

**Research Review:**

Effective Pedagogies for a Redeveloped Primary School Curriculum

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**Please Note:**

This report is intended to inform NCCA's policy development processes. Please consult the author before potentially releasing this report (or any portion) to stakeholder groups outside of the NCCA.

## **Executive Summary**

This review operationally defined effective pedagogy as instructional techniques and strategies that enable 21<sup>st</sup> century learning such as creativity, critical thinking, problem-solving, collaboration, and digital literacy to take place. Each of the twenty-first century skills noted above is widely supported by the available literature and intersects with core values and philosophies that characterise the Irish context such as democracy, equity, inclusion, child agency, and active participation. This review also noted the corresponding roles that assessment and professional development, for both preservice and in-service teachers, will play in the long-term success and sustainability of the redeveloped curriculum. It was noted that significant time and resources will be required to help aspiring, new, and veteran teachers navigate the paradigm shift associated with an orientation to twenty-first century competencies. Lastly, no specific set of pedagogical strategies were proposed as such a list could ultimately undermine teachers' own efforts at being creative in their classrooms. Additionally, the research literature underscores the necessity of a flexible approach to pedagogy which recognises the differences that exist across classrooms, schools, districts, regions, and national contexts. Rather, the sociocultural perspective, which aligns with the development of twenty-first century competencies noted above, was offered as an overarching orientation to help guide the redevelopment process and corresponding professional development efforts.

## **Preamble**

The National Council for Curriculum and Assessment (NCCA) was tasked with redeveloping the primary school curriculum. In a rapidly changing educational landscape, the NCCA is now consulting, researching and deliberating on how a redeveloped curriculum can best respond to and support teachers' practices to an extent that the Primary School Curriculum (1999) when published at the end of the last century was not expected to do.

The first phase of this redevelopment work considered the curriculum structure and how time is allocated across it. The key messages from this phase together with previous work by the NCCA, such as the identification of priorities for a primary curriculum (NCCA, 2012) and an extensive body of research, will now shape the overview of a redeveloped primary curriculum. The second phase of curriculum redevelopment work includes the task of authoring a new draft overview / Introduction to the curriculum. This draft iteration will then be the focus of public consultation in 2019.

In developing a new draft overview / Introduction to the curriculum; the pedagogies and meta-practices that underpin the revisions need to be clearly expressed and indeed fore fronted. NCCA need to consider the innovative pedagogies that will allow children to thrive in an increasingly complex society. 'Pedagogy' expresses the contingent relationship between teaching and learning... and does not treat teaching as something that can be considered separately from an understanding of how learners learn' (James & Pollard, 2011). Therefore, the synergetic expression of pedagogy and content within the curriculum will inform all change.

Particular pedagogies may be much more appropriate than others for particular types of knowledge and competence areas, or for inter-disciplinary learning. NCCA is thus looking to bring together insights and research evidence regarding pedagogies for subject areas or competence sets.

Asking what learning is for, what is worth learning, and which pedagogies are most powerful to promote such learning typifies approaches often termed "innovative". Considering the pedagogical thrust of the Primary School Curriculum (1999) and current reported practices in schools; a focus on pedagogical combinations should offer a fruitful way to understand how established pedagogical approaches and newer more effective pedagogies can be brought together to create effective learning conditions in a redesigned primary curriculum.

We do, however, want to go beyond an explanation of the effective pedagogies themselves to ask how they can best be introduced, developed and sustained in the Irish primary school context. In the design process, we can ask what is needed within schools. Closely allied to pedagogy is the role of assessment and the interest it can play in supporting learning. The concept of formative assessment has developed in recent years and question 4 noted below relates specifically to assessment and its wider perspective on classroom practice. Assessment should be part of each stage of the teaching-learning process so ideally this question should be addressed through the responses to other questions.

In an incremental curriculum structure, should there be a foregrounding of particular pedagogies as children move from one stage to the next, or is it more beneficial if the same overarching pedagogies / meta principals are fundamental throughout a children's primary school experience?

As children progress through primary school, should there be opportunities for them to become more autonomous, specialised or flexible in the ways they demonstrate competencies.

