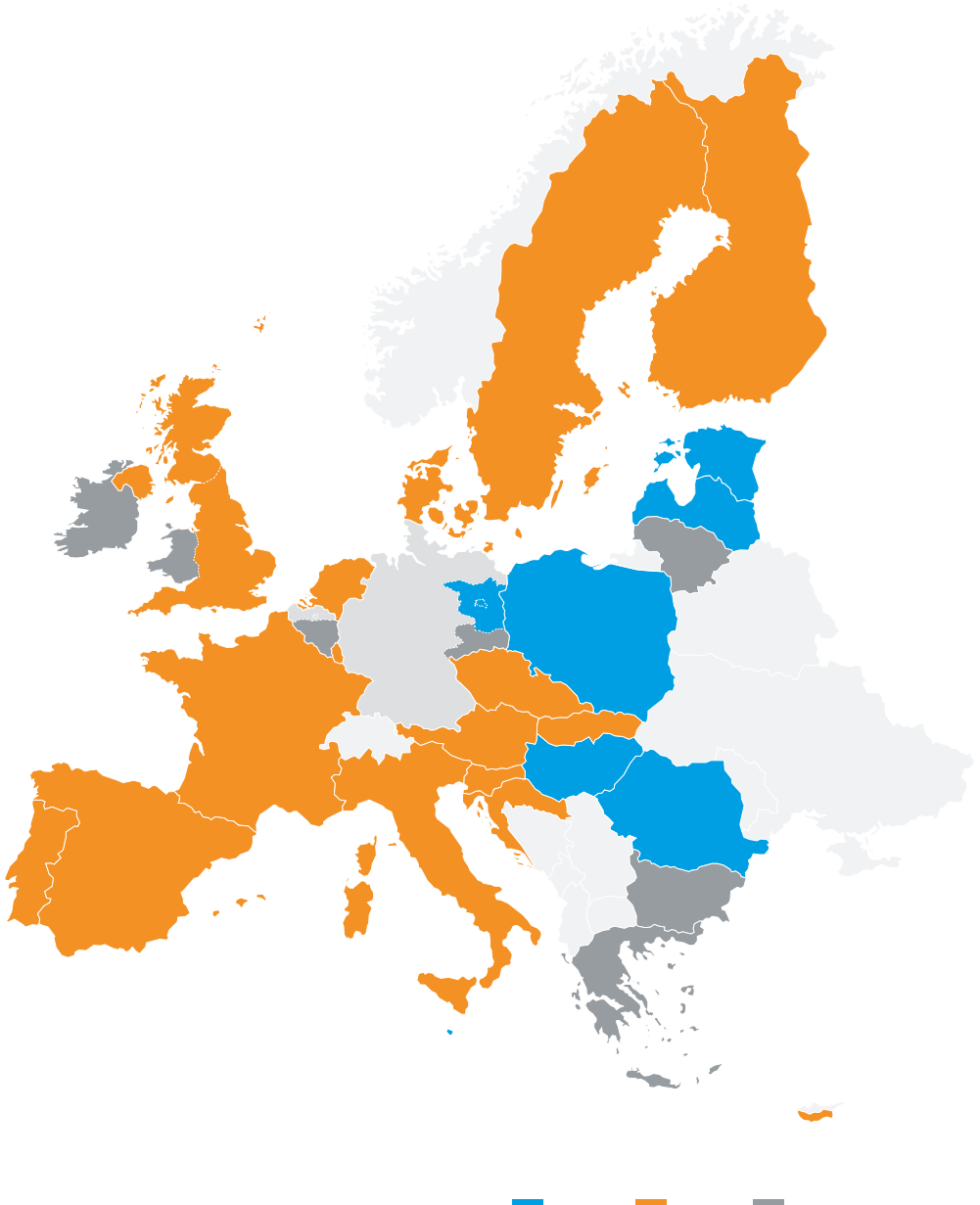
1. http://www.edb.gov.hk/en/curriculum-development/list-page.html
2. http://www.ipd.gov.hk/eng/home.htm

