NCCA
An Chomhairle Náisiúnta Curaclaim agus Measúnachta
National Council for Curriculum and Assessment

Report on the early enactment of Junior Cycle Coding and Digital Media Literacy short courses

June 2024

Contents

1. Introduction

The 2015 Framework for Junior Cycle aims to support the provision of quality, inclusive and relevant education which meets the needs of junior cycle students, now and in the future (Department of Education and Skills, 2015). A key aspect of the Framework is that it provides flexibility for schools to design programmes that are suited to their particular contexts and the needs of their students. Programme design is guided by eight underpinning principles, twenty-four statements of learning and the eight key skills of junior cycle. Schools decide on the combination of subjects, short courses, and priority learning units (PLUs) offered to students.

The main purpose of short courses is to allow schools greater autonomy in the delivery of their junior cycle programme. The inclusion of short courses in a junior cycle programme enables schools to broaden the learning experiences for students, respond to student interests and provide access to areas of learning not covered by the combination of curricular subjects available in the school. The Framework for Junior Cycle notes that short course provision will vary from school to school and will be influenced by factors such as the design and content of the school's junior cycle programme and timetable, the resources available, students' needs and interests, teacher availability, experience and expertise, and the views of parents/guardians (DES, 2015).

The National Council for Curriculum and Assessment (NCCA) has developed a number of short courses that are broadly aligned with Level 3 of the National Framework of Qualifications. These include:

- Coding
- Digital Media Literacy
- Chinese Language and Culture
- Artistic Performance
- Philosophy.

Three further short courses form part of the 400 hours of Wellbeing education:

- CSPE (Civic, Social and Political Education)
- PE (Physical Education)
- SPHE (Social, Personal and Health Education).

Each short course is designed for 100 hours of student engagement over the three years of junior cycle, with the exception of PE, which requires 135 hours. Short courses are assessed formatively and through a Classroom-Based Assessment (CBA) and reported upon to students and parents/guardians by the school. There is no final examination but the descriptor for the short course CBA is reported on the Junior Cycle Profile of Achievement (JCPA).

A total of seven additional short courses for Level 1 and Level 2 Learning Programmes have also been developed. Specifications for all short courses are available at https://www.curriculumonline.ie/Junior-Cycle/Short-Courses/. Schools may also design their own short course or access short courses designed by other schools or organisations and have the flexibility to adapt any NCCA short course to suit their particular needs and school context.

This report presents an overview of the review of two of these short courses: Coding and Digital Media Literacy, followed by a summary of the findings. The report concludes with key insights and proposed responses for each short course based on the findings from the review, and presents a summary of insights gained to support the continued implementation of the Framework for Junior Cycle 2015.

2. Background Information

This section provides a brief overview of the curriculum specification for each of the short courses and the assessment arrangements set out in the Assessment Guidelines for each course reviewed. These are important to provide context for consideration of the review findings.

2.1 Coding

The Coding short course was published in 2016 and reflected both the growth in technology industries and the need for computer-based skills to be further developed in Ireland, which, at the time had become, and still remains, the European hub of many international digital companies. It also recognised the calls for a course suited to the needs and interests of a growing body of students who had been attending local coding clubs in their areas.

The aim of the Coding short course is 'to develop the student's ability to formulate problems logically; to design, write and test code through the development of programs, apps, games, animations or websites; and, through their chosen learning activities, to learn about computer science' (Department of Education and Skills, 2016a, p.5). The learning within the short course is set out across 25 learning outcomes organised into three strands as depicted in the graphic below.

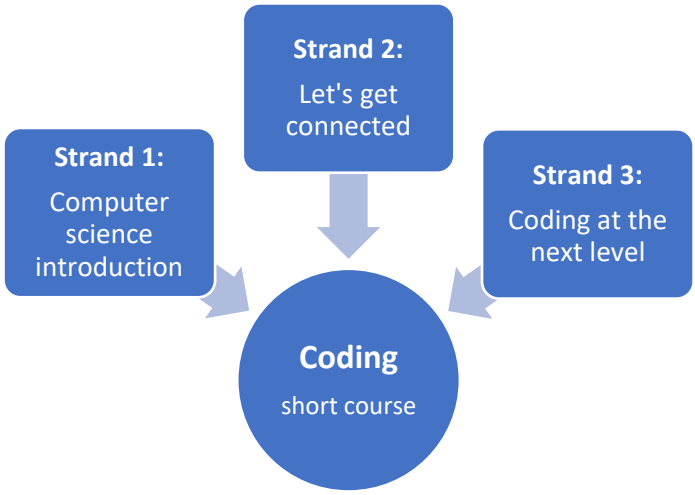

Figure 1: The three strands of the Coding short course

With the exception of PE, all junior cycle short courses have one Classroom-Based Assessment (CBA). In Coding, students complete a final project for their CBA called *Putting the Pieces Together*. This project is the culmination of the work undertaken in the three strands of the course. Students develop a final software project of their choice, in teams of two or three, where they research and establish requirements then design, implement, test and present their software.

Student enrolment statistics from the Department of Education Post Primary Online Database (PPOD) indicate that 116 schools offered the short course as part of their junior cycle curriculum in 2021-2022.

2.2 Digital Media Literacy

The Digital Media Literacy short course was published in 2016 and was developed in response to the growing use of digital media by young people. It was intended to offer students 'opportunities to explore and discover the information and knowledge accessible online, enabling them to pursue their interests, to express themselves online and solve problems relevant to their lives' (Department of Education and Skills, 2016b, p.4).

The aim of the Digital Media Literacy (DML) short course is 'to extend and refine students' ability to use digital technology, communication tools, and the internet creatively, critically and safely, in support of their development, learning and capacity to participate effectively in social and community life' (Department of Education and Skills 2016b, p.5). The learning within the short course is set out across 28 learning outcomes organised into four strands as depicted in the graphic below.