There is widespread recognition of the importance of context and how this impacts on the appropriateness of particular pedagogies. Please consider how particular pedagogical approaches and innovations might respond to particular contextual circumstances, for example high pupil teacher ratios, multi-grade classes and the inclusion of children with very diverse needs. Do particular innovations, for instance, assume high levels of existing understanding from teachers or other organisational features that might not be facilitated in our current system?

## Overarching Questions

Questions guiding the substance and organisational structure of the present review:

1. Define pedagogy and identify specific characteristics that make certain pedagogies effective.
2. What types of effective pedagogy should a primary curriculum aim to inspire in order to enable children to develop processes like creativity, critical thinking, problem-solving, collaboration, and digital literacy?
  - Identify and describe overarching pedagogies to/that support successful learning?
  - Do they feature explicitly and is a particular approach especially effective in developing one or more of these processes?
3. Which types of effective pedagogy endorse the view of education expressed through our values and philosophies? (Democracy, equity, inclusion, child agency, active participation, etc.)
4. How is assessment used in combination with teaching? Who uses the assessment information and for what purpose?
5. How do effective pedagogies impact on individual schools?
  - What kinds of professional knowledge, strategies and skills are required by teachers and school leaders?
  - What are the main implications for teachers and school leaders in the introduction and enactment of effective pedagogies?
6. How should curriculum design and development help to embed effective pedagogies?
  - Should (and if so how can) pedagogical content knowledge (curriculum area / subject specific knowledge) be a consideration of curriculum design and development?

### **Pedagogy: Definitions, Characteristics, & Effective Features**

Extensive pedagogical knowledge, problem solving strategies, adaptations for diverse learners, decision making, perception of classroom events, sensitivity to context, and respect for students, are all highlighted in the international literature as features that characterise expert teachers (Organisation for Economic Cooperation and Development, n.d.). Perhaps most encouraging is that unlike many ‘out-of-school’ characteristics that influence student learning and achievement (i.e., socio-economic status, gender, immigrant status, etc.), the promotion of effective pedagogies and orientations to teaching such as those noted above, can be directly influenced by mandated education policies and curricular frameworks (Volante, 2016). Thus, national governments, have the opportunity through the promotion of evidenced-based policies and associated best practices, to significantly improve the learning outcomes of their primary school-aged students, which is widely recognised as a critical developmental period for future academic success (see Alexander, 2001; Blomeke, Suhl, & Kaiser, 2011; Siraj-Blatchford, Shepard, Melhuish, Taggart, Sammons, Sylva, 2011). However, the latter is a daunting challenge as our rapidly changing world necessitates the teaching and learning of twenty-first century skills which often conflict with embedded teaching practices and curriculum structures within contemporary schools. This review underscores some of the curricular, assessment, and teacher education / professional development considerations that are relevant for large-scale redevelopment efforts within the Republic of Ireland. The present review also seeks to summarise some of the more prominent trends noted in the international literature to help inform revisions and contribute to the long-term success and sustainability of the redeveloped curriculum.

Policymakers, academics, administrators, and teachers around the world tend to hold slightly different conceptions of effective teaching and pedagogy which is reflected in the structure and organisation of national curricula, assessment, and approaches to teacher education. Despite these international differences, pedagogy can be broadly conceptualised as instructional techniques and strategies that enable learning to take place (see Siraj, Taggart, Melhuish, Sammons, & Sylva, 2014). Similarly, 21<sup>st</sup> century skills are often discussed in relation to key competencies such as creativity, critical thinking, problem-solving, collaboration, and digital literacy (Organisation for Economic Cooperation and Development, n.d.; Scott, 2015a, 2015b, 2015c). Thus, when considered together, a suitable working definition for effective pedagogy, given the demands of contemporary society, could be “instructional techniques and strategies that enable 21<sup>st</sup> century learning such as creativity, critical thinking, problem-solving, collaboration, and digital literacy to take place”. It is important to acknowledge that many large-scale reviews underscore the importance of additional twenty-first century competencies such as leadership, global citizenship, adaptability, innovation and communication – which were not explicitly noted above.

Nevertheless, the proposed working definition allows the incorporation of additional competencies, including outcomes related to specific curricular areas, while also focusing the reader on those which appear to be the most prominent at the time of this review for primary school-aged children. NCCA may wish to use the proposed working definition as a *flexible* conceptual lens when deliberating the inclusion (or exclusion) of specific elements of the redeveloped primary curriculum.

