

Social Impact of Digital Formative Assessment on Students

Professor Jannette Elwood and Professor Kay Livingston

Queen's University Belfast, UK; University of Glasgow, UK

February 2023





Contents

1.	INTRODUCTION TO THE ASSESS@LEARNING POLICY EXPERIMENTATION.....	4
2.	DIALOGUE LABS.....	7
2.1	Guidelines for CDL and SDLs.....	8
2.2	Country Dialogue Labs (CDLs).....	9
2.3	Student Dialogue Labs.....	10
3.	INVOLVEMENT OF STUDENTS IN ASSESS@LEARNING POLICY EXPERIMENTATION.....	12
4.	METHODOLOGY.....	14
4.1	Participants of the Country Dialogue Labs.....	15
4.2	Participants of the Student Dialogue Labs.....	15
4.3	Data analysis process.....	16
4.4	Limitations of the research.....	17
5.	KEY THEMES FROM THE DATA.....	18
5.1	Understandings of Formative Assessment, Digital Assessment and Digital Formative Assessment.....	18
5.2	Impact on the learning process of Digital Assessment and Digital Formative Assessment.....	20
5.3	Digital poverty/digital divides.....	22
5.4	Functioning of, and familiarity with, software platforms and digital tools.....	24
5.5	Roles of the teacher.....	25
5.6	Fairness and the powerful narrative of summative assessment.....	28
5.7	Whole school policies/protocols.....	30
5.8	What would students want policy makers/school leaders to know about digital assessment and digital formative assessment.....	32
6.	CONCLUSIONS AND RECOMMENDATIONS.....	35
6.1	Benefits of Digital Assessment and Digital Formative Assessment.....	35
6.2	Limitations of Digital Assessment and Digital Formative Assessment.....	35
6.3	Change of assessment culture.....	36
6.4	Involving students in policy experimentation.....	37



6.5	Capacity building for teachers and students.....	38
6.6	Recommendations	39
7.	REFERENCES	40



1. INTRODUCTION TO THE ASSESS@LEARNING POLICY EXPERIMENTATION

Assess@Learning is a European policy experimentation (2019-2023), co-funded by the Erasmus+ Programme of the European Commission, with partners from Belgium, Estonia, Finland, Greece, Italy, Spain, Portugal and the United Kingdom, coordinated by European Schoolnet. The aim was to support and understand the uptake of digital formative assessment (DFA) practices in schools. The policy experimentation involved the development of an online DFA toolkit providing practical guidance for school leaders, teachers, students, parents and policy makers. The use of the toolkit was tested through Randomised Controlled Trials (RCTs) in five of the project countries (Estonia, Finland, Greece, Portugal, Spain) providing quantitative data. In parallel, the policy experimentation had a series of Country Dialogue Labs (CDLs), which enabled qualitative data to be gathered. A wide range of stakeholders came together to share their views, understandings and experiences of DFA. The Dialogue Lab approach which enables the views of stakeholders on a specific educational topic to be shared and to gather their authentic voices as data, had been a successful feature of a previous European policy experimentation (see Livingston, 2020). However, a unique feature of the Assess@Learning Dialogue Labs was the inclusion of school students as stakeholders, with the focus topic being DFA. School students have not been involved regularly in educational change and policy implementation, yet they are the ultimate beneficiaries of schooling. Their social context, understanding of, attitude to and active engagement in any changes sought can significantly affect the impact of policy innovations. Involving students in research on policy implementation has become more common over recent years, with proponents who work with students in this way seeing it as imperative that their views are taken into account in policy decisions that affect them as well as affording them greater opportunities to participate in political life at the public level (Arnott, 2008, Tisdall 2008). Engaging in dialogue with students also embraces a core rationale of Assess@Learning which recognises that students have expertise in the views and experiences around the assessment of their learning, also that they, as agents of change, are as wise to discuss these issues about formative and digital formative assessment as adults are. The inclusion of students as stakeholders recognises that students have a significant contribution to make in policy experimentation on DFA. The students participated in the CDLs as stakeholders and in student-only dialogue labs (SDLs).



The CDLs took place in each of the policy experimentation's three phases (see Figure 1). CDLs took place in each of the five countries in each phase. The stakeholders involved included: national and local policy makers; school leaders; teachers; school assessment and/or technology coordinators; researchers in assessment and technology; teacher educators and school students. Two Student Dialogue Labs were designed involving students, one at the start of the project (prior to the first CDL) and one at the end. During the CDLs and SDLs qualitative data were gathered from the stakeholders. It is the findings of the analysis of these data that is the focus of this report - in particular, the findings concerning the social impact of DFA on students. The report should be of interest beyond policy makers and supports the understanding and use of digital assessment and informs educators embarking on using new forms of digital assessment.

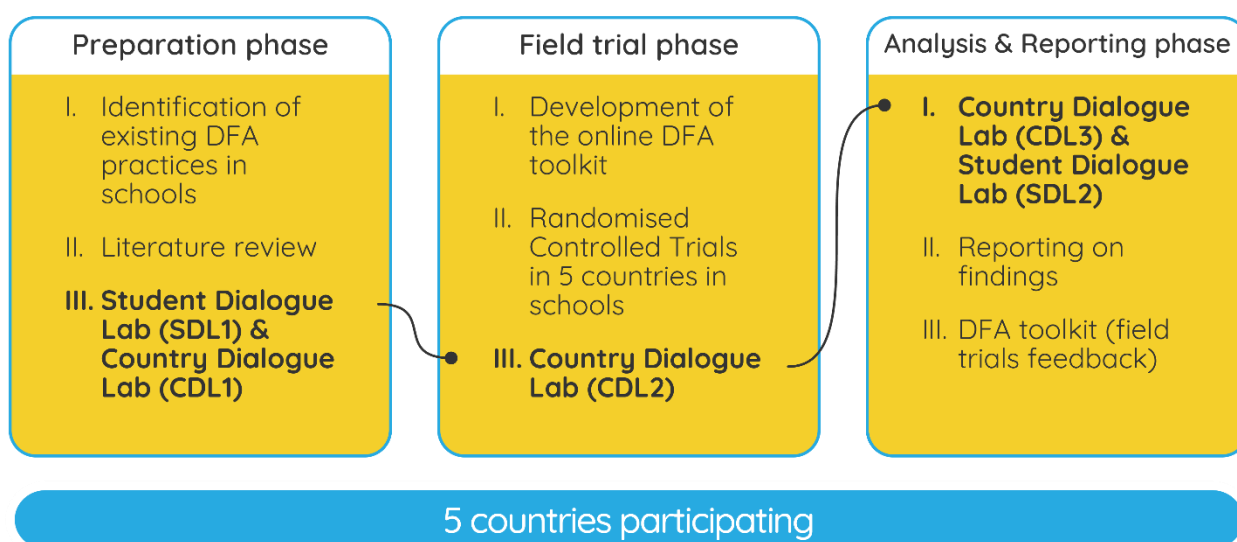


Figure 1: Phases of the Assess@Learning Policy experimentation

In the first phase, a literature review of international research and policy studies was carried out, to explore “how digital technologies may support and strengthen classroom-based formative assessment, including peer- and self-assessment” (Looney, 2019). The literature review highlighted the differences in how the concepts of formative assessment (FA) and DFA are defined and understood. A working definition of DFA was developed to stimulate discussion and guide the selection of material and examples of DFA in schools for the development and testing of the online DFA toolkit.

Digital formative assessment includes all features of the digital learning environment that support assessment of student progress and which provide information to be used as feedback to modify the teaching and learning activities in which students are engaged. Assessment becomes ‘formative’ when evidence of learning is actually used by teachers and learners to adapt next steps in the learning process (Looney, 2019).



The challenges of definitions and understandings of FA and DFA were explored in the CDLs and in the SDLs and are discussed in the Findings section below (Section 5). Existing practices of DFA in schools were also identified in the first phase and supported the development of the online toolkit, which was co-created by the project partners to provide guidance on DFA, including practical examples for schools. The first SDL and CDL provided the opportunity to hear directly from students in 5 European countries and other stakeholders about their experiences of DA and DFA in schools.

In the second phase of the project, in parallel to the Dialogue Labs, randomised controlled trials (RCTs) were conducted in five of the project countries (Estonia, Finland, Greece, Portugal, Spain) to test the DFA toolkit with students, teachers, head teachers and parents from randomly selected schools. The results of the RCTs were reported on in the third phase of the policy experimentation and were discussed in the final CDL and SDL.



2. DIALOGUE LABS

In the design of the Assess@Learning policy experimentation the involvement of stakeholders who had responsibility for or experience of formative assessment (FA) or digital formative assessment (DFA) or digital assessment (DA) in schools was recognised as essential. Research has shown the importance of early and inclusive involvement of stakeholders in policy development, implementation and evaluation (Looney et al., 2022). Dialogue Labs are structured workshops which enable participants to come together, to discuss a specific topic. In the Assess@Learning Policy Experimentation, the Dialogue Labs were purposively designed to provide opportunities for interaction, collaboration, knowledge sharing and exchange of ideas between stakeholders in relation to FA, DA and DFA in schools. Underpinning theories of learning are relevant to thinking about the approaches taken during the Dialogue Labs and why they were chosen as a way to enrich the learning of everyone involved in Assess@Learning. For example, Vygotsky (1978) emphasised the importance of social interaction in relation to learning. Interaction is important during the Dialogue Labs to share views and ideas, encourage the development of shared views and values in the implementation and evaluation of DFA and understanding about what it is aiming to achieve. The Dialogue Labs were planned and organised to enable the participants to engage actively through multiple interactions with other stakeholders, sharing different views, ideas and perspectives.