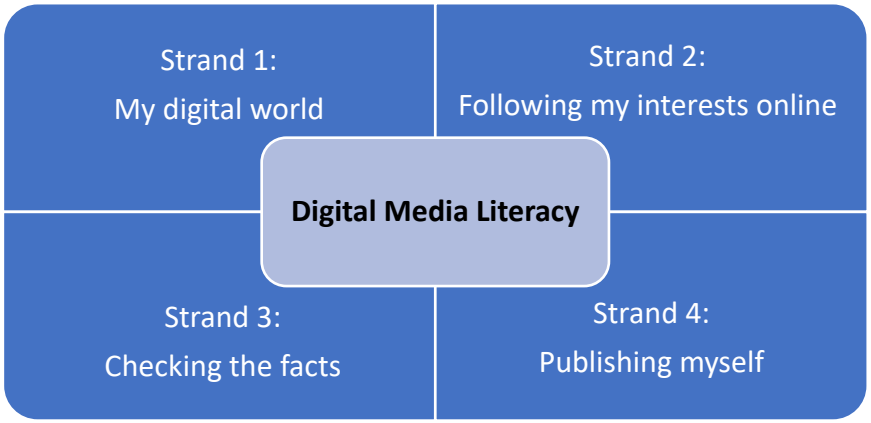

Figure 2: The four strands of the Digital Media Literacy short course

With the exception of PE, all junior cycle short courses have one Classroom-Based Assessment (CBA). In DML students complete a final project on a topic of their choice for their CBA. The project is published in digital format and should demonstrate engagement with the areas of learning set out in the four strands of the specification.

Student enrolment statistics from the Department of Education Post Primary Online Database (PPOD) indicate that 119 schools offered the short course as part of their junior cycle curriculum in 2021-2022.

3. Review Process

The review comprised the following three modes of engagement during April and May 2023:

- An online survey issued to teachers in post-primary schools where these short courses were offered in the school year 2021-2022
- Written submissions from stakeholders/interested bodies
- School visits to capture the perspectives and experiences of students (both those currently completing, and those who had completed, the short course), teachers, and school leadership.

All modes of engagement were framed around a set of guiding themes which focused on the aim of the specification, the relevance of the learning set out in the specification, planning for teaching and learning, and assessment and reporting including the CBA and Assessment Guidelines.

3.1 Methodological approach

School visits

The schools selected for the visits were chosen from those schools where Coding and/or Digital Media Literacy were offered in the school year 2021-2022. This list of schools was based on data from the Post Primary Online Database (PPOD). An open call via email to participate in the review was issued to these schools and a representative sample of schools was selected from those which registered their interest. The visit to each school included two focus groups involving students (currently studying or who had studied the short course) and the short course teacher(s). Where possible, a short interview took place with a member/members of the senior leadership team.

Written submissions

Written submissions were invited through an open call on www.ncca.ie with a template provided to support the development of the submission (Appendix A). Social media was also used to promote this open call. Written submissions were received from a number of stakeholders and interest groups and a list of organisations who made submissions and who gave permission to be named in the report is provided in Appendix A.

Teacher survey

A self-selecting approach was used for the teacher survey which was shared via email with schools where the short courses were offered in the school year 2021-2022.

Data analysis

Data gathered through the school visits was anonymised and transcribed, and all data from the consultation was stored as digital files in line with the NCCA's Data Protection Policy. The privacy of all participants has been maintained through anonymisation, except where an organisation has given explicit permission to be identified as contributing to the consultation. Parental consent and student assent was sought from students participating in the focus groups.

A thematic approach was used for analysis of the information gathered, framed by a set of guiding questions used throughout the consultation. The findings of this analysis are presented in the next

section of this report with the relevant statistical data regarding participation in each short course review.

4. Review Feedback

This section presents an overview of the experience of the two short course specifications, based on the analysis of the feedback from the consultation. All modes of engagement of the consultation were shaped around similar guiding themes which informed the analysis of the feedback. The analysis is presented under the following headings:

- Aim of the short course
- Relevance of the student learning set out across the strands
- Using the learning outcomes to plan for teaching, learning and assessment
- The Classroom-Based Assessment and Assessment Guidelines
- Feedback from schools regarding the introduction of the short course.

An overview of participation across the three modes of consultation employed in the review is provided for each short course in the individual sections below.

4.1 Coding

Short course review: overview of participation

A representative sample of six schools was selected from the schools that expressed an interest in participating in the school-based aspect of the review. This sample included a mix of small, medium, and large schools, DEIS, single- and mixed-sex schools from across the range of management bodies. Three of these schools offered both the Coding and Digital Media Literacy short courses and three offered only Coding as a short course. A total of 11 teachers, 8 school leaders and 64 students participated in the school-based review.

Two written submissions were received following the open call for submissions and 11 teachers responded to the online survey.

Aim of the short course

The aim of the Junior Cycle Coding short course is 'to develop the student's ability to formulate problems logically; to design, write and test code through the development of programs, apps, games, animations or websites; and, through their chosen learning activities, to learn about computer science' (DES, 2016a, p.5). The majority of responding teachers across all modes of engagement and participants who made written submissions agreed that the specification achieved this aim.

> *Throughout the 3 years of the course students are constantly presented with situations or problem which they must solve. [Students] are required to solve it, formulate solutions, write, and test their code and finally present their completed solution.* (Online survey)

Teachers participating in the consultation highlighted the practical nature of the short course as particularly successful in achieving the course's aims while students felt the specification really

came to life for them when they were actively involved in aspects of coding, such as using Scratch to design a game or HTML and CSS to build a website.