Given the plethora of existing and emergent pedagogical approaches, many of which have not been systematically researched or evaluated, I am reluctant to offer a discrete list of pedagogical

strategies or teaching methods that should ultimately guide the redevelopment of the primary curriculum. Such a list would likely undermine teachers own efforts to be creative within their classrooms and potentially lead to hierarchy of subject knowledge and/or formulaic approaches to teaching and learning. Additionally, the research literature underscores the necessity of a flexible approach to pedagogy which recognises the differences that exist across curricular areas, classrooms, schools, districts, regions, and national contexts. Indeed, the utility and expression of specific pedagogical strategies are undoubtedly influenced by all of these contextual features.

The literature is replete with citations underscoring the importance of general approaches such as play-based learning, inquiry-based learning, and/or cooperative learning in primary classroom settings (see Bruner, 2006; Hunter & Walsh, 2014; Martlew, Stephen, & Ellis, 2011; McGuinness, Sproule, Bojke, Trew, & Walsh, 2014; Tolmie, Topping, Christie, Donaldson, Howe, Jessiman, Livingston, & Thurston, 2010; van Uum, Verhoeff, & Peeters, 2016; Walsh, Sproule, McGuinness, & Trew, 2011). It is worth noting that these approaches are not mutually exclusive – rather they intersect and align with each other in both theory and practice. Play which “develops the foundation of intellectual, social, physical, and emotional skills necessary for success in school and in life” (Canadian Council on Learning, 2006, p. 2) can take various forms such as solitary play, parallel play, cooperative play, or constructive play, to name only a few. However, it is the adoption of an inquiry stance within play-based learning approaches – namely, questioning and pondering solutions to novel problems with children – which is particularly important for supporting twenty-first century competencies. Thus, play-based learning that focuses on student inquiry, often through cooperative learning strategies (i.e., think-pair-share, jigsaw, gallery wall, four-corners, etc.), is a desirable orientation for primary educators. It is

important to remember that inquiry “requires more than simply answering questions or getting a right answer. It espouses investigation, exploration, search, quest, research, pursuit, and study. It is enhanced by involvement with a community of learners, each learning from the other in social interaction.” (Kuklthau, Maniotes & Caspari, 2007, p. 2).

In general, the current literature tends to underscore sociocultural orientations to primary teaching which view learning as a social process where interaction amongst peers and the teacher-student dyad plays a fundamental role in student development. General alignment with the sociocultural/social constructivist perspective also provides a degree of conceptual clarity around desirable pedagogical strategies for consideration in primary settings. However, it is important to recognise that the enactment of pedagogical approaches is rarely, if ever, a neutral process. Rather, the father of sociocultural theory, Vygotsky astutely noted that pedagogy has always adopted a particular social pattern in accordance with the dominant social class that has guided its interests (Adams, 2011). Thus, the challenge for the current redevelopment process is to provide enough flexibility (and safeguards) so that pedagogy is not conceptualised or promoted in rigid ways that privilege a select group of students or educators.

### **Pedagogy for Twenty-First Century Learning**

As previously noted, the proposed definition for pedagogy underscores the importance of creativity, critical thinking, problem-solving, collaboration, and digital literacy for contemporary primary classroom settings. It is worth noting that extensive support for each of these competencies is provided in the international literature along with considerations that influence

the expression of these learning dispositions and skills. For example, Craft, Cremin, Hay, and Clack's (2014) research of English schools, which were recognised for their creative approaches, underscored the importance of the high value these schools placed on children's agency, creative engagement through integrated themes, and the flexible use of time. These findings align with other studies which suggest a robust relationship between teaching for creativity and teaching creatively (see Cremin, Burnard, & Craft, 2006; Warhurst, Crawford, Ireland, Neale, Pickering, Rathmell, Watson, & Ewing, 2010; Wegerif, 2010). In general, the literature stresses the importance of divergent thinking and the ability to offer new ideas, pose unfamiliar questions, and arrive at novel solutions, as hallmarks of creativity.