In an endeavour to create a sense of community (Wenger, 1998) and contribute to the development of sustained interest and commitment to the educational topic, a series of Dialogue Labs (SDLs and CDLs) were designed. They were designed as a connected series to enable the participants to develop their thinking across the series of Dialogue Labs. The same participants were invited to participate in all 3 CDLs with the intention of developing a network of policy, research and practice stakeholders who could sustain knowledge sharing in DA and DFA in schools beyond the lifetime of the policy experimentation. Interaction between all the stakeholders aimed to contribute to the development of mutual engagement, a shared repertoire and a sense of joint enterprise (Wenger, 1998).

To engage with students and to build their capacities to engage in dialogue with stakeholders two Student Dialogue Labs (SDL) were planned. These SDLs took place separately from CDLs, recognising that different approaches are needed to bring out student voices and that students may be influenced by hierarchical structures if they were not informed about the aims, structure and topic of the CDLs prior to their participation in them with other stakeholders. The SDLs took place in each of the five countries where the RCT field trials were carried out. See Figure 2 for the overview of the series of SDLs and CDLs that took place during the policy experimentation.

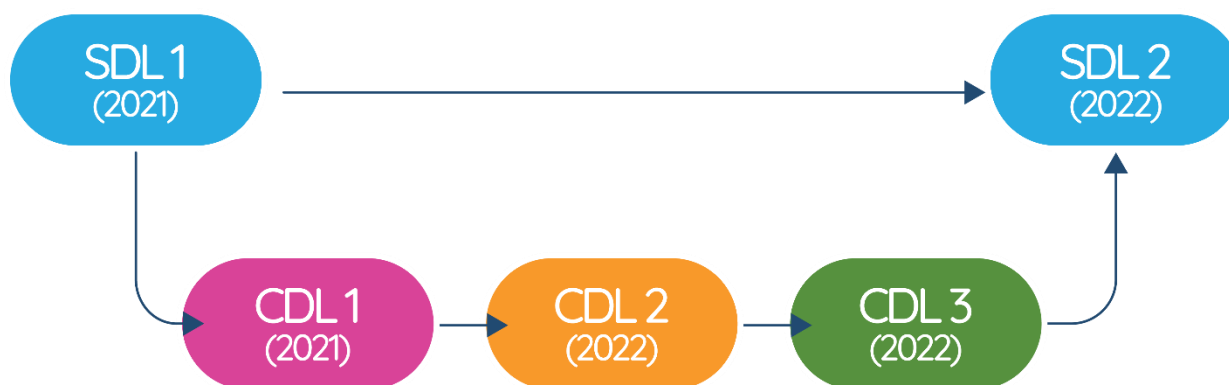


Figure 2: Series of SDLs and CDLs: Building a community of stakeholders

The series was designed to provide sufficient time between each Dialogue Lab to enable the feedback and comment gathered from the participants to be analysed. The anonymised feedback from the 5 countries was then shared at the start of the subsequent dialogue labs to demonstrate the stakeholders' views were being heard and valued and to enable all the participants to hear the feedback from across all countries.

2.1 Guidelines for CDL and SDLs

A key element of the success of the Dialogue Lab approach identified in a previous policy experimentation, TeachUP, (European Schoolnet, 2017) was the structure that enabled and focused dialogue between stakeholders, where all voices could be heard. This structure was explained in detail in a series of Guidelines which set out the design and implement of CDLs (Livingston, 2017, 2018, 2019). The Assess@Learning Policy Experimentation drew on this Guidelines in the design and implementation of the CDLs and the SDLs. The design ensured the emphasis from the start of the dialogue labs was on interaction and dialogue between all stakeholders. The format of each of the sessions in the dialogue labs followed a similar pattern: a short input on the focus for the dialogue in a plenary session; followed by small group facilitated discussion framed by a reflective question, involving approximately 5 or 6 groups of 6 stakeholders and a facilitator; time for the group to identify and decide on the main points to be shared with others; followed by a plenary feedback session to hear the main points of discussion from each group. Typically, there were 3 dialogue sessions in each dialogue lab following this format which were detailed in a Standard Agenda for each country to follow in each of the dialogue labs. The agenda followed the pattern described for each session, provided the reflective question to frame the dialogue (for example, about experiences of DA and DFA, barriers and enables, policy recommendations) and the time to be allocated to each part of all the sessions. These Guidelines supported and facilitated the focused dialogue and enabled consistency in approach across all countries responsible for running the CDLs and SDLs. The Guidelines for the SDLs also drew on the Facilitators' Pack developed for the Enabling Students' Civil and Political Rights Study (Centre of Children's



Rights, Queen's University Belfast) in consideration on how to enable student engagement in the dialogue labs (see Section 3 Involvement of Students in Assess@Learning Policy Experimentation for more detailed explanation of the students' involvement in the dialogue labs).

While it was expected that there would be differences in outcomes of the Dialogue Labs it was hoped that in the implementation the approaches would be as similar as possible to provide qualitative data for the policy experimentation. Detailed guidance was also given for, ethical conduct of the SDLs and CDLs, and the collection, storage, use and reporting of the data collected using a Standard Reporting Template (the data collection, data handling process and reporting will be explained for both the CDLs and the SDLs in more detail in the Section 4. Methodology below).

2.2 Country Dialogue Labs (CDLs)

The aims of CDLs were:

- To involve and understand the views, ideas and perspectives of the wide range of stakeholders about FA and DFA.
- To involve a wide community of stakeholders in the process of understanding and evaluating DFA and disseminating information about the Assess@Learning policy experimentation.
- To harness all stakeholders' expertise through the facilitation of knowledge sharing and cooperation.
- To enable all participants of the CDL to have an opportunity to have their voice heard and all gather a range of different perspectives to inform and improve the development, implementation and evaluation of DFA.
- To offer a platform for dialogue between students and other stakeholders about their experiences and views on formative assessment and digital formative assessment.
- To contribute to the generation of evidence-informed advice for policy makers and others involved in DFA.
- To improve the flows of information between policy, practice and research communities and between adults and students.
- To develop networks of stakeholders and others who can sustain knowledge sharing in DFA to improve adoption and implementation of DFA.



Three Dialogue Labs were implemented by five of the Country Partners in the Assess@Learning Policy Experimentation before, during and after the field trials. Each Lab focused on a different stage of the policy experimentation and had a different focus.

The focus of 1st Country Dialogue Lab before field trials was:

- Sharing knowledge and experience about formative assessment in general and DFA in particular.

The focus of 2nd Country Dialogue Lab during field trials was: /

- Sharing and discussing influences (enablers and barriers) on the development of digital assessment generally and DFA in particular.
- Sharing ideas for supporting the development and implementation of DFA by schools and by policy.

The focus of 3rd Country Dialogue Lab after the field trials was:

- Discussion of the results of the RCT.
- Implications of the experiment's findings for students, schools and policy.
- Recommendations for policy makers.

2.3 Student Dialogue Labs

The SDLs were designed to enable students to engage with each other and the facilitators in authentic ways and enable real context observations about the students' competence levels and capacity to handle DFA and the new roles and learning processes it entails. Two SDLs were implemented and hosted by the national partners in the 5 field trial countries with EUN support. The first SDL was primarily focused on capacity building for participation in the policy experimentation (particularly the CDLs) and familiarising students with the main concepts being investigated. In addition, the SDLs provided an opportunity to engage with the students about what they thought the pertinent issues were regarding formative assessment and what they thought might be of importance to their peers in discussing aspects of DFA and, how FA and DFA are carried out with them in their own contexts.

The aims of SDLs were to enable students to discuss and inform and share their views around:

- the main ideas and focus of the research as well as their experiences of their learning contexts more generally.
- what they understood about what they bring to the classroom as a consequence of their social agency and context.



- what benefits and challenges they saw around teacher-student relationships and interactions.
- what their experiences were of being assessed by teachers.
- what they think are best ways to disseminate outputs from the research that would be best suited to engage young people with the key messages of the research.



3. INVOLVEMENT OF STUDENTS IN ASSESS@LEARNING POLICY EXPERIMENTATION

Educational policy is a complex field of research and practice and as Ozga (2000) has indicated there is no commonly held definition of policy and how we understand it depends on our own views and perspectives related to what kind of stakeholder we are. Within the Assess@Learning context, we took our understanding of policy from Ball, Maguire, and Braun (2012, p.3) who encourage us to consider policy as a process of enactments; “it encompasses the dynamic and non-linear aspects ... of the policy process” (Ball et al, 2012, p.6) in which stakeholders (teachers, students, principals, senior leaders, etc.) act as policy actors who mediate and ‘produce’ policy through interpretation and adaptation within local contexts and settings. Aligned to the notion of policy as enactments and key stakeholders as policy actors, more recently, young people are more likely to be considered as public policy actors and as such should have their views taken into account in social and civic policy decisions that affect them directly. A commonly cited reason for involving children in public policy is their right to participation under article 12 of the UNCRC, which asserts children’s rights to participate in decisions which affect them (Lundy, 2007). While the UNCRC has been influential both in research and policy terms, the push for children to be recognised as public policy actors is not only made on a legal basis. As users of public policy, children are affected by reforms to public institutions and policies, and so, it is argued, they should be given the opportunity to participate in decisions regarding change and development (Tisdall, 2008). Underlying this is a shift in perceptions of young people as having the capacity to give valid insights on institutions and services (Arnott, 2008).

With education policy firmly rooted in social and civic policy domains and the global expansion of educational policy having moved from a local responsibility to a national and global enterprise (Lingard et al 2016), education has been ‘subjected to incessant and fundamental reform’ as governments around the world have navigated new social, economic and technological challenges (Ball and Bowe, 2020). Aligned with these shifts in responsibilities around educational reform, its structures and power relations at both national and international levels, educationalists have also been calling for changes in mind-sets, with regard to who is authoritative about educational change and who should be involved in decision making at national and international levels. Such calls for changes in social and cultural understandings of education and who is knowledgeable about the best ways to reform old and outdated practices, have also included invites to support respectful dialogue between students and adults in educational spheres. Educationalists have demonstrated the potential for student voice to enhance understanding of the impacts and



effects of educational policies and practices as they are played out at institutional, national and international levels (Cook-Sather, 2002).