However, while most agreed that the aim of the short course was being realised, the teachers would have liked to see more of an explicit emphasis on computational thinking:

> *Although CT is mentioned in the Coding specification, it is given as an example of relevant learning, whereas it would be more relevant if CT were embedded specifically in terms of a statement of learning and a learning outcome. This would support future studies in the area, given that CT is central to the key skills and learning outcomes of the Senior Cycle specification for Computer Science and that it is a fundamental methodology for problem solving in programming.* (Written submission)

Some feedback received from both teachers and students spoke to the transition from the block-based Scratch program to a text-based language such as Python or Javascript. This tended to be more of a need in schools where some students had already experienced Scratch for several years of their primary school education and/or where Leaving Certificate Computer Science was offered. This is explored further in the section below. It was also noted that a more explicit focus in the learning outcomes on areas such as ethics, software, hardware, privacy, data handling, some digital literacy is required.

Relevance of the learning for students set out across the strands

Both students and teachers stated that they saw the relevance of the learning across the strands of the Coding specification. Teachers noted that coding skills were very important for students and the students broadly concurred. Some teachers valued spending time on coding 'un-plugged' activities (work which can be undertaken without the need of a computer or device, but which builds students' understanding of how a computer program works) as they felt this helped to build the students' understanding. However, the majority of students found this too theoretical and preferred more active 'hands on' computer-based work.

The review found that students taking the short course have a diverse range of experience and prior learning which can lead to challenges in ensuring that the learning is relevant for all students. This was reflected in the diversity of opinions on whether the programming language(s) should be prescribed in the specification, or whether schools should have complete autonomy to choose the language most suited to their students. Some teachers highlighted the challenge of text-based coding, as students can find it hard to grasp and break it down, thereby requiring more class time to develop knowledge and understanding. However, a significant number of students expressed frustration with what they saw as too much of a focus on Scratch, noting that the programme can become very repetitive, especially for those who have been using it in primary school. Some students and teachers felt that it would be more relevant to place a stronger focus on languages such as Python, and that this would be more challenging and ultimately more enjoyable for students.

A number of the schools visited as part of the review were also offering Computer Science as a subject option at Leaving Certificate. In the case of these schools, the short course took on a particular relevance with some teachers drawing on the Applied Learning Tasks (ALTs) in LC

Computer Science to enhance the relevance of learning for students. It was considered that this led to a more practical-based approach to learning, where students applied problem solving and design exercises often with a focus on team-based tasks. Students in general felt that working in teams was both enjoyable and relevant.

> *When making the robots we worked in groups – we had different roles in the group – for example one person was checking the code while the others were doing other aspects. Everyone brought their own strengths to the group and there was a lot of creativity as well because people were working together.* (Student focus group)

Schools offering Computer Science at senior cycle highlighted a particular relevance in using the short course as a 'taster' and as a means of helping students to understand what would be required of them should they choose Computer Science for Leaving Certificate.

Both teachers and students highlighted the links between Coding and other subject areas. Students reflected that Coding enhanced understanding in Mathematics, especially in relation to logic-type questions, and also noted that IT skills developed were useful when they had to present or produce a lot of information, such as in English or preparing for CBAs. Some students highlighted relevant learning related to social media and websites and digital literacy more generally.

Students also highlighted the relevance of the process of coding, as it helps to understand that 'trial and error' when trying something and figuring it out, is an important part of the learning process. This was also echoed by many teachers who highlighted the importance of students learning from mistakes as a key transferable skill.

Using the learning outcomes to plan for teaching, learning and assessment

Teachers participating in the review acknowledged the importance of the learning outcomes set out in the specification as a basis for planning for engaging lessons and projects. Some teachers felt that the learning outcomes offered welcome autonomy and opportunities to extend learning, such as including aspects of digital media literacy, while others felt that the nature of the learning outcomes allowed them to plan teaching and learning that was suitably challenging based on the experience and prior learning of the students in their class.

> *Unplugged activities can be done – they do cryptography – started with a Caesar cypher, this builds the basis for end-to-end encryption – not technically coding, things like their digital footprint, these are things the kids need to know.*
> (Teacher focus group)

The learning set out in Strand One (Computer Science Introduction) is intended to provide an introduction and basic understanding for all students regardless of their prior learning and experience. In some cases, teachers and students found this useful in building a foundation for future skill development. However, in other cases, it was felt that this can become repetitive where there is too much of a focus on 'unplugged' activities and students in particular were keen to move on to more challenging device-based activities. The teachers were aware of this and did try to maintain momentum in their students' learning, but this could be difficult in a class with diverse prior experiences of coding. A number of teachers highlighted the potential of group work when

working with the learning outcomes in Strand One, to promote peer-to-peer learning and to support the range of abilities in a class group.

Strand Two (Let's Get Connected) was seen as particularly valuable for immersing students in both HTML and CSS. In this strand students engage in website development while developing an understanding of how the internet works. Teachers highlighted the need to dedicate significant time to the learning outcomes in this strand, again reflecting how student experience and competence can impact on the amount of class time required to develop the knowledge, skills, understanding, and values set out in the learning outcomes. This strand also includes an opportunity for students to explore an aspect of computer science of particular interest to them and teachers felt that this provided a welcome basis for project work. The focus on the development of transferable skills, such as engagement with peers and conducting research, was welcomed by both teachers and students.

The learning outcomes set out in Strand Three (Coding at the Next Level) were seen as the most challenging to work with by teachers taking part in the review. It is important to note that teachers taking part in the review came from a range of different backgrounds with some having formal computer science qualifications, some having completed post-graduate or online qualifications and some for whom coding was a particular area of interest. Some teachers felt that the language used in some of the learning outcomes in Strand Three was challenging from a technical perspective and, for some teachers, aspects such as operators, arrays, lists, functions, parallel and sequential flow of control were seen as difficult aspects of the short course, particularly for students with no prior coding experience. It was noted that it can take significant time to develop this knowledge and understanding amongst students. A significant number of teachers suggested that further training and relevant resources would be useful in this respect while the use of group work and peer-to-peer learning was again highlighted as a useful approach, in mixed ability class groups in particular.