ANNEX 2

MINISTRY OF EDUCATION SURVEY – RESULTS

FIGURE 1

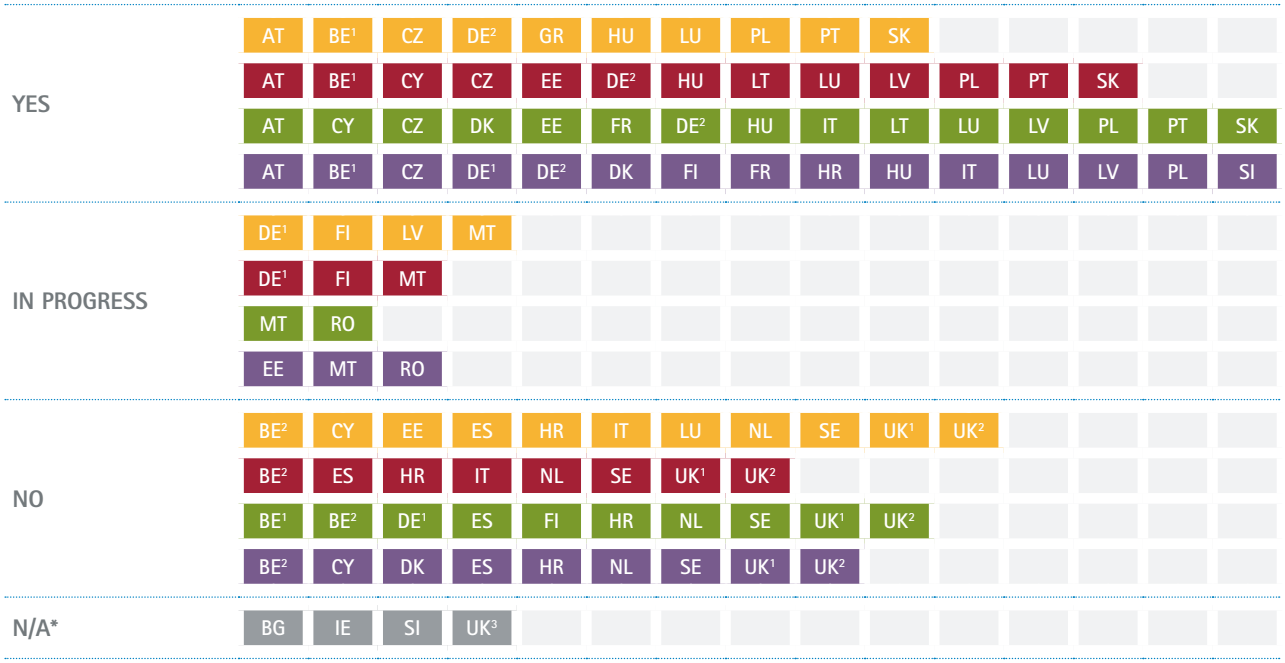
Is the education of Intellectual Property and Intellectual Property Rights considered a priority in your national education strategic plan(s)?



*N/A: Data was not made available for the countries not represented.

FIGURE 2

Is Intellectual Property education already included in the official national/regional curricula?