More recently, educational assessment research has also highlighted the importance of listening to students' experiences as an essential component of understanding the impact of assessment systems and reforms on them and their learning (Banks and Smyth, 2015; Elwood, 2012; Elwood et al., 2017). Within the Assess@Learning project we took the views of significant research studies and researchers (Cook-Sather, 2002; Elwood, 2012; Elwood and Lundy, 2010) seriously and developed a rationale to effectively and deliberately include students as key policy actors within the digital formative assessment policy experimentation, recognising the fundamental importance of student agency in this research. Through the SDLs and student participation in the CDLs our rationale was modelled in practical and research terms. The students were brought together, in a helpful and productive process, in order to systematically work with them, to capacity build around the focus of the policy experimentation and to actively hear their voices, through dialogue with them and their peers, to listen to their experiences with regard to the effective implementation of DA and DFA in schools and classrooms across Europe.



4. METHODOLOGY

The aim of Assess@Learning was to gather authentic voices of stakeholders responsible for developing or experiencing DFA in schools. The focus of this report is on the impact of DFA on students. Our research question was: What is the social impact of DFA on students? We wanted to understand the reality of the influences from the students themselves and those working with the students. We understand ‘social’ impact of DFA as any influence on the students’ lived experience of school and in particular, their experience of DA, DA and DFA. This included for example, the impact of their interactions with teachers, with peers and with assessment approaches and digital assessment tools. We expected that there would be differences in experiences, perspectives and views amongst the different stakeholders involved in the dialogue labs. The collection of qualitative data enabled us to access multiple lived experiences, views and understandings about DA and DFA and positioned our research in an interpretivist paradigm.

Before we proceeded with the data collection, the research plans were reviewed and approved by the Ethics Committees of the College of Social Sciences at University of Glasgow and the School of Social Sciences, Education and Social Work at Queen’s University Belfast to ensure they met the ethical requirements. The whole Policy-Experimentation Project was also bound by the ethical guidelines set out by the European Commission. The intention was that all SDLs and CDLs would take place for 1 day face-to-face to enable the stakeholders to meet and share perspectives and views about DFA. However, the restrictions due to the COVID-19 pandemic meant that all but 2 SDLs in 1 country and all CDLs took place online. Consequently, they were organised online, which enabled participants to meet in plenary sessions and in online break-out groups and engage with each other and gather data.

The CDL and SDL Guidelines (see 2.1 above) provided detail about the data to be collected. The guidelines explained the importance ensuring the participants understood what data would be collected, how it would be recorded, stored, used and deleted. Only with the consent of the participants could the data be collected. In the case of the students, both they and the adult responsible for looking after them had to consent to their participation in the Dialogue Labs. The dialogue that took place during the labs was the data. The nature of the data received through the dialogue labs activities was in text form. The Guidelines explained how all the plenary sessions and the small group dialogue should be recorded. In addition, any comments or notes placed in the Chat function of the digital platform or any comments made using other digital tools or notes by the small-group facilitators were also gathered. Direct quotes were labelled adult or student, where possible. The person responsible for implementing the dialogue labs in each of the 5 countries was asked to check the recordings of the dialogue for accuracy with any audio recording made and then translate all recording and notes gathered into English.



The Guidelines also provided detailed guidance for the completion of a Report following each dialogue lab. A Standard Reporting Template was provided to be completed in each country. Data relating to the number of participants engaging in the dialogue lab, their position (e.g., student, teacher, policy maker, etc.) were recorded in the template. The main points from each session of the dialogue lab in response to the reflective question framing the dialogue in the session was also recorded in the Standard Reporting Template. Comments on the dialogue lab approach were recorded in the final section. The Guidelines emphasised that any names that would identify any of the participants should be removed from all materials before encrypting the data and sending it via a secure link to research team for analysis. In summary, text data, from transcriptions of audio files, summary reports, chat comments, comments from other software platforms used (e.g., Padlet, voting apps) that had been translated from the original languages into English were sent (securely) to the research team.

4.1 Participants of the Country Dialogue Labs

The 5 countries were guided to invite stakeholders who had experience and/or an interest in formative assessment and/or digital formative assessment to the CDL. We were aware that the relevant people would differ from country to country according to each context. However, we emphasised the importance of bringing together as wide a range of stakeholders as possible to ensure different knowledge, experience and examples could be shared and discussed. For example, the Country Dialogue Lab participants included: students; teachers; policy makers; school leaders; teacher educators; other stakeholders (personnel from professional associations, local or regional officers, inspectorate, teaching unions etc.) who have knowledge and experience of FA, DA or DFA; researchers; and personnel from other relevant public authorities (e.g., examination/assessment boards). To stimulate dialogue the ideal number of participants was recommended for CDLs as 30 - 35 people (10 students and 20 or 25 adults). It was hoped that the same stakeholders who attended CDL1 would attend all three CDLs. In total the following number of participants took part in the CDLS across the 5 countries:

- CDL1 - 171 participants (44 participants were students)
- CDL2 - 103 participants (31 participants were students)
- CDL3 - 96 participants (23 participants were students)

4.2 Participants of the Student Dialogue Labs

The 5 countries were also guided to invite students from a range of schools to take part in the SDLs. Working with students in this way was relatively new to all 5 countries involved but worked with the research team to consider the value of working with students in this way and to overcome any barriers they might envisage in getting students together to discuss



the research questions without their teachers or other school (adult) personnel with them in the SDLs. The country partners working with the Assess@Learning project facilitated the SDL events and provided personnel to support breakout groups online and in-person through the SDLs. Thus, we emphasised bringing together as wide a range of students as possible, from a range of schools, across age ranges and mix of girls and boys to ensure different knowledges, experiences and examples could be shared and discussed.

In total the following number of students took part in the 2 SDLs across the 5 countries:

- SDL1 - 122 participants across 17 schools (55 girls and 67 boys) age range 14-16
- SDL2 - 64 students across 9 schools (Boys 26; Girls: 38) ages range 14-17 years

As with the CDLs, the goal was to stimulate dialogue and so the ideal number of students recommended for SDLs was 20-25 with them working in groups of 4/5 at each break out session. Ten students who participated in SDL1 were invited to volunteer to participate in the CDLs. It was hoped that these 10 students would attend all 3 CDLs to enable consistency in the community and to be able to develop the dialogue over the series of Dialogue Labs. In an endeavour to ensure that the same students would be able to participate in the 3 CDLs from 2021 - 2022 the students were recommended to be aged between 12 and 15 years in 2021 with some experience and/or interest in using digital tools in their learning. The 10 students and their guardians were asked to consent to their involvement in the SDLs and the CDLs. It was made clear that the students' involvement in the SDLs and the CDLs was voluntary.

4.3 Data analysis process

The data gathered were analysed using Reflexive Thematic Analysis. This interpretative approach to qualitative data analysis facilitated the identification and analysis of the emerging themes (Braun and Clarke, 2019). As explained by Braun and Clarke, this approach enables interpretations of the meaning of the data through a reflexive and recursive process to identify themes, rather than a strictly linear process. This first step involves familiarisation with the data. In relation to this report this step was the entry point to all the data gathered from the CDLs and the SDLs relating to the students. This first step was initially carried out independently by both researchers for one complete set of data from one DL. The emerging themes identified by each researcher were then shared and discussed to check the trustworthiness of the emergent themes. Through discussion the themes were either confirmed, refined or discarded. In the next analysis step the themes were identified through more detailed and systematic engagement with the whole data in an effort to make sense from CDLs 1, 2 and 3 and SDLs 1 and 2. Each data set was then organised around themes or clusters of themes following further discussion between the two researchers.

The critical reflexive thematic analysis focused around responses to key questions/prompts that were used in the dialogue labs. For example, in SDL 1, analysis focused on response from



questions about students' experiences of learning and assessment more generally, their experiences of DFA, both general knowledge of this type of assessment as well as direct experience or interaction with DFA activities in class. From SDL 2, analysis focused on responses to questions about perceptions of the social impact of DA and DFA on students, what they thought might be some of the consequences for students with the increased use of DA and DFA in schools for their learning, and their experiences of schooling more generally. Furthermore, the researchers were eager to explore students' views as to what they would recommend to policy makers developing DA and DFA so that it might improve student learning and assessment more generally as well as aspire to increasing equality and fairness in assessment for themselves and other students. Similarly, the analysis of CDL 1, 2, and 3 focused on the dialogue relating to the reflective questions set out in the Guidelines, particularly the students' responses and the other participants' responses when they were related directly to students or were a follow-on from a students' comment. The report deliberately draws on the authentic voices of the participants in the presentation of the findings. The final themes and the participant quotes used to illustrate the themes were selected through the reflexive approach giving attention the weight of evidence clustering around a theme - either because of the number of similar responses from participants across DLs and/or across the countries.

4.4 Limitations of the research

The research approach enabled 75 hours of dialogue to be gathered (3 CDLs and 2 SDLs, each lasting 3 hours, in each of the 5 countries). This provided rich data to be collected. The detailed Guidelines, the Standard Agenda with specific reflective questions to frame the dialogue and the Standard Report Template enabled consistency in implementing the dialogue labs and in gathering and reporting the data. However, it is acknowledged that there were limitations in the approach. These include differences in how the main points of dialogue were recorded by facilitators when (as in one country) digital recording using the facility of the online platform was not possible for small groups. Also, the data collected in the 5 countries had to be translated into English for analysis and to enable cross-country feedback to be shared with participants of the dialogue labs. The challenges of translating data from one language to another are recognised. Nevertheless, the multiple types of data gathered from the dialogue, chat function, Padlet comments and the Standard Country Reports enabled comments to be cross-checked and main themed to be clearly identified and evidenced.