The Classroom-Based Assessment and Assessment Guidelines

The Classroom-Based Assessment (CBA) in Coding is called *Putting the pieces together*. The culmination of the learning in the three strands of the short course, students work in teams of two or three. The students research, design, implement and test their software, all the while documenting their work. This is then presented to their peers and teacher for review. The Assessment Guidelines recommend approximately 8-10 hours of class time for the CBA (NCCA, 2016, p.5).

Both students and teachers, in general, thought the compulsory groupwork in the Classroom-Based Assessment (CBA) in Coding was a positive aspect. Some teachers reflected that not all students enjoy this approach, but noted that those who found the short course more challenging benefited from engagement with their peers while other students liked the opportunity to share out the work.

> *Group work – working with people in the CBA. It's better working with people as it lessens the workload as a student. You can spread it out and divide the work.*
> (Student focus group)

The CBA is designed to be student-centred, in that it is the students who define the problem they wish to try to overcome with their programming solution. However, it is the teacher who plans

when and how the CBA will take place, which was seen as requiring significant consideration when planning for teaching and learning, as it involves many elements. Approaches to the choice of topic appeared to vary between schools visited as part of the review, with some teachers providing options students could choose from for their CBA, such as a Scratch-based game/animation or website build, while other teachers facilitated students in moving towards more technical coding languages, such as Python. The feedback from the review suggests that this is linked to a range of factors, including a diverse range of student abilities and interests and the teacher's level of coding experience and confidence. Some teachers participating in the review suggested that, as with other subjects, a brief or list of topics could be given by NCCA each year for the CBA. This would give a focus to the CBA, but could also limit how far students could go. However, others felt that this could be perceived as not reflecting the student-centred focus of the Classroom-Based Assessment where student choice and voice are key tenets of this approach to assessment.

> *The CBA is a really good way for the students to get creative, put a project of significance (that they can be proud of) together, and work together in teams.*
> (Teacher focus group)

In terms of the format of the CBA, it was suggested during the review that a portfolio-based approach to assessment could support students with the incremental development of skills and could also motivate students with less coding experience, as they would see their progress while students with more experience could engage in more challenging activities.

The Assessment Guidelines were seen as clear and succinct. Some teachers expressed some concerns about the nature of the Features of Quality, seeing them as somewhat vague, and suggested that it would be more helpful to have clarity on whether all elements or one element is required where referenced in the different descriptors. Some teachers also reported a difficulty in judging the standard of the submitted work, with differentiating between Above Expectations and Exceptional, which was seen as particularly challenging. Some teachers also saw the expectations within the Exceptional descriptor as being somewhat unrealistic, noting that it is nearly impossible for a talented, diligent, and hard-working student to achieve the highest award.

Rapidly evolving technological solutions and the use of Artificial Intelligence did cause some concern amongst teachers about who might be generating the code. However, it was also suggested that this could be resolved through placing a focus on presenting the completed CBA and allowing for questions to ascertain the student's engagement with the code developed.

Teachers felt that further supports would also be useful to support the CBA, including curated website sources and resources and examples of student work.

Feedback from schools regarding the introduction of the short course

Ten of the eleven responses in the online survey were from schools that had the Coding short course running from four to nine years. In the school-based focus groups, most of these schools had also been offering the short course for quite a few years. The decision to offer Coding in a school ranged from increasing the school profile locally to supporting students' interests and skills which were not catered for elsewhere within the curriculum. Some principals interviewed also had an interest in technology and saw not just the benefits of introducing it but also its importance globally as an area of learning. The Coding short course was also introduced by some schools because it was

seen to feed naturally into the school's Leaving Certificate Computer Science course and students would therefore be more informed when making choices later, or because the school wanted to introduce Computer Science as a Leaving Certificate subject and the short course would help by creating a body of interested and knowledgeable students.

The introduction of Coding was also seen, by some school leaders, as bringing a more structured approach to the use of IT in the school. However, school leaders also highlighted the difficulty of purchasing and maintaining equipment, from computers to resources such as Microbits. Advanced planning was seen as particularly important when introducing any technological-based subject within a school. School leaders also highlighted the need to upskill the teachers, or at the very least, support them in gaining the relevant qualifications.

In terms of timetabling, school leaders noted that there were increasing curriculum demands which led to having to revise timetable allocations for Coding. Approaches to timetabling varied depending on whether the short course was offered as a standalone option or as a block of two short courses (usually a combination of Coding and DML).

4.2 Digital Media Literacy

Short course review: overview of participation

A representative sample of six schools was selected from the schools that expressed an interest in participating in the school-based aspect of the review. This sample included a mix of small, medium, and large schools, DEIS, single and mixed-sex schools from across the range of management bodies. Three of these schools offered both the Digital Media Literacy (DML) and Coding short courses and three offered only DML as a short course. A total of 16 teachers, 7 school leaders and 64 students participated in the school-based review. Five written submissions were received following the open call for submissions and nine teachers responded to the online survey.

Aim of the short course

There was general consensus amongst those participating in the consultation that the aim of the short course, as set out in the short course specification, is being realised and that the learning is valuable and relevant for young people with many participants believing that all students should have an opportunity to develop as digital citizens. All participants in the consultation felt it was an important area of learning with students having an opportunity to develop knowledge and skills that are not a primary focus in other subjects.

> *Students are growing up in an increasingly interconnected and constantly evolving digital world. The course specification […] is relevant and important for this emerging and dynamic literacy. It also scaffolds learning for the majority of senior cycle specifications and syllabi.* (Written submission)

The importance of balancing the positive and negative aspects of the digital world was noted, as it was felt that there can be a tendency to emphasise the risks associated with being a digital citizen and to somewhat neglect the potential advantages. Feedback from the consultation also highlighted the need for a greater focus on critical knowledge and greater development of critical thinking skills.