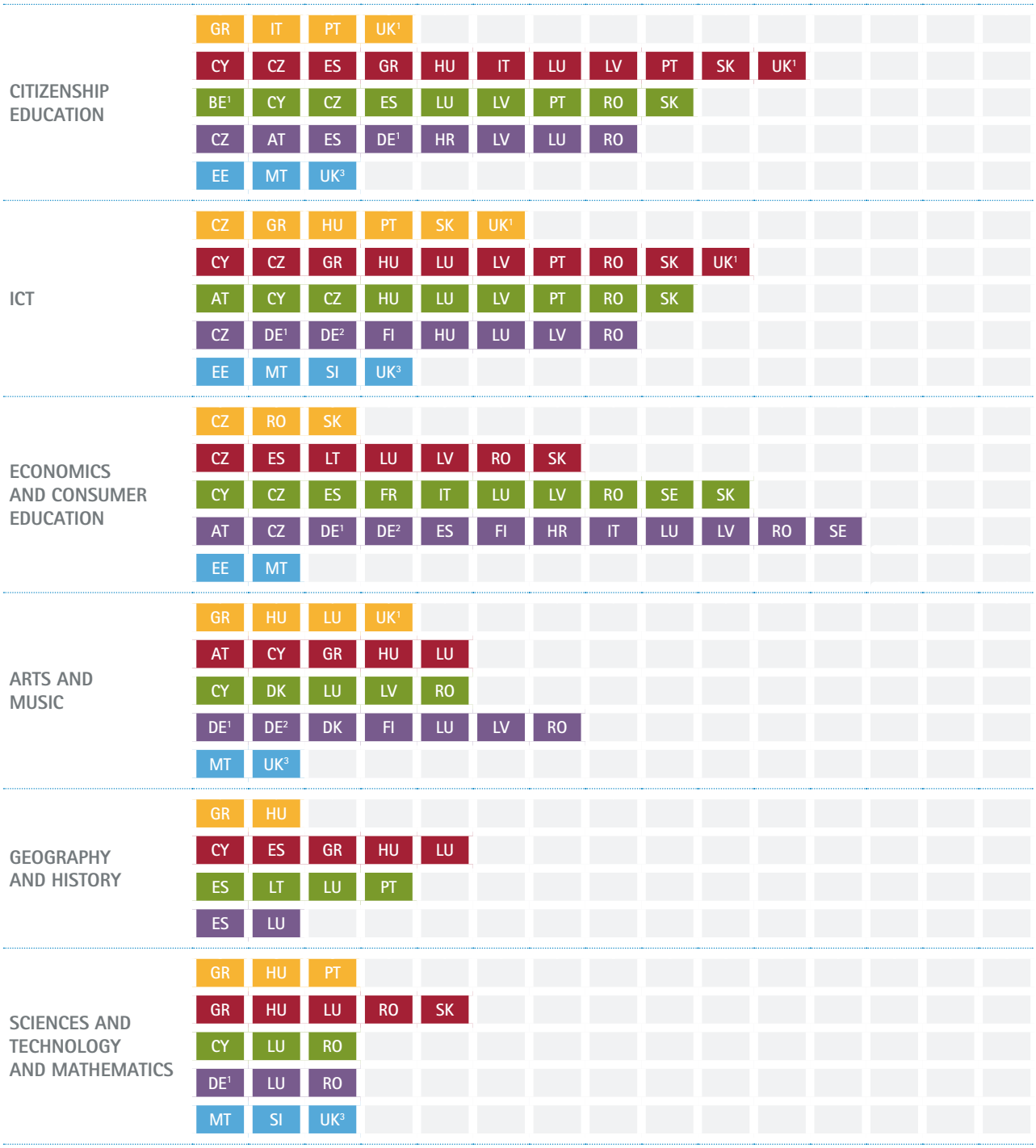
ISCED 1. Primary
ISCED 2. Lower secondary
ISCED 34. Upper secondary general
ISCED 35. Upper secondary vocational

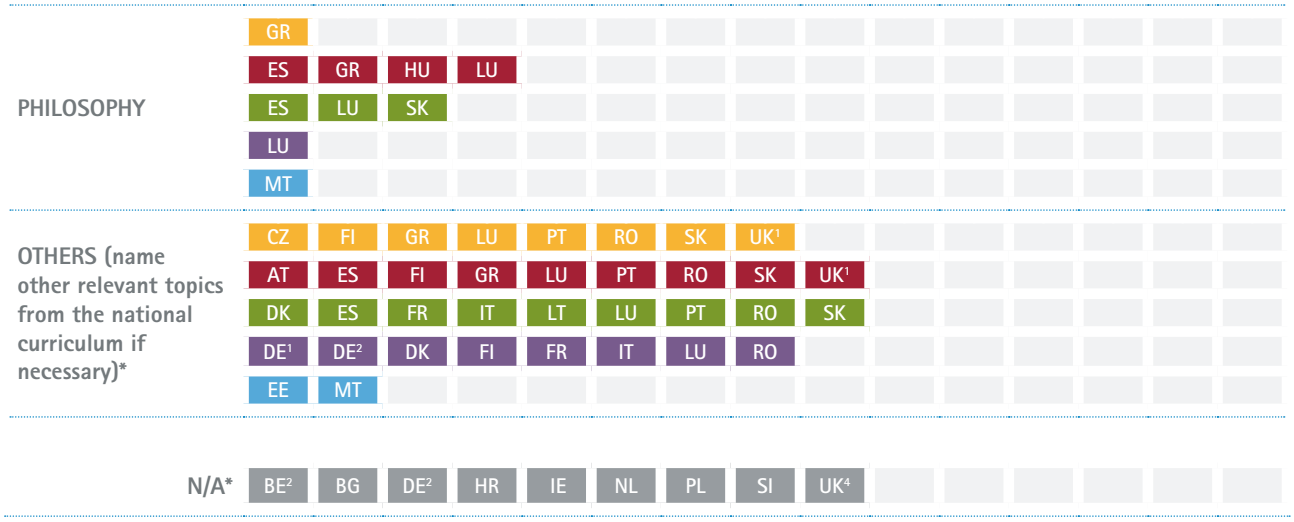
UK¹: Northern Ireland · UK²: Scotland · UK³: Wales · DE¹: Berlin · DE²: Sachsen · BE¹: Flemish · BE²: French

*N/A: Data was not made available for the countries not represented.