5. KEY THEMES FROM THE DATA

In the sections below, we discuss the main themes to emerge from the analysis of the DL data with a particular focus on what students said. The themes presented were generated through the critical reflexive thematic analysis carried out (detailed above in Section 4). Initial themes emerged from SDL1 and CDL1, and these were then shared and explored through the feedback collated and the new data generated through dialogue at SDL2 as well as CDL2 and CDL3.

5.1 Understandings of Formative Assessment, Digital Assessment and Digital Formative Assessment

An emerging theme in the analysis of the findings was ‘different understandings of DA, FA and DFA’ amongst the stakeholders within and across the 5 countries. The first session in CDL1 was framed by the question, What is your understanding of digital assessment and digital formative assessment? Consequently, most responses about differences in understandings were predominantly drawn from CDL1. However, as collated feedback from the analysis of all five CDL1 Country Reports was presented at the start of CDL2, further participant dialogue extended and deepened their initial exploration of understandings of DA and DFA and contributed to the findings discussed below. Similarly, SDL1 explored students’ experiences of DA and DFA and their responses, along with those from students engaging in CDLs, also contributed to the identification of differences in understanding of these concepts as a main theme.

The findings show that the differences between FA and DFA was not always clear to all students or to all stakeholders. Some participants offered definitions of DA, FA and DFA while others said that they were not clear either about the meaning of one or more of the concepts and/or the differences between the concepts were not clear. For example, DA was defined by some students as assessment carried out using technological means. Other students were less certain of the meaning of DA.

Assessment is used to collect information to know what knowledge is being acquired. Digital assessment uses technologies in the process.

I don't know what it is, but I guess it's probably similar to a normal assessment, but with digital tools like computers.

These responses appear to imply the continuation of traditional forms of assessment implemented through digital methods rather than a new approach to assessment in the digital context. Many students indicated that assessment through tests and grading was still the most prominent approach they experienced. Other stakeholders also said, “The grading culture prevails over learning”. However, the opportunity for DA to offer more variety was



proposed by other stakeholders including some students, but in the following response shows the focus appeared to remain on the use of tests - “DA is much more useful because it offers more variety in assessment tests.” The continuing powerful narrative of summative assessment will be explored in Section 5.6 below, but it is evident in the following response that challenges of understanding and in assessment experiences remain, “Sometimes summative assessment can be a wolf disguised in the clothes of formative assessment.” Such a situation contributes to students’ and teachers’ mistrust of digital forms of assessment and exacerbates confusion in understanding of different types of assessment. Some students did express mistrust in digital tools in CDL3 (see Section 5.2) and the lack of clarity about the differences in summative and formative assessment was evident in their responses in CDL1. For example, “The difference between the two types of assessment is not clear.” The lack of clarity about the concepts extended beyond students, with some participants suggesting, “There is still a lack of clarity between the differences of formative and summative assessment among specialists.” It is not clear from the data who was included in the category of ‘specialists’ but other responses from teachers indicated that in some cases they were not sufficiently clear about formative assessment.

FA is still vague - what does it mean? We still need to strengthen teachers’ assessment skills. FA is understood as feedback although it is also students own reflection.

The dialogue about FA and DFA in both CDL1 and CDL2 surfaced both similarities and differences in understandings of these concepts between stakeholders and across countries (the impact on students will be returned to in discussion of the next emerging theme). Some participants clarified their understanding of FA before discussing DFA. For example,

It’s an assessment that’s designed to intervene in the improvement processes. A mainly guiding, regulating and motivating function. It allows for a closer and continuous monitoring of the teaching-learning process and is one in which all parties can participate, especially students, as they are the protagonists of their learning process.

Many participants emphasised the importance of FA. In their view the interaction between the teacher and the student was the most important aspect. For others the emphasis was on the students’ development and their engagement in the learning process and its assessment. For example, “Digital and non-digital does not matter as long as students are learning how to reflect on their assessment and their learning process.” Some stakeholders, including students did offer a distinction between assessment and digital assessment - “Assessment is used to collect information to know what knowledge is being acquired. Digital assessment uses technologies in the process.” The distinction between FA and DFA was clear for some respondents as they expressed their understanding of DFA as continuing to offer FA with advantages and benefits in a digital context. They drew on their experiences of DFA suggesting it gave immediacy of the provision of feedback and increased opportunities through the use of digital tools for the student to be involved in progressing their own learning. For example, student responses indicated in DFA, “Students are able to have more



immediate feedback about progress in learning” and they are able to “grow self-awareness of your own learning progression.” Similarly, other stakeholder responses emphasised, “DFA promotes students’ involvement in their learning process, which facilitates their autonomy and awareness of acquired and unacquired skills.” And “DFA involves the student who should know what and how they will be assessed beforehand and know their progress in order to improve.” However, not all stakeholders offered clear understanding of DFA. Some said, “The definition of DFA is vague” and “DFA as a concept of supporting learning is still tricky especially for students but also for teachers and specialists.”

Given that the aim of the dialogue labs was to bring together stakeholders with different experiences and perspectives the differences in the responses is not surprising. The findings underline the importance of bringing stakeholders together to share their views and opinions to develop an understanding of what underpins different views and explore in what way they might hinder development of DA and DFA and impact on interactions with students. The participants responses recognised the importance of understanding differences in DA and DFA and how a lack of dialogue about these differences could be limiting and impact on the students.

What teachers mean and expect from DFA is not necessarily what students experience?

There is a lack of coherence resulting from personal interpretations of the concepts, which may be limiting; As there is no clarification/uniformisation of concepts, there is greater difficulty in the appropriation and implementation of this type of practice.

The stakeholders said they benefitted from the opportunities the dialogue labs provided to gain a better understanding of each other’s views, especially the students understandings, “because the students bring a perspective that may be invisible to others, and this also helps students to better understand teachers and school work.” Understanding differences in understandings of DA, FA and DFA between stakeholders is a starting point to understand how these differences can impact on students’ experiences of assessment in a digital context, including the social impact.

5.2 Impact on the learning process of Digital Assessment and Digital Formative Assessment

A second major theme that emerged from all three CDLs was the role of DA and DFA in the learning process with a strong emphasis on the need for a culture shift in assessment approaches. Many participants across all countries said the emphasis on formative assessment principles was paramount for the student and the teacher. Some suggesting if we do not have a FA culture it is unlikely digital tools will help students and teachers to benefit from DFA. They viewed formative assessment as a culture first and the medium through which assessment is implemented as secondary.



The device is a sub-story. What is important is what we do with devices, and that is depending a lot based on teachers and schools.

The 'soul' of formative assessment is in the reflection and devices [digital devices e.g., laptops, etc.] do not matter that much. Development of self-awareness is essential.

These responses signal a deeper argument than differences in conceptual understanding, rather they were calling for transformation in assessment culture. Their emphasis was on the importance and value of formative assessment in progressing learning, student involvement in the process through their development of reflection and self-awareness in interaction with teachers. To do this in a meaningful way they argued a change in assessment culture was needed with a move away from predominantly grade-centred assessment. The emphasis was on the social interaction between students and teachers and the formation of a relationship of trust between the teacher and the student in FA and how this can be further developed through DFA.

In terms of formative assessment, the human factor is extremely important, because development is relative, it is happening through a relationship.

[FA] presupposes that you have a personal relationship of trust with the student.

Some teachers emphasised, “The feedback that can be given with digital tools brings teachers and students closer and closer, breaking down barriers.” They suggested that students may feel more comfortable in one-to-one interaction with their teacher in a digital space, saying, “It is a ‘closer’ environment to students, a digital environment in which they move more naturally.” Some students confirmed this to be the case. They said they “liked the digital tools both to learn and to be in contact with classmates and teachers.” However, while students feeling comfortable in a digital environment and benefitted from social interaction and communication with their teachers and peers, they recognised that this was not the case for every student. They were aware that some students who do not have access to digital devices and lack digital skills may be more isolated in the learning process and experience a negative social impact. As discussed in Section 5.3 below the students knew a digital divide was experienced by some students. Other stakeholders also recognised that assumptions cannot be made about all students being so called, ‘digital natives’ or have the same access to digital devices of digital communities that enable them to engage in digital social interaction or peer-assessment. The need for greater digital inclusion was recognised.

[Some students] know how and can utilize DFA methods, they have the support from their own networks and relationships, can enhance and make-use of digitalization in their own learning. Then again others are left behind, cannot utilize DFA which then strengthens existing learning gaps, and does not solve them.



Despite students' and other stakeholders' concern about digital inclusion they identified the benefits of DFA in the learning process. In particular, in all the CDLs the greater possibilities and benefits of digital feedback was discussed. The students said that DFA provided more personalized feedback and they were able to have a better understanding of their own learning progress.

Students prefer to be assessed with the DFA because it makes them more aware of their learning and takes into account more aspects than just content and quantitative marks.

For some students these benefits may have impacted on their motivation and increased their sense of having control in their own learning. Also, they said that the objectives of learning could be discussed with their teachers which made them more visible and understandable. However, while students said they benefited from digital feedback, not all students recognised DFA as assessment. To them it remained feedback from a teacher. Other students said they preferred DFA because it seemed more informal. They said this meant it was less stressful.

I think that (as a student) receiving immediate feedback is quite beneficial as it makes you less stressed about what might follow.

The social and emotional impact of a reduction in stress through DFA was particularly evident in some student responses indicated they were closely linked to their self-esteem and confidence.

In classroom it is sometimes hard to step up and present your thoughts in front of everyone, it may feel cumbersome and stressful. Asking for help can also sometimes feel like a big leap. Digital assessment can lower the step to ask for help.