Relevance of the learning for students set out across the strands

Teachers participating in the consultation reflected on how students are motivated by the areas of learning that they see as most relevant to their lives. Students participating in the consultation also echoed this feedback but, in some cases, felt that they would like an opportunity to engage more deeply in particular topics such as Artificial Intelligence (AI) and emerging technologies, and to have an opportunity to think critically about different aspects of digital media and their own online engagement.

> *Everyone should know about basic internet safety. Some of it is a bit outdated. AI, copyright laws, trademark laws – we need to know how all that works and how it affects us and also how to use the internet positively*. (Student focus group)

The greatest challenge identified during the review was the need to help students to develop the required skills for the ever-changing digital world where, for example, students are aware of the use of AI in the modern world and the ethical questions it poses:

> *The elements of the course become dated pretty quickly. Six years ago, AI was not even being discussed in the mainstream media. Now it is becoming one of the biggest discussion points.* (Teacher focus group)

> *We know AI exists, some of us use it every day and it is easy to use. But harder to know why and when it is OK to use it and maybe even how it actually works.* (Student focus group)

Learning outcomes related to online safety were regularly discussed during the review with students feeling that they would like to move beyond learning about the importance of staying safe online, and to have an opportunity to focus on the consequences of not being a good digital citizen. This is particularly relevant in light of recent developments in legislation such as offences related to image-sharing. The work of the Council of Europe Digital Citizenship Education Expert Group was suggested as a useful touchstone in terms of learning outcomes related to the safe and responsible use of technology.

Participants in the review also highlighted the need to ensure that there is a balanced approach and that recognising the benefits of digital technology should underpin all strands. It was also suggested that junior cycle students should have enhanced opportunities to engage in online safety lessons in primary school and that this should be considered in any revision of learning outcomes related to online safety.

> *Safety was a big thing, especially in 2nd year. I remember that being repeated a lot. Almost every week, we had a new document we had to read about protecting your image online.* (Student focus group)

The learning outcomes across the four strands were discussed in detail. The dynamic nature of digital media and the online environment means that it is challenging to prescribe student learning in significant detail as new technologies are emerging all the time. However, an enhanced focus on critical thinking skills was suggested as this could support students in developing a deeper

understanding of digital media which would be applicable to all digital developments, both current and emerging.

> *Reviewing learning outcomes to consider areas such as the role of AI in students' life (positives and challenges), understanding how algorithms work, the design of digital technologies and media, their ability to influence content online, targeting content, the risks, and opportunities they present. Developing a student's critical thinking skills is a core element of understanding digital technologies.* (Written submission)

The following provides an overview of the feedback from review participants on each of the four strands highlighting possible areas for further consideration.

Using the learning outcomes to plan for teaching, learning and assessment

The learning outcomes in Strand One (My Digital World) were viewed as a good starting point for students taking the DML short course, placing a focus on students as active participants in the digital world and guiding teachers in planning for teaching and learning. It was suggested that the learning in this strand could be made more relevant for students by also considering the range of content and types of media that students may access online; extending the learning to include image and video-sharing to reflect recent legislation in this area; including a greater focus on understanding rights and responsibilities and enhancing and expanding learning regarding online safety to include aspects such as privacy, data leaks and data security.

Strand Two (Following My Interests Online) learning outcomes were seen as very relevant for junior cycle students with the focus on searching and evaluating highlighted as a key area of learning for students in terms of life skills and as digital citizens. It was suggested that the focus on 'texts' in the strand should be expanded to ensure that a broad range of online media, including AI-generated content, are explored, and that students should develop an awareness of how content may be edited.

Learning in Strand Three (Checking The Facts) was again seen as relevant for students and as particularly transferable across the curriculum, both in junior cycle, and as a basis for project work in senior cycle. It was suggested that this learning should be expanded to ensure that students have a basic understanding of how algorithms can impact on their experience online and how digital media can shape public opinion. The significance of disinformation and misinformation in this respect was also highlighted and it was considered important that students would have the skills to ensure a thorough understanding of both reliability and integrity of information.

The focus in Strand Four (Publishing Myself) on the active and positive use of digital media was widely welcomed. It was suggested that students should be further encouraged to apply their learning from Strands One, Two and Three here, and that learning could be expanded to include a greater focus on both digital literacy skills and media literacy skills and the role of influencers and 'content creator'. The potential of digital media as a tool for active citizenship was also suggested as an area for further exploration.

Teachers participating in the review found the learning outcomes relatively clear. They raised the difficulty in ensuring that the content taught is as relevant and current as possible as some teachers find it somewhat challenging to remain abreast of emerging developments in digital and media

literacy. In some specific cases, teachers highlighted learning outcomes that they felt could benefit from updating, or in some cases, a need for greater clarity around student expectations. This feedback has been incorporated into the strand-by-strand discussion outlined above. It was also suggested that a glossary of action verbs would support planning for teaching and learning, and the assessment of student learning.

It was suggested that students should have opportunities to provide evidence of their learning in a variety of ways, including digital media, audio recordings and written pieces which could lead to a broader and richer variety of learner experiences which support the development of digital skills.

> *It would be more beneficial when planning for teaching, learning and assessment if a variety of digital formats were used, as originally envisaged by the specification in order to motivate and engage students.* (Written submission)

All teachers taking part in the review felt that more support would be welcome. Teachers felt that teaching DML required a certain level of confidence and understanding of the digital world. In some schools there is only one teacher of DML, and this can be challenging in terms of planning, collaboration and having an opportunity to share resources. In schools where there is more than one teacher timetabled for the short course, teachers found it beneficial to discuss, collaboratively plan and share ideas. It was suggested that sample units of learning, similar to those available for a number of junior cycle subjects, would be welcome, while other teachers felt that access to up-to-date 'age and stage' relevant resources would be welcome. Raising awareness of the current range of resources available would also help to support teachers.