FIGURE 3

What are the most relevant subjects to include in IP education? Please specify which ones and in what grade (Tick the box and name other existing IP related subjects included in the national curriculum, if necessary).





UK[1]: Northern Ireland · UK[2]: Scotland · UK[3]: Wales · UK[4]: England · DE[1]: Berlin · DE[2]: Sachsen · BE[1]: Flemish · BE[2]: French

*N/A: Data was not made available for the countries not represented.

FIGURE 4

Response of the EU Ministry of Education to the question asked: Are the following IP related matters / topics approached in the national curriculum? Please specify which ones and in what grade (name other relevant topics from the national curriculum if necessary).

INNOVATION	CY	ES	GR	LU	PT	SK	UK[1]							
	CY	ES	GR	PT	SE	SK	UK[1]	UK[2]						
	CY	DK	ES	FR	LV	PT	SE	SK						
	CY	ES	DE[1]	DK	LV	NL	SE							
	HU	MT												
ENTREPRENEURSHIP	CY	CZ	ES	GR	LU	LV	PT	SE	UK[1]	HR				
	CY	CZ	ES	GR	HR	LT	LV	PT	SE	SK	UK[1]			
	CY	CZ	ES	HR	IT	LU	LV	PL	PT	SE	SK			
	CY	CZ	DE[1]	DK	ES	FR	HR	IT	LU	LV	NL	SE		
	HU	MT	UK[3]											
CITIZENSHIP	BE[1]	CY	CZ	DK	ES	GR	HR	LU	LV	PT	SE	UK[1]		
	BE[1]	CY	CZ	ES	GR	HR	LT	LU	LV	PT	SK	SE	UK[1]	UK[2]
	BE[1]	CY	CZ	DK	ES	FR	HR	IT	LT	LU	LV	PT	SE	SK
	BE[1]	CY	CZ	DK	ES	IT	LU	LV	SE					
CREATIVITY	BE[1]	CY	CZ	ES	FI	GR	LV	PT	SE	SK	UK[1]	UK[2]		
	BE[1]	CY	CZ	ES	FI	GR	LV	PT	SE	SK	UK[1]	UK[2]		
	BE[1]	CY	CZ	DK	ES	FR	LV	PT	SE	SK				
	BE[1]	CY	CZ	DE[1]	DK	ES	LV	SE						
	HU	MT	UK[3]											
OWNERSHIP	CZ	FI	GR	LV	PT	SK	UK[1]							
	CZ	FI	GR	LT	LV	SK								
	CZ	FR	IT	LT	LV	SK								
	CZ	CY	DE[1]	HR	IT	LV								
	HU	MT	SI											
PLAGIARISM	CZ	GR	PT	SK										
	CZ	GR	LU	PT	SK	UK[1]								
	CZ	LU	LV	SK										
	CZ	DE[1]	DK	LU	LV									
	HU	MT	SI											

NEW TECHNOLOGIES	CY	CZ	ES	FI	GR	HR	LU	PL	PT	SE	SK	UK[1]		
	CY	CZ	ES	FI	GR	HR	LU	LV	PL	PT	SE	SK	UK[1]	UK[2]
	CY	CZ	DK	ES	FR	HR	LU	LV	PL	PT	SE	SK		
	CY	CZ	DE[1]	DK	ES	FI	IT	PL	LU	LV	SE			
	HU	MT	UK[3]											
Others (name other relevant topics from the national curriculum if necessary) Using technology responsibly (part of computing curriculum)**	PL	SK	UK[2]											
	PL	SK	UK[2]											
	PL	SE	UK[2]											
	PL	SE												
	SI													
N/A*	AT	BE[2]	BG	DE[2]	IE	RO	SI	UK[4]						