The barrier for asking help and confronting one another is lower. The barrier to ask for help is lower when others do not see or hear it.

These responses show that the DFA enables interactions between students and their teacher to take place in private without other students hearing or seeing the interaction and reduces stress. This opportunity for privacy may enable students to maintain their status amongst peers while having the dual benefit of progressing learning. Students may be more confident in asking for help in areas of their learning when the interaction is with their teacher alone and remains unknown to their peers.

5.3 Digital poverty/digital divides

A third main theme to emerge from the data focused on issues of 'digital poverty' and 'digital divides'. Students from across all 5 nations, agreed that not all schools had similar facilities or funds to ensure all students were well equipped with appropriate hardware and software to benefit from digital assessment and/or digital formative assessment. Digital support



across schools ranged from fully equipped computer labs for computer usage and classes, to individual provision of laptops/tablets to students in order that these can be used in class and at home, to evidence that not all students had access to digital hardware on a consistent basis. However, participants acknowledged while support for digital infrastructure was improving, and students noted how the pandemic had increased access to hardware and software, they were still conscious that students may not all have the same support when they are at home. Students across all 5 countries, recognised there would be challenges for students in meeting DA or DFA requirements outside of the classroom as there were differential resources for devices, software, and broadband as well as differential learning amongst students about how to use apps, software etc. Students were clearly knowledgeable about the variation in student experience of digital tools:

One challenge may be that not all students or teachers know how these pages are used or don't have access to a device, such as a laptop or a mobile phone.

It is difficult for those who don't have the necessary type of technology to carry out the activities, which also happens for those who don't know how to use it.

It was also evident from the data that there are problems with the reliability of hardware, software, and broadband, both within schools and for students at home. Students gave examples of the internet crashing, problems with passwords and access to programmes and or files, time needed to get used to the hardware as well as acknowledging that not all students and teachers are all equally proficient with the software and Apps. These challenges make it 'difficult for those who don't have the necessary type of technology to carry out the activities, which also happens for those who don't know how to use it'.

Students, in their commentaries captured within the SDLs, suggested that investment was needed, by schools, into the technical infrastructure to improve this as well as the skill level of staff and students in order that smooth access to devices and software was consistent. As one student indicated: 'the lack of conditions and resources in schools, internet connections, and the necessary technological equipment which is still not ideal.'

An emerging consideration for students, especially from the conversations within SDL2, was the relationship between computers (desktop or laptop) and mobile phones. For some students, they indicated an almost ubiquitous practice of schools removing phones during the school day or asking students to shut them down and not to use them. This seemed counterintuitive to these students and their pervasive use of mobile phones for both social and educational activities. Students tended to see mobile phones almost as their 'computer' that they use to look things up, to communicate with the school and to access any feedback and/or marks for work carried out in school that is accessed through school portals. For others, it was the opposite, with schools assuming all students had mobile phones and could use them to access school information and communication portals. For these students, there



was concern that schools should be supplying the hardware for students to use and to not assume that all students and their parents/guardians have the resources to get them hardware and software as well as access to broadband:

That I think that in all schools, at least there should be like some equipment on the ground through which children can work, because not everyone has smart phones with them, there are no smart phones at all or parents cannot buy phones for the child. And then these things get worse, like real door doubts. But yes ... in addition to what you can use in school, I think you should not buy it.

This concern both about the use of mobile phones and having access to hardware spoke to a wider issue of how and when schools communicate with students and parents/guardians about feedback and results. We elaborate on this in Section 5.7.

Finally, in relation to dialogue with students about DA and DFA, there was a sense that before large scale moves to digital formative assessment across schools and systems might be implemented, it would be good to evaluate its impact and worth through research: ‘before we scale the practices of DFA we must study it in order to know what is actually beneficial’.

5.4 Functioning of, and familiarity with, software platforms and digital tools

From dialogue and commentary from both SDLs and in the CDLs, there was consistent reference to the competence of both teachers and students with respect to the use of technology for teaching and assessment. How this might manifest itself as a social impact on students became clear through their considerations of their overall experiences of technology within classrooms and how this impacted on their relationships with peer and teachers in their everyday interactions in school.

Students shared experiences of teachers not being well-versed in the uses of technology, not using the software properly. This lack of awareness and familiarity with the digital tools being used or supported by the school, often put students in challenging situations that impacted on them in terms of their learning and outcomes:

Little time to do the activities; difficulties correcting the tests; badly designed tests... which all led to bad results, since not all the possible solutions that the students could answer were listed.

There were of course difficulties as some teachers got stuck and did not know how to use it at first.

Students also voiced discontent at the lack of variety of digital tools and apps being used. This may well have also reflected some teachers’ awareness and familiarity with technology and digital tools available in that they used the same ones all the time. As detailed in section 5.3 above, not only was there consistent commentary about the importance of improving



internet connections, the reliability of hardware and software and the challenges faced of going wholly digital, there was also consistent call for staff and students to be better trained in digital tools and their use in formative assessment activities.

It is necessary to improve the internet connection and the digital competence of teachers and students in order to make a real good use of digital tools.

DA and DFA are not reliable as there are quite frequent technical problems for both teachers and students during the course delivery. Therefore, it needs more time for its effective implementation.

5.5 Roles of the teacher

When discussing understandings and experiences of DA and FA in all three CDLs and both SDLs the 'role of the teacher' emerged as a main theme. When discussing DA and DFA the stakeholders continued to refer to the importance of the teacher.

Digitalization is merely a servant. The most important is the way one thinks - about what to assess and how to assess it. The question "HOW" is not coming from digitalization [capitalisation of HOW in the original].

The underlying message highlights the important role of teachers' pedagogical and assessment approaches - for example, identifying when DA or specific digital tools are relevant and beneficial to the learning and assessment processes. During dialogue about FA and DFA the stakeholders expressed strongly that the role of the teacher in interactions with students about the learning process and giving feedback was essential. Assessment was recognised as interaction. Stakeholders voiced the need for positive social relations, between teachers and student in DFA, particularly the development of "relationships of trust with students". This highlights the potential social impact of DFA when trusting relationships are experienced in their interactions with teachers.

Digital tools do not determine the assessment process, they are a means to an end, the process is determined by the teaching methodology. What matters the most is not the tool used, but teacher guidance - the role of the teacher is essential.

The process that is carried out is what's most important, not the tool itself.

Before all, assessment is reflection between teacher and student.

The emphasis on the need for a culture shift in assessment approaches was a constant theme arising in the CDLs. Stakeholders argued, "FA is a state of mind." The secondary role of digital approaches and specific digital tools was firmly reiterated by many of the stakeholders in the series of CDLs. The need for a culture shift in assessment included but was not limited to teachers. Stakeholders called for a culture shift in thinking and approaches to assessment



at national, school, parent and student levels from predominantly valuing grade-centred assessment approaches to recognising and valuing formative assessment.

The reliance on national exams runs counter to the implementation of formative assessment.

DFA must be implemented in an environment where there is a corresponding culture, virtually all actors must help in it. Meaning that all educators, principals, and other supervising bodies should help to shape this appropriate environment.

The students were aware and experienced different approaches to assessment and the use of digital tools by teachers. They agreed that teachers have an important role in DA and DFA but recognised that there were differences in teachers' expertise and use of digital tools and of DA and DFA (see Section 5.4). They were aware that not all teachers they interacted with were comfortable using technology. Students also commented that some teachers were limited in their digital skills and did not know how to use the tools. For example, "There is a lack of certain skills with ICT and digital tools for some teachers."

They had different experiences in different subjects. While the students recognised that DA and DFA was not necessarily appropriate for all aspects of learning in all subjects they said, "In some subjects teachers do not use digital tools." The students recognised the importance of the teacher's role in DA and DFA, but they expressed doubt about some teachers' knowledge and understanding of the tools. "Teachers should know the digital tools well to make the most of their use." Similarly, some teachers demonstrated that they were uncertain about what some digital tools could do. They were concerned that digital tools might have negative impacts and uncertain about data protection.

Does the algorithm guide the learners own thinking? How much? Self-direction might suffer from this.

What kind of a tool produces added value?

Have to be very careful with data protection. [...] This is an issue that must be taken into account from educational institutions.

The stakeholders across the countries recognised that there were variations in teachers' knowledge, understanding and use of different assessment approaches and in their digital skills. Some teachers were able to enhance the learning process for students via digital means and have a dual social impact on students' experience in digital spaces. Some students had experienced peer-assessment opportunities set up and valued by some of their teachers but this opportunity was not available to all students. Indeed, opportunities to engage in peer-assessment digitally were seldom mentioned during the dialogue labs. Stakeholder dialogue following the presentation of cross-country feedback at the start of CDL2, showed some were surprised at this lack of comment about peer-assessment across the countries.



This shows that more needs to be done to enable and encourage teachers to provide opportunities for students to engage in peer-assessment.

The sudden need to switch learning, teaching and assessment to a digital context due to COVID-19 pandemic, starkly demonstrated the lack of confidence and digital capabilities of some teachers and students. This restricted what was possible in implementing DA and DFA for some teachers, as well as restricting social interaction between teachers and students in digital learning environments. Uncertainty about what digital tools could do and how they could be used reduced their use and potential to have a social impact on students.

The stakeholders, including students were clear that professional development was urgently needed. Not only development of digital skills but digital pedagogical and assessment knowledge and skills. Stakeholders suggested, “Digital tools have often developed technological capabilities ahead of pedagogics.” The need for professional development in digital pedagogical skills, along with assessment skills was emphasis to contribute to increasing the cognitive and social impact of DFA. This underlined the importance of how teachers interact with students in the giving of feedback to reduce the social and emotional stress of assessment of learning progress.