> *I feel there can be of a lack of resources and concrete guidance on what to do – this makes it more difficult to plan lessons and is time consuming especially when you have other subjects to prepare and plan for.* (Online survey)

Written submissions received during the review highlighted the range of supports that are available, including those offered by Webwise, PDST Technology in Education, Junior Cycle for Teachers[1], Arts in Junior Cycle and Media Literacy Ireland. Opportunities for cross-curricular links were also noted, with SPHE and CSPE being referenced in particular. However, it was noted that teachers sometimes feel overwhelmed when trying to find the most appropriate and up-to-date resources to support teaching and learning. It was also suggested that teachers would benefit from CPD that includes practical guidance on how to make the most of resources available.

[1] Junior Cycle for Teachers provided CPD to support the implementation of the Framework for Junior Cycle. The service is now part of Oide, a new amalgamated support service.

The Classroom-Based Assessment, Assessment Guidelines and reporting on student learning

The Assessment Guidelines (NCCA, 2017) were seen as providing helpful guidance for the completion of the final project for the Classroom-Based Assessment (CBA). The guidelines note that students can choose a topic of their own interest and can decide the digital format in which the project will be presented and published, and that the CBA involves 6-8 hours of class time. The autonomy to base the project for the CBA around any area of interest related to the course was welcomed, but some teachers suggested that greater guidance and supports for possible topics would be helpful.

> *The broad nature of the CBA creates its own challenges – some students need clear guidance when dealing with vague broad tasks. It is very beneficial to other students, where they loved the freedom to research an issue*. (Teacher focus group)

The majority of students participating in the review welcomed the autonomy afforded by the Classroom-Based Assessment and the opportunity to focus on a topic of interest to them. A small number of students found the open-ended nature of the CBA challenging in terms of narrowing down an area of focus. It was also suggested that the CBA offers opportunities to make cross-curricular links with the potential to explore topics such as health literacy and sourcing reliable health-related information.

The focus on presenting the CBA in a digital format of the student's choice was broadly welcomed with students particularly motivated where they had the freedom to choose any format they wished, with vlogs, blogs, podcasts, websites, digital books, PowerPoint presentations and Canva publications mentioned as formats used. The Assessment Guidelines also suggest that students might be given the opportunity to present elements of their project to a suitable audience. Some students taking part in the review had the opportunity to make a presentation about their CBA to the class and most felt that this was beneficial in terms of skill development. Some students worked in groups to complete the project, which some enjoyed but others found challenging.

Some teachers and stakeholders mentioned the need for annotated examples of CBAs while others felt that a further overview of potential areas for exploration as part of the project would be useful as a touchstone, expanding on the examples provided on page 10 of the specification. The student questions provided on page 9 of the Assessment Guidelines were also mentioned as a useful resource and it was suggested that these could be expanded upon or updated to further support students and teachers.

Most teachers participating in the review found the Features of Quality useful and relatively easy to apply to student work although some teachers expressed concerns about differentiating between the descriptors. Some teachers raised the need for further clarity regarding awareness of ethical and legal issues and how this could be demonstrated by students, with a need to emphasise referencing sources. It was also suggested that some element of critical knowledge should be incorporated into the assessment of the CBA to promote deeper critical engagement with the learning outcomes in the specification.

The absence of a final examination was particularly welcomed by students, but some students were disappointed that their achievements in DML were not recorded on their State Examinations

Commission certificate, and they had to wait until the publication of the Junior Cycle Profile of Achievement (JCPA) to receive their result in an official format. Both teachers and school leaders felt that this impacted on the status of the short courses and, in some cases, on parental perceptions of short courses, as the awarding of the JCPA has been delayed in recent years due to other issues including the later publication of SEC examination results.

Feedback from schools regarding the introduction of the short course

Engagement with school during the review found a number of different approaches to timetabling the short course, in addition to providing insights into the rationale for offering short courses, and some perceived benefits and challenges. Schools offering the short course generally introduced DML to ensure that students are aware of the challenges of the online world, to help students in their transition from primary to post-primary school and to support students in developing a set of transferable life skills.

All schools visited as part of the review offered the short course across the three years of junior cycle, with the timetabling arrangements varying to reflect the length of class period used (40 minutes versus one hour). In some cases, schools offered students a choice between two short courses with Coding, Digital Media Literacy and Artistic Performance being the most popular amongst the schools visited. In other schools, two short courses were offered as a 'package' with students choosing the short course option in lieu of a subject from the options available. Some school leaders expressed concerns regarding their school's capacity to provide short course options within the timetable due to increasing curriculum pressures. This was seen as a particular challenge by schools offering one stand-alone short course.

The main benefits of offering a short course option identified included an opportunity to diversify curriculum provision and to provide an opportunity for students to develop knowledge and skills that were considered essential for their daily lives and transferable across the curriculum while helping students to become informed active citizens in an increasingly digital world. Some of the challenges arising included ensuring that the school had a teacher with the skills and interests to match the content of the short course, building capacity with a team of teachers available to teach the short course without impacting on other subject areas, access to professional development and, in some cases, access to digital resources despite the funding that had been available to schools under the Digital Strategy for Schools 2015-2020.

5. Next steps

NCCA would like to acknowledge and thank the teachers, students, school leaders and other stakeholders and organisations who contributed to these reviews. Their feedback provided rich insights into how these short course specifications have been enacted in schools as part of the Framework for Junior Cycle, and how short courses can continue to enhance the student learning experience.

This section of the report considers the feedback from the review to identify key insights and proposed responses. In doing so, it is important to acknowledge the extraordinary effort made by school leaders and teachers to offer opportunities for students to engage with short courses as part of the implementation of the Framework for Junior Cycle.

The feedback is explored under two headings:

- Feedback directly related to the Coding/Digital Media Literacy short courses
- Feedback related to the Framework for Junior Cycle.