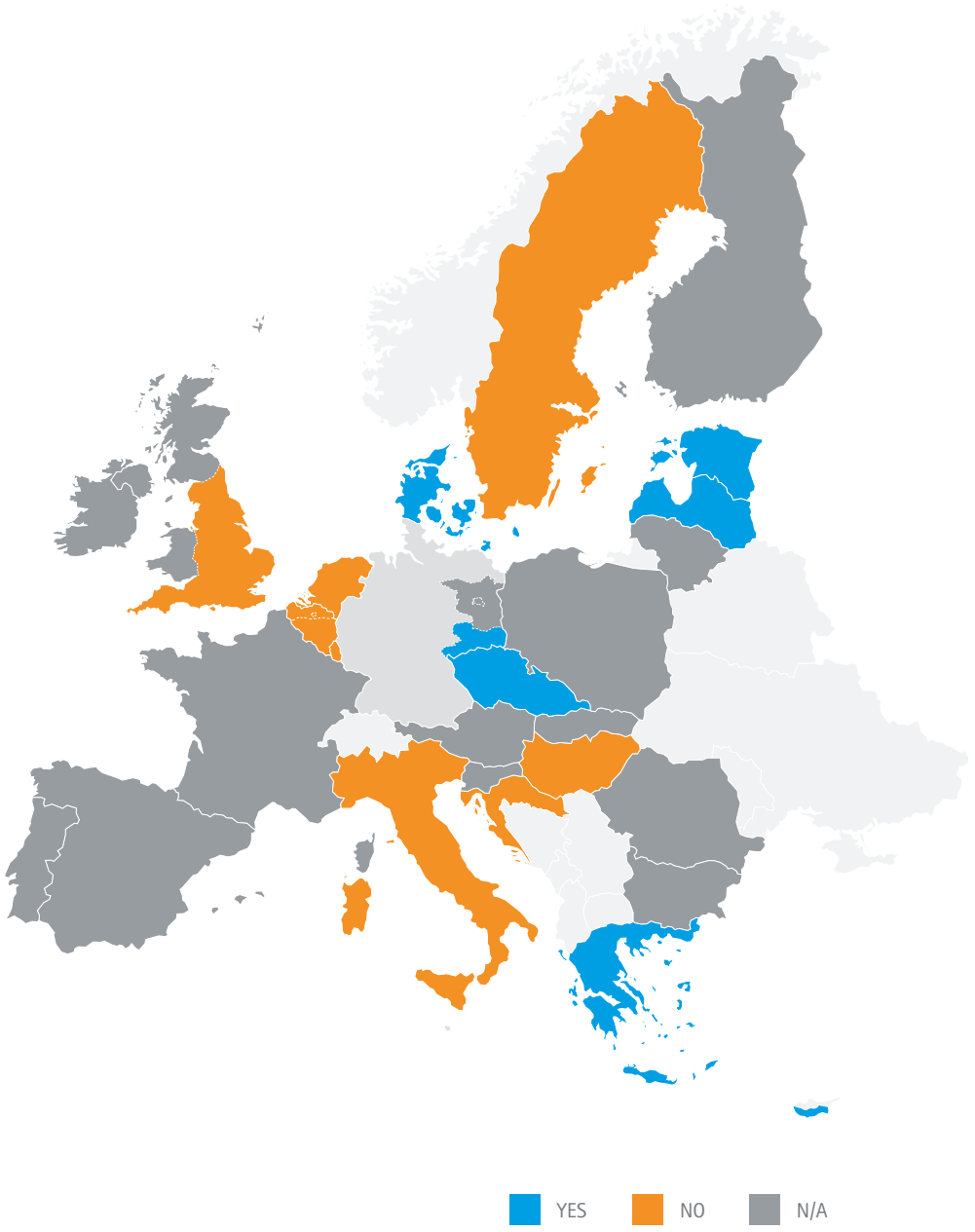
ISCED 1. Primary
ISCED 2. Lower secondary
Indicated without grade specification
ISCED 34. Upper secondary general
ISCED 35. Upper secondary vocational

UK[1]: Northern Ireland · UK[2]: Scotland · UK[3]: Wales · UK[4]: England · DE[1]: Berlin · DE[2]: Sachsen · BE[1]: Flemish · BE[2]: French

*N/A: Data was not made available for the countries not represented.