It is also important for teachers to understand how to give feedback to children in the case of FA, so that the child himself or herself understands what is well, what needs to be improved.

Stakeholders had many suggestions about what professional development was needed and how it should be delivered and by whom. In relation to increasing the social impact on both teachers and students the development of digital learning communities was proposed – “Digital learning communities - collaborative networks for teachers and students.” This suggested that teachers and students could engage in digital learning communities together so everyone could benefit from sharing digital challenges and finding solutions through mutual learning. These indicate understanding of involving students and teachers in joint learning and valuing each other’s strengths and skills. Stakeholder comments show there is growing understanding that students can engage in thinking about the learning and assessment process and ideas can be shared with their teachers who can benefit from their suggestions.

We give the students power and responsibility, to go develop their own assessment system that suits them. Of course, there is a framework in that, that the students cannot skip over the curriculum, but they have to start thinking about how they build such an assessment system that they themselves commit to. Those are but really fun conversations.

Organizing assessment forums and seminars in such a way that expertise from different parties is invited. It is great that also students are involved.



Digital learning communities were also proposed because the stakeholders recognised that one-off professional development sessions were insufficient to develop digital pedagogical and assessment knowledge and understanding. Support and collaboration need to be ongoing as digital innovation is constantly evolving. Student also offered suggestions regarding teacher professional learning, further emphasising the dual impact of social interaction and learning developing through peer learning communities.

...in our school very many teachers feel comfortable and I would suggest that if, as a whole, a large part of the school is willing to use digital tools, then others are encouraged. In addition, support is not just provided by some kind of specialists, but by their fellow teachers. So, I would suggest that, as time goes on, those teachers who know and use digital tools, will be comfortable enough to share pros and experience to others.

However, another student suggested that specific DFA training is also necessary for some teachers commenting, “DFA should be clear and initial digital training should be offered to teachers so that it can be correctly implemented.” Students also recognised that some students needed training to build confidence in the use of digital tools, in their involvement in the learning and assessment process and in social interaction with their teachers and their peers. The student emphasised such training is necessary as “It is important students feel comfortable when using the tool.”

What is clear from the stakeholders is the role of the teacher is central to DA and DFA, but for social impact to be realised both teachers and students need a better understanding of how to build trusting relationships in interaction with one another in assessment processes, and this needs a variety of ongoing professional learning opportunities and a cultural shift toward formative assessment approaches that are enhanced by digital learning and assessment environments.

5.6 Fairness and the powerful narrative of summative assessment.

Other social aspects of assessment that emerged from the data reflected students’ views and opinions about fairness in assessment (how they define this) and how notions of equality tended to be associated with a powerful narrative of the role of summative assessment, its continued dominance as the means by which they are assessed and how it continues to hold more weight in terms of assessing their learning than formative assessment does. These findings are, perhaps, not surprising even though much work has been done over several years in trying to review summative assessment systems and implement programmes of formative assessment at both the school and national level across many jurisdictions. The powerful narrative of summative assessment still pervades notions of what assessment is and what it is for and the students across the five countries within this project reflected its continued pervasiveness.



In relation to fairness, students were aware and concerned about how the new technology interacted with more traditional ways of how assessment is conducted, especially if digital platforms are used for online examinations. There was a sense that students saw online examinations as unfair as teachers are unable to check if students are cheating or using materials to help form their responses or if parents are helping in the background. Such comments suggest that students are not quite sure of a level playing field when examinations are online and are being done at home. Not all students were familiar with online platforms/contexts for formal examinations. While new formats may be being introduced for positive reasons, online assessments and examinations are just as stressful as they need different ways of working (interacting with hardware and software) than paper-based examinations. Also, there are times when responses are timed and do not give students enough time to formulate their response as well as difficulty in typing responses in to a computer. How this was described as a facet of fairness was that some students may be more familiar with these ways of working and doing examinations online than others and this is what is not fair to all students to have only online assessment or examinations. This reflected a wider sense of fairness around having both formative and summative assessment opportunities. Students expressed different preferences for either summative or formative, but they were clear that the best scenario would be for both formative and summative assessment to be part of their assessment systems, as well as a mixture of traditional assessment as well as digital assessment and digital formative assessment.

While students were calling for the equal use of both formative and summative assessment, it was clear from the data that there is a continued prominence of, and reliance on, summative tests and examinations as ways of evaluating student learning. Most students indicated that in their context (country) there are still mostly assessed through the use of examinations. Their concerns about this extended the notions of fairness discussed above in that only being assessed through examinations meant that generally the grades received on these tests were the only evidence taken into account about their learning, but that the grades from examination do not reflect all that they really know.

Students were clear that assessment was needed and necessary and was an integral part of their educational life. They acknowledged that assessment can be a motivator to them; they just want it done fairly and in ways that benefit them:



Teachers put us on the right path in life with assessment.

Yes (assessment is necessary) because it gives motivation to the student. As long as it does not discourage or disappoint the student.

I agree that the teacher needs to assess the students, so he [sic] can see our progress and we can improve. This can help the teacher to improve or modify his teaching.

However, this did not seem to be of comfort to some students who found assessment stressful anyway, even formative assessment. This is an interesting perspective on the impact of formative assessment, in that it can be as stressful for students as summative assessment. It is not that all formative assessment is benign and all summative assessment disruptive to students. All assessment activity (whether formative or summative) has its pressures, it just impacts on students differentially. Such impacts are, in the assessment research literature, acknowledged quite extensively for summative assessment but not so commonly for formative assessment. Overall, there was some agreement that using technology to help improve their experiences of formative assessment, such as direct and timely feedback, would also help in their learning more generally and how they prepare and ultimately take online summative assessments; the outcomes of which tended to have higher stakes for students than formative assessment. Additionally, some students commented they did find formative assessment less stressful than summative assessment and this will be discussed in Section 6 below.

5.7 Whole school policies/protocols

A significant theme to emerge from the data that was not expected given what we know from the literature to date about digital assessment, was a clear call from students that schools should develop, with students, agreed rules and/or protocols about the use of digital assessment and digital tools that would be applied by all teachers in the same way. Students saw digital assessment and digital formative assessment as new practices and ways of operating in schools and they were clear that some rules as to how teachers would use and integrate digital assessment would be really helpful for them so that everyone would be working from the same set of shared frameworks and procedures. This spoke to their experiences as to how they interacted with teachers across the school and the school day and subsequently their experiences of how teachers differentially used/implemented the same software or gave mixed messages about how to use some of the more commonly used platforms that students were used to. One clear message from students was that within these whole school protocols, time should be given over to capacity build, with both students and teachers, about how all the software platforms and/or applications (Apps) work. Students indicated that there were assumptions from staff that students are familiar with



the digital environments required for their learning or assessments but that this is not commonly the case:

One cannot assume students know instantly how to use e.g., Teams, etc. Not all students are proficient with all the apps.

Students were requesting a unification of the use of all the digital tools that were being used by teachers and regular reviews of all the digital activities that were being implemented by schools, that teachers have these tools under control. It would be helpful in a post-pandemic context to take stock of what worked well for students in relation to digital assessment and what could be improved upon, given better knowledge and understanding of how some of the digital platforms work. Thinking about how students might have a more systemic role in creating whole school practices around the use of software and hardware would be a good way to work in partnership with students to achieve positive digital and data sharing environments. This latter point also connects to previous discussions about students' views of digital divides between different cohorts of students. Students were keen that within whole school frameworks, it would be schools' responsibility to take the burden of provision of digital resources, not relying on assumptions of wealth and availability of all requirements being met by families of students:

That I think that in all schools, at least there should be like some equipment on the ground through which children can work, because not everyone has smart phones with them, there are no smart phones at all or parents cannot buy phones for the child. And then these things get worse, like real door doubts. But yes...in addition to what you can use in school, I think you should not buy it.

A theme that was raised in CDL 2 and 3 and the last SDL and that links to the ideas around whole school protocols was how schools use students' data (generally and their assessment data) and how they interact with parents around the assessment data especially. Students indicated that they saw their assessment outcomes as data and were concerned about how schools share and use this data with them and with their parents/guardians,

Occasionally we might be in this grey area regarding data gathering - information is not always necessarily in schools' internal use.

At one particular level, in relation to formative assessment outcomes and feedback, students indicated that often schools tended to share assessment data formally with parents before students themselves have had a chance to discuss the outcomes with their teachers. The digital environment made this easier to do (i.e., share student assessment results with parents) but students felt that this was almost a betrayal of the trust relationship between teachers and students and parents/guardians,

Well, of course, the example is that if it's digital, parents have a lot of access to it and often it happens ... that parents get to it before they talk to their child... as practically everyone has the grades, the thing is that most people don't care what they get, but their parents are not



happy with what they get. And then there is the digital stress, of course, that now you have to call your parents quickly and say, no, I understand things, I learned well. They start to control everything you do and then punish it, because if you say you don't understand it.

Students were concerned that, with all the technology being used, teachers were bypassing them and directly connecting with parents/guardians before they talked with students about their results. There also seemed to be a dissonance between students' use of mobile devices (especially mobile phones) and expectations around digital tools (hardware and software) used within in class for learning purposes and to access whole school virtual learning environments which are repositories for students' individual results but also used to communicate these results with students,

It is not allowed in our school to use phones during the school day, you do not get feedback during the day, and before you talked about whether it would be possible to have it there, that it would be better than still in the middle of the day during the hour, we would get the phones back. But because we are not allowed to use phones and the main feedback comes to the phone, yes we will get to you later.

The move to digital communication and the increased use of digital formative and summative assessment has raised thorny issues of the use of assessment data as well as whose data is collected and how it is shared, with or without students' permissions; current protocols about the use of mobile phones in schools and contradictory messages, as students' see it, of whole-scale adoption of digital forms of learning and communication through mobile devices, but phones especially being treated as 'other types' of devices, i.e. those that can distract or be used for non-school type activities. This all adds to what the above student denotes as digital stress.