5.1 Feedback directly related to the Coding/Digital Media Literacy short courses

The review highlighted the positive experience of short courses as part of the junior cycle curriculum. It is clear from the review that the introduction of short courses such as Coding and Digital Media Literacy provides an opportunity for schools to broaden the learning experiences for students, respond to student interests and provide access to areas of learning not covered by the combination of curricular subjects available in the school. The growth in the number of schools offering these two short courses demonstrates that an increasing number of schools have identified the learning from these short courses as important for students.

Key insights gained through the review also provide some areas for consideration within each of the two short courses. These areas, coupled with some proposed responses to be acted upon in the short term, are outlined in the sections below. Areas for action set out within the proposed responses can be worked on in Q3 and Q4, 2024 with revised Specifications and Assessment Guidelines available for incoming first year students in 2025.

Coding: Key insights and proposed responses

Key insights	Proposed responses
There is a desire for students to learn a range of broad computational thinking skills and develop an understanding of issues relevant to computer science and coding including the impact and influence of emerging technologies. The short course should provide opportunity and challenge for all students regardless of their prior experience.	Review the learning outcomes within the specification to ensure that there is a focus on computational thinking and aspects such as ethics, data privacy and handling, and digital literacy within appropriate learning outcomes. Explore the possibility of broadening the range of languages that students may learn and apply in their study of Coding to ensure that all students are sufficiently challenged and supported in their learning.
The time needed for students to develop the knowledge, understanding, skills and values may vary based on the prior learning and experience of the students.	Review the learning outcomes to ensure they are flexible enough to provide opportunities and challenges for all students.
The technical language used in some of the learning outcomes can be challenging for teachers relatively new to teaching Coding or for those without a formal qualification in computer science.	Include a glossary as an Appendix to support a common understanding of the technical terms used in the specification. Explore the potential of additional curated supports for teaching and learning for the short course with Oide and recommend raising awareness of resources that are currently available and useful.
The range of student abilities can be challenging when students are engaged in completing the CBA despite the group-based nature of the work.	Review the CBA and Assessment Guidelines and scope the potential of a collection of student work/portfolio as a CBA format.
It is important that the CBA sets out a realistic level of challenge and can be easily assessed by teachers. The Features of Quality can be	Review the Features of Quality in tandem with potential redevelopment work around the CBA itself, and ensure that the language used provides clarity and sets out realistic

unclear in places, and it can be challenging for teachers to distinguish between descriptors.	expectations of students after completing a 100-hour short course.
Emerging technologies, including Artificial Intelligence (AI) pose significant challenges for the development of code in all languages and this needs to be considered in terms of how students generate and understand code both in the classroom as part of teaching and learning and in the work completed for the CBA.	Explore the potential of referencing AI explicitly within the specification with a focus on understanding and editing code in addition to generating code. Scope how the Assessment Guidelines could enable teachers to better guide and ensure that students, if they are using AI, do so ethically and responsibly.

Digital Media Literacy: Key insights and proposed responses

Key insights	Proposed responses
The aim of the DML specification should place a greater focus on literacy and being critically aware. An enhanced focus on this aim across the strands would support students in developing as active digital citizens.	Review and update the aim of the specification to better capture the literacy aspect of the course and emphasise the importance of students developing critical knowledge and becoming active participants in digital spaces. Include a brief strand narrative to complement the course overview, promote cross-strand links and support teachers in realising the aim of the specification (including an enhanced focus on literacy and being critically aware).
The learning outcomes within the specification were generally seen as broad and facilitated flexible approaches to teaching and learning. However, it can be challenging to remain abreast of developments in the digital landscape, including aspects such as Artificial Intelligence.	Review the learning outcomes across the four strands to take account of digital developments including AI to ensure that the learning outcomes support students in understanding both the advantages and challenges of digital media and the online environment. Ensure that there is a continuum of learning that builds on their prior learning and experience as digital citizens.

Some consideration needs to be given to ensuring that the learning for students builds on their prior learning and their own personal experience. It can be difficult to gauge the expectations for students within certain learning outcomes.	Include a short paragraph on progression similar to that included in the current junior cycle subject specifications, to support teachers in building on student prior knowledge and learning. Review identified learning outcomes to ensure that teachers are supported in identifying expectations for students.
Digital media literacy is a dynamic area of learning, and it is sometimes challenging to find appropriate resources to support teaching and learning due to the broad diversity of materials available online.	Communicate the need for additional curated supports for teaching and learning to Oide, Webwise and Media Literacy Ireland, and support raising awareness of the resources that are currently available.
Teachers and students can find it difficult to ensure that the final project is challenging enough for the Classroom-Based Assessment and would appreciate additional supports in this area. Greater clarity around references to ethical and legal issues and how students might demonstrate awareness of these would be helpful while assessment of student critical awareness could be considered as part of the CBA.	Provide enhanced supports for assessment within the short course specification and/or Assessment Guidelines, including providing further examples of projects that could be undertaken and expand the student prompt questions in the Assessment Guidelines. Review the Features of Quality with a particular focus on the feature referring to ethical/legal issues to ensure clarity, and consider the potential to include some aspect of critical knowledge in the Features of Quality as relevant.

5.2 Feedback related to the Framework for Junior Cycle

Feedback from this review will be shared with all stakeholders involved in the implementation of the Framework for Junior Cycle. Key insights in this respect include:

- The positive impact of short courses on curriculum provision, student learning and the development of a range of key skills
- Student perspectives on the advantages of the reduced number of assessment events associated with short courses
- The benefits of the student-centred nature of the CBA in both short courses and the autonomy afforded by the Assessment Guidelines
- The challenges faced by schools in offering and timetabling short courses in an increasingly crowed curriculum space and where students require access to digital technology
- The challenges faced in offering short course options where teachers require specific confidence, knowledge and understanding
- The need for timely reporting on the CBA through the JCPA to acknowledge student achievement.