It is important to recognise that many teachers often embrace an authoritative stance that runs contrary to the promotion of creativity in schools. Indeed, a dichotomy often exists between a teacher who demonstrates knowledge and control to one who is a facilitator that promotes student voice and creates space for learners to make their own decisions (Colcott, Russell, & Skouteris, 2009; Harwood, 2001; Lin, 2014; Macleod & Golby, 2003; Munns, 2007; O'Neill, 2013; Segal, Pollak, & Lefstein, 2017; Susinos & Haya, 2014). Thus, it seems clear that more flexible and democratic primary classroom settings are essential for the development and expression of creativity within primary classrooms. Not surprisingly, both pre-service teacher education and in-service teacher development will be instrumental in moving a critical mass of teachers along this continuum within the Republic of Ireland and elsewhere around the world.

Twenty-first century competencies such as critical thinking and problem-solving are often discussed in parallel, and sometimes interchangeably, within the international literature. One large-scale United Nations Educational Scientific and Cultural Organisation (UNESCO) review

defined critical thinking as the ability to assess, analyse, and synthesize information and problem-solving as the ability to search for, select, evaluate, interpret information, and organize and weigh alternatives (Scott, 2015b). Interestingly, collaboration is often viewed as means to promote critical thinking and problem-solving in contemporary schools. Research has noted the importance of effective group work, and by extension collaboration, to fostering critical thinking and problem-solving skills in primary school children (see Al-Washmi, Baines, Organ, Hopkins, & Blanchfield, 2014; Fung, 2014; Lee, Chow, Button, & Tan, 2017). However, it would be a mistake to assume that primary teachers who frequently utilise group work in their classrooms will automatically promote critical thinking and/or problem-solving. Indeed, research suggests that teachers often do not think strategically about the size and composition of groupings in relation to the tasks assigned (Kutnick, Blatchford, & Baines, 2002). Thus, more careful consideration and direction may need to be provided to aspiring, new, and veteran teachers for the development of collaboration and teamwork within schools. Similarly, the redeveloped curriculum will need to provide direction – through the articulation of overall curriculum expectations – to assist teachers in the effective use of collaborative learning.

Given the prominence of Information Communication Technology (ICT) in contemporary society, it is not surprising that digital literacy is perhaps the most widely researched twenty-first century competency in the literature. In general, the international literature suggests that when used appropriately, teachers have the potential to use a wide range of new technologies to increase student engagement and learning within primary classrooms (see Beauchamp, 2011; Dezuanni, 2015; Edwards-Groves, 2012; Kontovourki, Garouffallou, Ivarsson, Klein, Korkeamaki, Koutsomiha, Marci-Boehncke, Tafa, & Virkus, 2017; Li, Chu, & Ki, 2014; Stepic, 2013; Tay, Lim, Lim, & Koh, 2012). Similarly, Game-Based Learning (GBL), which shares

many features with digital literacy, is increasingly being promoted as a way to support learning across a variety of curriculum domains (see Gupta, 2012; Hainey, Connolly, Boyle, Azadegan, Wilson, Razak, & Gray, 2014; Miller, Robertson, Hudson, & Shimi, 2012). It is worth noting that in the vast majority of studies, the development of digital literacy, is significantly influenced by the training and pedagogical approaches of new and/or experienced teachers (see Loveless, Burton, & Turvey, 2006; Roig-Vila, Mengual-Andres, & Quinto-Medrano, 2015). Similar to the other noted twenty-first century competencies, specific curricular expectations will need to be generated that underscore the importance of digital literacy, as well as key considerations that impact their utilisation across diverse school contexts.

### **The Intersection of Effective Pedagogy with Irish Values & Philosophies**

Democracy, equity, inclusion, child agency, and active participation represent key values and philosophies that characterise the Irish context. These values intersect with the working definition for effective pedagogy previously noted. Nevertheless, current reform efforts will need to provide safeguards so that the expression of competencies such as creativity, critical thinking, problem-solving, collaboration, and digital literacy include *all* segments of the Irish student population. At the outset it will be important for schools to (re)establish cultures which minimise assumptions of difference and which give rise to genuinely inclusive pedagogical practices as well as high expectations for all students (Fenwick & Cooper, 2012; Wilde & Avramidis, 2011). The latter has traditionally been a problematic feature for lower socio-economic status (SES) and immigrant student groups who often demonstrate a performance disadvantage across a range of Western nations (see Volante, Klinger, & Bilgili, in press). Hence, the infusion of intercultural pedagogical approaches that stress social inclusion and child-centered teaching methods should

be a critical component of the revised curriculum and associated professional development initiatives (Hopping & Buker, 2014; Jaatinen, 2015).