5.8 What would students want policy makers/school leaders to know about digital assessment and digital formative assessment

The SDLs were completed with reflective questions for students to consider what they would want to tell policy makers or school leaders about what they thought of their experiences of DA and DFA. Furthermore, they were encouraged to express their views on what adults with responsibility for the implementation of DA and DFA schools should consider. Figure 3 below illustrates some student responses, from across the 5 different countries, to questions about what they would want adults to know and take action on.



- We like DFA because the activities are easier to do and make the learning more effective. In addition, it is very motivating and makes us more aware of what we learn.
- Activities should be adapted to students learning at different paces so that no one is demotivated.
- Teachers should make the most of this remote learning experience so as to use DFA more consistently and a wider variety of assessments at school in the future.
- The digital tools make the lesson more fun and more interesting the teacher can understand the progress or the difficulties of the students and help them.
- There can be so many errors in applications that negative things outgun benefits.
- I would like to tell about benefits: less paper, less books, and negative things/challenges: internet crashing battery life, forgetting passwords.
- Teachers should learn first themselves to use applications.
- The clumsiness of automatic assessment in devices, and that games are not good way to do tests.
- One cannot assume students know instantly how to use e.g., Teams, etc.
- Electronic tests are quite complicated because the system can get stuck.

Figure 3: What students would like policy makers and school leaders to know

Students also suggested that they would like more research and evaluation carried out on DA and DFA to really see what the benefits and challenges are before there is any further large-scale implementation of such policies within schools. From understanding the educational policy landscapes of the 5 countries involved in the study, it is obvious that DA and DFA are important educational priorities for schools. However, students tended to agree that much of the learning as to how DA and DFA is developed in order to be used in schools has tended to come from ad hoc approaches to its implementation and while it is hard to put the ‘genie back in the bottle’ in that we cannot go back and need to keep up the momentum of DA and DFA, it would be good to know more about what the benefits are and how successful it can be. The data indicated that there were still those who doubted the efficacy of the scale of digital transformation, and much more was needed to be understood. They were also very certain that they had something to offer the process of development and implementation with policy makers and school leaders; that DA and DFA should be developed with them and not necessarily for them without their input. The findings from this research indicate that a partnership approach, including students and teachers in dialogue about assessment issues and practices, has the powerful capacity to change practice and to change the internal cultures of school. Such partnerships can lead to a reviewing of who is authoritative about assessment and a sharing of understandings that can promote trust and better practice between students and teachers alike.



In the final reflective question asked students what they thought of the dialogue process and being part of a dialogue with their peers. Figure 4 below illustrates some of their comments on this reflective question. What was evident was that students really appreciated being heard, not only by the facilitators of the dialogue labs but also by Ministry of Education staff.

- Today I liked the fact that the students were given a voice and that we were taken into account and different opinions were heard.
- What I liked about today is that I learned about other opinions, and I was able to express mine as well.
- What I liked was basically the fact that you care about our opinion.
- What I liked most was putting forward ideas with the intention of improving something, and although it may not change for us, it could for the rest of the younger people.
- It seemed very nice and interesting to me, and I had not participated in something like that before, the three hours seemed like 10 minutes. I listened to the views of other children and got an overview of how the education/learning could be made better. Although at first I was anxious, then I calmed down.
- I liked it very much because I freely expressed my opinion. I listened to the views of other students, and we all discussed together to find a common solution to our problems. I would very much like to participate in the next ones, thank you very much.

Figure 4: What students thought about the SDLs

Through the Dialogue Lab process, students appreciated being asked what they thought, they appreciated being talked too and with, and they also liked the way they could talk with their peers and they liked that they could hear the views of other students, and that adults other than their teachers were listening to what they had to say. In the last dialogue lab, students expressed a preference for being able to have both within and across country dialogue labs for students. Finally, they were keen to extend the process and the experience to engage with students from across Europe (if possible) as they really appreciated the feedback from the 1st dialogue lab and the country dialogue labs that showed views and opinions from students across the 5 countries that were aligned and similar in the issues that were raised by students.



6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Benefits of Digital Assessment and Digital Formative Assessment

In summing up the benefits of DA and DFA identified by students three main points emerged. First, that DFA can make the learning process visible to students. They commented, “The best contribution DFA makes is when the student becomes aware of their own learning and strengths and things that they can then develop.” Once the learning process becomes more visible to students they can feel more in control of their own learning and build more confidence in understanding what to do next. Second, that DFA can reduce student assessment stress. They said, “DFA versus summative can reduce stress experienced” and “Digital approaches, for some students, can be more relatable and not so serious.” The reduction in stress can make learning more enjoyable for students and increase their motivation to engage in learning, with their teachers and with their peers - “DFA improves interaction between students and teachers, gives enjoyment of digital devices and more immediate feedback from teachers.” Third, students demonstrated their commitment to social and environmental issues by recognising the potential benefits of DA and DFA for the environment, commenting, “No paper is wasted, it is easier and more interesting to use mobile phones instead of paper.”

6.2 Limitations of Digital Assessment and Digital Formative Assessment

Similarly, in summing up the limitations three main points emerged. First, there is lack of clarity about the meaning of DA, FA and DFA. Students emphasised, “DFA needs to be more understandable and discussed with students about how and why digital applications are being used.” Second, some students mistrust digital tools, not only the tools themselves but also what data is stored about the students, where it is stored and how it is used by commercial companies. Some students are also unsure whether data is being used by teachers and the school to make assessment judgements about their progress. Additionally, for some students they have concerns about what digital data is being passed onto their parents or guardians. The students increasingly recognised, “Use of commercial tools can generate privacy problems” and “In terms of a digital footprint, any tool that students use leaves a trace.” Third, the students want greater involvement in discussion about assessment. They said they wished that their teachers would listen to their views more often about DA and DFA as they could offer views and feedback about their lived experiences. Policy makers, teachers and the schools could learn from this student feedback. They were



particularly aware of the challenges some of their peers were facing who did not have access to digital devices and were consequently limited in engaging in DA and DFA. Student comment included, “Regarding the digital divide, students agree that students with less digital competence may be affected adversely when using these tools. For example, when they are asked to work on their own, the lack of digital competence can generate a negative sentiment.” The CDL stakeholders highlighted how they had benefitted from hearing the students’ perspectives on DA, FA and DFA. This underlines the value contribution that students can make to understanding of DA and DFA and their potential contribution to policy development.

6.3 Change of assessment culture

The assessment field has, for many years, now seen the advancement of formative assessment as a practice for good. A focus on more formative aspects of assessment practice in classrooms to effect positive and sustainable change, started at a local level then moved to a global response by researchers to influence governments: their aim to seek more formative assessment opportunities at the system level to instigate change and improve teachers’ assessment practices. Florez-Petour (2015: 3) indeed suggests that the global movement to embrace formative assessment more systematically has emerged like a ‘research pandemic’ where many governments have embraced formative assessment programmes into national policies and frameworks but with limited success. Lessons from the formative assessment movement will be pertinent to any large-scale reform into digital assessment and/or digital formative assessment. Large scale reform of assessment within any educational system that will then be used to assess students’ learning needs a shift in thinking to an acceptance of different ways of working and doing that will make it successful.

What has emerged from our data from the SDLs and CDLs is a clear sense that the implementation of DA and DFA is nowhere near the same stage or phase as any parallel formative assessment programmes that exist. This is perhaps not surprising, as it is still early days yet in the digital contexts of classrooms with the gaps that exist between what is digitally possible and what is feasible and affordable within schools and national educational settings. To fully realise the benefits of FA, and DFA and to make both work for students, the data shows that there has to be a dramatic shift in ‘culture’ about formative assessment approaches generally and DA and DFA specifically, what they are and what potential they hold. Such shifts in culture are necessary to embrace the possibilities of digital resources more systematically and see investment in it both to support its infrastructure but also its use within pedagogy and assessment more generally.

Black (2015) warns us well, when he reflects on the impact of formative assessment programmes globally and suggests that the successes of such programmes have been only partial. This is a key lesson for educational policy makers and school leaders as well as teachers to heed; the continued presence of summative assessment systems will continue to



dominate schools and schooling if they are seen as the main drivers for the evaluation of students' learning with implications for the social impact on students. Any formative aspects of assessment systems will continue to have only partial success in improving students' understandings of their own learning if they remain in the shadow of more powerful summative systems. The data from Assess@Learning shows that we may well fall into this same trap for digital assessment, whether it be summative (e.g., online tests) or formative (the use of digital tools and practices in classrooms). Moreover, the data from students shows us that the old dichotomy of formative vs. summative assessment is still prevalent and evident within DA and DFA. Again Black (2015) has warned us that this dichotomy has never been helpful; it sets up a false separation of assessment policy and practice that is not useful or beneficial to students. Assessment, whether digital or not, needs to always be fit for purpose and that should allow for the integration of summative and formative (digital) assessment where and when these forms of assessment are necessary. Students reminded us that not all assessment has to be digital and that not all assessment has to be formative or summative; we need to consider their learning needs and have the assessment activities and programmes available that best serve these needs while taking advantage of all the progress in digital assessment that is available, but not to the total exclusion of non-digital formats.

6.4 Involving students in policy experimentation

This research project took seriously, from the design stage, the involvement of students in the policy experimentation. This was a unique facet of the study; one that brought to policy experimentation in the assessment field the systematic input of young people in to our understandings of the effectiveness of digital assessment and digital formative assessment.