It is also important to note that a research study aiming to explore the implementation and impact of the Framework for Junior Cycle in post-primary schools in Ireland is ongoing. As a longitudinal study, the experiences of schools are being explored over a period of four years, in order to capture the complexity, challenges and successes in enacting the Framework for Junior Cycle. The emerging reports will provide further insights into the experience of junior cycle in schools. Reports from the study are available via the study website.

References

Council Of Europe (2023) *Digital Citizenship Education* [online] https://www.coe.int/en/web/digital-citizenship-education [accessed 10 July 2023]

Department of Education and Skills (2015) *Framework for Junior Cycle* (Dublin: Government of Ireland)

Department of Education and Skills (2016a) *Specification for Coding Short Course* (Dublin: Government of Ireland)

Department of Education and Skills (2016b) *Specification for Digital Media Literacy Short Course* (Dublin: Government of Ireland)

Department of Education and Skills (2016c) *Specification for Leaving Certificate Computer Science* (Dublin: Government of Ireland)

National Council for Curriculum and Assessment (2017) *Coding: Guidelines for the Classroom-Based Assessment* (Dublin: NCCA)

National Council for Curriculum and Assessment (2017) *Digital Media Literacy: Guidelines for the Classroom-Based Assessment* (Dublin: NCCA)

National Council for Curriculum and Assessment (2019) *General Data Protection Regulation Updated Data Protection Policy* (Dublin: NCCA) [online] available https://ncca.ie/en/resources/ncca-data-protection-policy/ https://ncca.ie/media/4630/ncca-data-protection-policy.pdf [accessed 14 May 2023]

Appendix A:

Written submissions were received from the following organisations:

Coding

- Department of Education Inspectorate
- Junior Cycle for Teachers

Digital Media Literacy

- Department of Education Inspectorate
- Dublin City University Institute for Future Media, Democracy, and Society (DCU FuJo) in conjunction with EDMO Ireland (the Irish hub of the European Digital Media Observatory)
- Irish Heart Foundation
- Junior Cycle for Teachers
- Webwise

The templates provided to guide written submissions are also included in this section.

Coding Template for Written Submissions

NCCA is undertaking an early insights review of the junior cycle short course specification for Coding. The purpose of this review is to gather feedback from school management, teacher/educators, students and interested parties in relation to the experience of the Coding short course.
Feedback for the review will be gathered through school visits, written submissions and online surveys. All of the feedback will be analysed, and a report will be published. NCCA will use this feedback to continue to support post-primary schools in implementing Coding in their schools.
Please use the prompts below and return your written feedback by email to consultations@ncca.ie marked 'Junior Cycle Coding' in the subject line, by Monday 29th May.
You will find it helpful to access a copy of the Coding specification before completing the survey. This can be accessed here https://www.curriculumonline.ie/Junior-Cycle/Short-Courses/Coding/ in addition to the Assessment Guidelines for the short course.

1. The aim of the Coding specification is to develop the student's ability to formulate problems logically; to design, write and test code through the development of programs, apps, games, animations or websites; and, through their chosen learning activities, to learn about computer science.
   Does the Coding specification achieve this aim?
   Does it capture and facilitate learning about what's really important for coding?
   In other words, through engaging in this course, do students come to understand, value and take appropriate action on topics that are relevant and important in learning coding/computer science?
2. Are there any omissions or topics that need to be given more emphasis within the specification?
3. What opportunities and challenges have you experienced in using the learning outcomes within the specification to plan for teaching, learning and assessment?
4. Are there any particular learning outcomes that have really worked well in terms of teaching, learning and assessment?
5. Are there any particular learning outcomes that are unclear or problematic?
6. What feedback would you like to give us on doing the Classroom--Based Assessment (CBAs)?
7. Are the Assessment Guidelines helpful or is anything missing?
8. Overall, what have been the main successes and challenges so far in teaching the Coding short course?
9. Any additional feedback not covered in the questions above?

Digital Media Literacy Template for Written Submissions

NCCA is undertaking an early insights review of the junior cycle short course specification for Digital Media Literacy. The purpose of this review is to gather feedback from school management, teacher/educators, students and interested parties in relation to the experience of the Digital Media Literacy short course.
Feedback for the review will be gathered through school visits, written submissions and online surveys. All of the feedback will be analysed, and a report will be published. NCCA will use this feedback to continue to support post-primary schools in implementing Digital Media Literacy in their schools.
If you wish to provide written feedback on Junior Cycle Digital Media Literacy, please use the prompts below and return your written feedback by email to consultations@ncca.ie marked 'Junior Cycle Digital Media Literacy' in the subject line, by **Monday 29th May.**
You will find it helpful to access a copy of the Digital Media Literacy specification before completing the survey. This can be accessed here https://curriculumonline.ie/Junior-cycle/Short-Courses/Digital- Media-Literacy/ in addition to the Assessment Guidelines for the short course.

1. The aim of the Digital Media Literacy specification is to extend and refine students' ability to use digital technology, communication tools, and the internet creatively, critically and safely, in support of their development, learning and capacity to participate effectively in social and community life.
   Does the Digital Media Literacy specification achieve this aim? Does it capture and facilitate learning about what's really important for digital citizenship? In other words, through engaging in this course, do students come to understand, value and take appropriate action on topics that are relevant and important in the online world?
2. Are there any omissions or topics that need to be given more emphasis within the specification?
3. What opportunities and challenges have you experienced in using the learning outcomes within the specification to plan for teaching, learning and assessment?
4. Are there any particular learning outcomes that have really worked well in terms of teaching, learning and assessment?
5. Are there any particular learning outcomes that are unclear or problematic?
6. What feedback would you like to give us on doing the Classroom- Based Assessment?
7. Are the Assessment Guidelines helpful or is anything missing?
8. Overall, what have been the main successes and challenges so far in teaching the Digital Media Literacy short course?
9. Any additional feedback not covered in the questions above?

NCCA

An Chomhairle Náisiúnta
Curaclaim agus Measúnachta
National Council for
Curriculum and Assessment