FIGURE 5

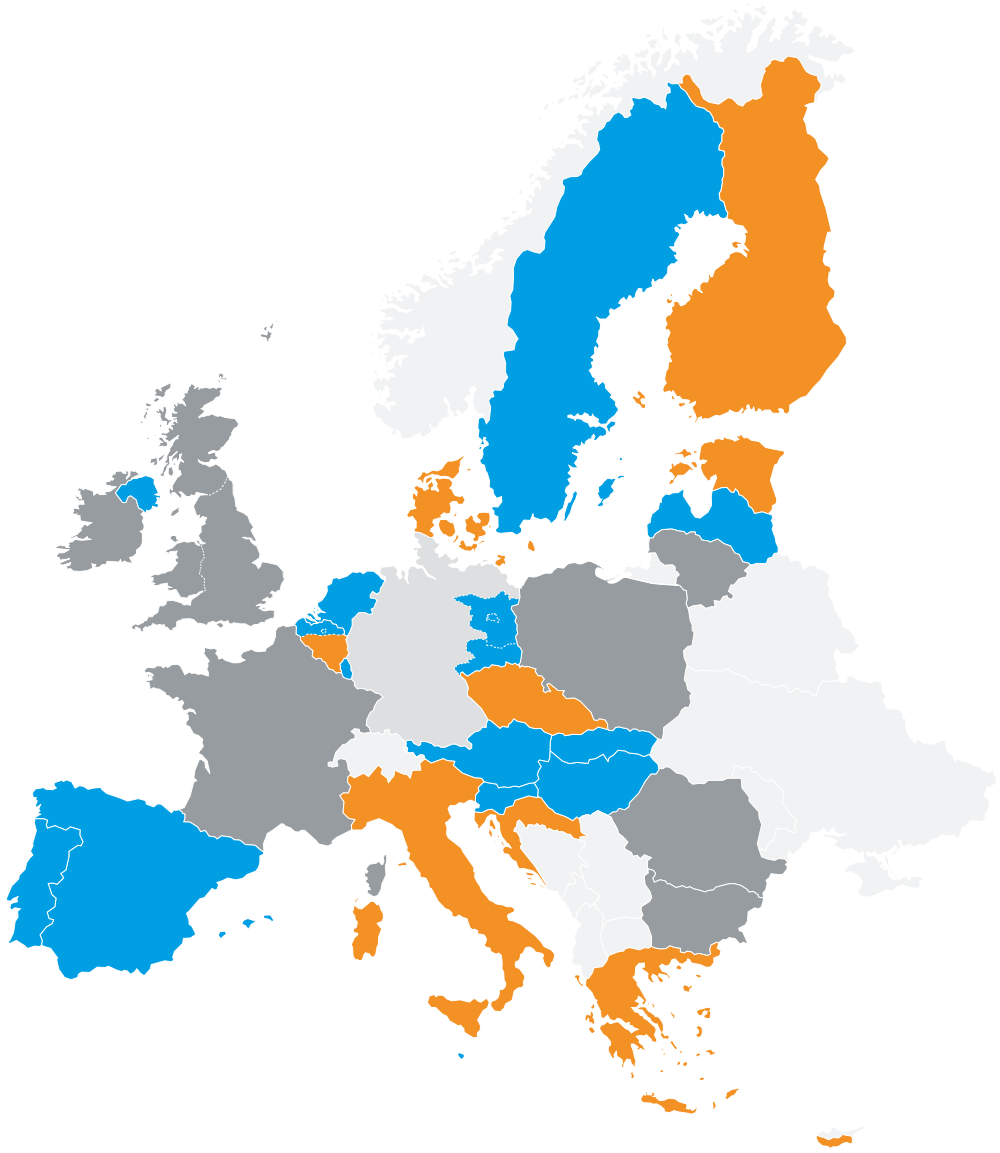
Please specify if IP implementation is addressed in teachers' initial or in service training.



*N/A: Data was not made available for the countries not represented.

FIGURE 6

Are there national/ regional/ local strategies aimed at encouraging the integration of IP education in schools?



*N/A: Data was not made available for the countries not represented.