The policy arenas of assessment may be the last bastions of the field of educational policy formation that includes students in deliberations and consultations as a matter of course. Areas of schooling and education that students, from other research, have called 'higher-level' areas (Elwood, 2012) such as curriculum design, school improvement and national assessment implementation, seem to remain areas of exclusion for students' voices and input with assessment agencies and ministries of education loath to give over authority to students about assessment policy formation and implementation. Like the formative assessment movement there has been a huge drive globally to include young people in all aspects of social policy formation that impacts on them directly. Indeed, for example, the European Commission itself is a prime example of a pan-national organisation adopting practices and procedures from a children's rights perspective around social policy formation and systematically includes young people in deliberations on what is best for them. It is still surprising therefore, that those responsible for education policies generally, and educational assessment policies specifically, are less likely to include young people as a matter of course. There is still a reluctance by assessment professionals or policy makers to share ownership



of assessment matters with students and to include them as equal stakeholders in assessment policy formation, especially at the national level.

Young people have a vested interest in contributing to assessment policy development, and as this study has shown, they want to be involved in those conversations and cannot understand why they are not. They are also clear that any conversations about assessment change or reform should involve students of all ages. Working with students across the secondary sector, and even across the primary sector, and giving them opportunities to affect change that will impact on them in the long term will enhance both their understandings of what is happening to them, as well as create opportunities for them to engage with decisions that have long term significance for them. This research has shown clearly that students have a lot to say, they have constructive and good things to say, and a clear investment in how educational policy is ultimately decided upon and implemented for their benefit. Thus, we are calling as part of this research to actively include students in any consultations and or partnerships that are created to enact (digital) assessment policy reform across Europe. The dialogue approach can be one practical way of operationalising student involvement in these policy discussions that creates space for them to interact with each other, hear what their peers have to say and work through plans and expectations for positive reform.

6.5 Capacity building for teachers and students

A key overall message from this research was the importance of capacity building about digital assessment and digital formative assessment. The data collection through the CDLs and the SDLs for this study was carried in the context of the global pandemic when assessment systems and practices world-wide were hugely disrupted. Schools and schooling systems within the Assess@Learning had, like those globally, been thrown into contexts of remote learning with access to both hardware and software for both teachers and students being of paramount importance. In this study we had a unique window, from students' perspectives, into how the digital aspects of learning, teaching and assessment were carried out and how students experienced this both from a totally remote context (being locked-down at home) and to semi-hybrid contexts (partially working from home and partially back in school). As we have shown in previous sections, one of the main issues to arise for both students and teachers was their own capacities and capabilities in the use of digital resources; in the use of hardware such as PCs, laptops, Padlets, mobile phones, etc. as well as software such as virtual learning environments, educational websites and platforms, streaming software for virtual classrooms, mobile applications, etc. While use of these platforms and applications had become more popular in schools in recent times, the pandemic sent the use of these applications into overdrive. The Assess@Learning study then had a unique opportunity to discuss digital assessment and digital formative assessment with young people and adults at a time when they had to use it more out of necessity than



choice. We were able to capture at first hand the impact that a lack of capacity in digital ways of working had on their experiences.

In considering the social impact of DA and DFA on students, the data from Assess@Learning tells us emphatically that any further implementation of digital assessment and/or digital formative assessment within educational systems, classrooms and schools needs to have associated capacity building programmes for both teachers and students. With teachers, capacity building needs to focus on the pedagogical aspects of digital assessment and digital formative assessment, whereas students need to be supported in the learning aspects of digital assessment and digital formative assessment. However, the data has also strongly indicated that you need capacity building to happen with both students and teachers in partnership - that there needs to be dialogue between both teachers and students to maximise the benefits of what digital assessment can offer. Teachers and students said that capacity building in DA and DFA should be through communities of learning, involving both teachers and students. Making sure that both teachers and students are familiar and aware of all the hardware and software resources, that both are supported in the use of any software platforms that are available and promoted within schools. As the students told us, not to assume that all students and teachers know what is going on and how to use the digital tools and resources that are available effectively across all subjects and/or all contexts.

6.6 Recommendations

Below we identify the 6 key recommendations that emerged from the data:

- Active participation of student in policy development early in process.
- Develop a culture shift away from grade-centric assessment approaches towards formative assessment to better enable a culture shift to DA and DFA.
- Capacity build with teachers, parents and students in formative assessment approaches through dialogue.
- Capacity build with teachers and students in DA and DFA through ongoing support and communities of learning
- Develop whole school protocols generated through dialogue, involving school leaders, teachers and students to enable collective understanding of digital assessment practices.
- Develop school-based frameworks for student data, including setting out clearly how it is gathered, used, shared and stored.



7. REFERENCES

- Arnott, M. (2008). Public policy, governance and participation in the UK: A space for children? *The International Journal of Children's Rights*, 16, 355–367.
- Ball S., Maguire M., Braun A. (2012). *How schools do policy: policy enactments in secondary schools*, London: Routledge.
- Ball S, J. and Bowe, R. (2020). The Neoliberalization of the State, the Processes of 'Fragmentation', and Research Implications of the New Political Terrain of English Schooling, in A. Brown and E. Wisby, (2020). (Eds.) *Knowledge, Policy and Practice in Education and the Struggle for Social Justice: Essays Inspired by the Work of Geoff Whitty*, London: UCL Press, pp. 97-114.
- Banks, J., & Smyth, E. (2015). 'Your whole life depends on it': Academic stress and high stakes testing in Ireland. *Journal of Youth Studies*, 18, 598–616.
- Black, P. (2015). Formative assessment – an optimistic but incomplete vision, *Assessment in Education: Principles, Policy & Practice*, 22:1, 161-177.
- Braun, V, and Clarke, V. (2019). Thematic analysis, *Handbook of Research Methods in Health Social Sciences*. Springer, pp. 843–860.
- Cook-Sather, A. (2002). Authorizing student perspectives: Toward trust, dialogue, and change in education, *Educational Researcher*, 31:4, 3-14.
- Elwood, J. (2012). Qualifications, examinations and assessment: views and perspectives of students in the 14-19 phase on policy and practice, *Cambridge Journal of Education*, 42:4, 497-512.
- Elwood, J. and Hanna, A. (2023). Assessment Reform and Students' Voices, in Tierney, R.J., Rizvi, F and Erkican, K (2023). (Eds. In Chief) *International Encyclopaedia of Education*, 4th Edition, ScienceDirect p.119-128.
- Elwood, J., Hopfenback, T. & Baird, J. (2017). Predictability in high-stakes examinations: students' perspectives on a perennial assessment dilemma, *Research Papers in Education*. 32:1, 17 p.
- Elwood, J. and Lundy, L. (2010). Revisioning assessment through a children's rights approach: implications for policy, process and practice, *Research Papers in Education*, 25:3, 335-353.
- European Schoolnet (2017) TeachUP: Teacher Upskilling Policy experimentation project. <http://teachup.eun.org>



Flórez-Petour, M.T. (2015). Systems, ideologies and history: a three-dimensional absence in the study of assessment reform processes, *Assessment in Education: Principles, Policy & Practice*, 22:1, 3-26.

Lingard, B. Martino, W. Rezai-Rashti, G. and Sellar S. (2016). *Globalising Educational Accountabilities*, Abingdon, Oxon: Routledge.

Livingston, K. (2017). *TeachUP: Guidelines for Country Dialogue Labs* (1st ed.). Brussels: European Schoolnet.
http://teachup.eun.org/documents/556205/1092039/TeachUP_D1.4_Guidelines-Country-Dialogue-Labs.pdf/deef1d1f-de82-4f70-a28e-b43248ab7588

Livingston, K. (2018). *TeachUP: Guidelines for Country Dialogue Labs* (2nd ed.). Brussels: European Schoolnet.

http://teachup.eun.org/documents/556205/5084344/TeachUP_Guidelines-Country-Dialogue-Labs_2nd-edition_public/b7ba15cd-4c0c-4273-a879-f3706d7dca6c

Livingston, K. (2019). *TeachUP: Guidelines for Country Dialogue Labs* (3rd ed.). Brussels: European Schoolnet.

http://teachup.eun.org/documents/556205/5084344/TeachUP_Guidelines-Country-Dialogue-Labs_3rd-edition/a3bf3c70-b54a-42eb-9e5a-e871c9c896a1

Livingston, K. (2020). *TeachUP, Final Cross-Country Dialogue Lab Report*, Brussels: European Schoolnet. <http://teachup.eun.org/documents/556205/5084344/Cross-Country-Dialogue-Lab-Report/49f4ffef-29dc-42f8-a1b1-94bd58ac6fd2>

Looney, J., O'Shea, M., Staring, F., Vicentini, L., Wiśniewski, J. Frøhlich Hougaard, K. & Day, L. (2022). *Key competences for all: Policy design and implementation in European school education*. Brussels: European Commission.

Looney, J. (2019). *Assess@Learning Literature Review*, Brussels: European Schoolnet.

Lundy, L. (2007). 'Voice' is not enough: conceptualising Article 12 of the United Nations Convention on the Rights of the Child, *British Educational Research Journal*, 33:6, 927-942.

Ozga, J. (2000). *Policy Research in Educational Settings: contested terrain*, Buckingham, UK: Open University Press.

Tisdall, E. (2008). Is the honeymoon over? children and young people's participation in public decision-making. *The International Journal of Children's Rights*, 16, 419-429.

Viennet, R., & Pont, B. (2017). *Education Policy Implementation: A Literature Review and Proposed Framework*, OECD Education Working Paper No. 162. EDU/WKP(2017)11.
https://www.oecd-ilibrary.org/education/education-policy-implementation_fc467a64-en



Vygotsky, L.S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.

Wenger, E. (1998). *Communities of practice: learning, meaning, and identity*. Cambridge University Press.



University
of Glasgow



QUEEN'S
UNIVERSITY
BELFAST



assess@learning



Co-funded by the
Erasmus+ Programme
of the European Union

The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.