ANNEX 3
EXPERT GROUP BIOGRAPHIES

Ruth Soetendorp is Professor Emerita and Associate Director of the Centre for Intellectual Property Policy and Management at Bournemouth University (UK) and a Visiting Academic at CASS Business School, City University. She is Chair of the Intellectual Property Awareness Network and founding chair of its education sub-group. Current research, with the UK National Union of Students, focuses on university IP policies – perception and practice. Recent research and writing includes the development of resources for the inclusion of intellectual property in the non-law curriculum. Her consultancy activities focus on customised training for management of IPR in times of change. International IP education clients include the World Intellectual Property Organisation; Indian educational institutes in Bangalore, Mumbai, and Pune; Global Women Innovators & Inventors Network, Johannesburg S.A. EU-funded projects in Beijing, Shanghai, and Bulgaria; and European Patent Office projects: RIPP, Roving workshops and the IP4Inno programme. She is a member of the Chartered Institute of Patent Attorneys Education Committee, and the European Intellectual Property Teachers Network.

Renata Kosinska is an expert in the field of educational sciences. She has worked for 15 years as a research analyst at the Eurydice European Unit in Brussels, and as a programme coordinator at the International Centre for Educational Studies in France. She is co-author of various comparative studies related to public educational policies in Europe.

Anne Bamford is currently Professor at the University of the Arts London and Director of the International Research Agency. Anne has been recognised nationally and internationally for her research in arts, education, emerging literacies and visual communication. She is an expert in the international dimension of education and through her research, she has pursued issues of innovation, social impact and equity and diversity. A World Scholar for UNESCO, Anne has conducted major national educational impact and evaluation studies for the governments of Denmark, The Netherlands, Belgium, Iceland, Hong Kong, and Norway. Amongst her numerous articles and book chapters, Anne is author of the "Wow Factor: Global research compendium on the impact of the arts in education", which has been published in five languages and distributed in more than 40 countries. Anne has won a number of educational awards including for Best Educational Research, the National Teaching Award and was a runner-up in the British Female Innovator of the Year Award. Professor Bamford is a Freeman of the Guild of Educators and a Fellow of the Royal Society for Arts.

Dana T. Redford is the Founder and President of the Portugal Entrepreneurship Education Platform (PEEP) and Professor of Entrepreneurship and Innovation at the Universidade Católica Portuguesa, Porto. In 2014, his latest book, "The Entrepreneurial University Handbook", was released by Edward Elgar Publishing. Professor Redford is an internationally recognized expert on entrepreneurship and public policy. He founded and managed four start-ups in three different continents. He has worked with the U.S. Department of Commerce, European Commission, OECD, the UN and various European governments. Professor Redford did his Post-Doc research at UC-Berkeley and was Faculty Coordinator and Guest Lecturer at the Centre for Executive Education. He holds a BA (Hons.) in Political Science from University of Colorado at Boulder and a PhD in Management from ISCTE-Lisbon.

Stephen Haggard consults independently on digital business and strategy for education publishers, universities, Governments, and commercial learning platforms. Projects underway at the moment are for UNESCO, EU, Open University, British Council, Desire 2 Learn and a major rights holder. Stephen has been involved in a range of international education deals involving export of digital learning products to China, Middle East, and sub-Saharan Africa. He writes on education for Times Higher Education Supplement, FT, Think Africa Press, Global Insight, and Distance Education in China.

OFFICE FOR HARMONIZATION
IN THE INTERNAL MARKET
(TRADE MARKS AND DESIGNS)

INTELLECTUAL PROPERTY AND EDUCATION IN EUROPE

STUDY ON IP EDUCATION IN SCHOOL CURRICULA IN THE EU MEMBER STATES WITH ADDITIONAL INTERNATIONAL COMPARISONS

GLOSSARY

GLOSSARY

AGATA
Lithuanian Neighbouring Rights Association

CCE
Character and Citizenship Education

DKPTO
Danish Patent and Trademark Office

EDK
Swiss Conference of Cantonal Ministers of Education

EEA
European Economic Area

EPO
European Patent Office

EU
European Union

FFE-YE
Foundation for Entrepreneurship – Young Enterprise

GCSE
General Certificate of Secondary Education

GDP
Gross domestic product

ICT
Information and communications technology

IP
Intellectual Property

IST
Information society technology

IT
Information technology

MS
Member States

NGO
Non-governmental organisation

OHIM
European Union's Office for Harmonization in the Internal Market

PhD
Doctor of Philosophy

PSHE
Personal, social and humanities education

STEM
Science, Technology, Engineering and Maths

UNESCO
United Nations Educational, Scientific and Cultural Organisation

VET
Vocational Education and Training

WIPO
World Intellectual Property Organisation

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