In order to promote active participation, cognitive space and physical resources are required for both teachers and students. For example, the literature suggests that teachers require empowerment and a degree of autonomy to be sensitive to the needs of children (Allison, 2010). Too often the expression of standards-based reforms around the world have led to a narrowing of the curriculum and restricted range of pedagogical strategies (Volante, 2012). Not surprisingly, assessment frameworks – an area I return to shortly – will be a critical dimension to the overall success of the redeveloped curriculum. Similarly, given that our rapidly changing digital world has led to a reconceptualisation of what it means to be literate (AERA, 2017, Berger & Zezulkova, 2018; Comber & Nixon, 2008), the redeveloped curriculum will need to highlight the growing importance of multiliteracy skills (Anstey & Bull, 2006; Burnett, Davies, Merchant, & Rowsell, 2014; Cummins, 2009; Kosnik, Rowsell, Williamson, Simon, & Beck, 2013; Unsworth, 2001). Schools will also need to provide additional resources so that lower SES student groups and other minority groups are not left behind. In many respects, inclusive pedagogical practices which permit the active participation of all children, will undoubtedly require provisions within the curriculum and funding for additional professional development opportunities.

### **Promoting Synergy between Assessment and Teaching**

In order to teach effectively, teachers need to know what students understand, determine appropriate learning goals that are developmentally appropriate, and be able to construct and utilise a variety of assessments to guide their instruction and evaluate student progress.

Unfortunately, often too much attention is given to student evaluation which is evidenced by an

over-emphasis on assessment *of* learning (summative assessment) strategies. The latter is in direct contrast to the international literature which suggests the consistent utilisation of assessment *for* learning (formative assessment) holds the most promise for improving student learning and achievement (see Birenbaum, DeLuca, Earl, Heritage, Klenowski, Looney, Smith, Timperley, Volante, & Wyatt-Smith, 2015; Black, Harrison, Lee, Marshall, & Wiliam, 2003; Hattie, 2008). Given the increasing focus on standards-based reforms, finding the proper balance between the various phases of assessment is particularly challenging within contemporary school settings – no doubt the Republic of Ireland is not immune to these persistent tensions (Fleer, 2015; Harlen & Gardner, 2010; Volante, 2010; Volante & Beckett, 2011). Thus, it will be essential to foreground the formative purposes of assessment in the redeveloped primary curriculum so that assessment is primarily conceptualised as a means to inform instruction and student learning versus the traditional focus on student performance. It is fair to assert that a large measure of success for the redeveloped curriculum will be contingent on the synergy (or lack thereof) between the various phases and purposes of assessment within Irish school settings. Fortunately, assessment literacy – an understanding of the principles and practices of sound assessment – can be significantly enhanced through targeted and sustained capacity-building efforts (see Klinger, Volante, & DeLuca, 2012; DeLuca & Volante, 2016; Wiliam, 2007).

Another important assessment consideration is the relationship between student reporting and the development of twenty-first century skills. For example, it is customary to report student achievement around the world in relation to grades, percentages, and/or levels – often divided by specific curriculum domains such as language, mathematics, science, social science, physical education, arts, etc. However, this traditional approach often lacks explicit reference to learning skills and dispositions that are increasingly viewed as essential for children, youth, and adults

hoping to find a place in contemporary society. The Republic of Ireland may want to consider providing structured feedback to students and parents in relation to specific twenty-first century competencies such as those previously noted. Similar to Ontario, Canada these learning skills would precede achievement feedback on student report cards – thus underscoring the importance of competencies such as creativity, critical thinking, etc. This type of reporting system provides consistent feedback for essential competencies to students and parents along a continuum (Note: At present Ontario students in grades 1-12 receive learning skills feedback on a 4-point scale: E = Excellent, G = Good, S = Satisfactory, N = Needs Improvement).

In order to assist teachers in making reliable learning skills judgements, the Department of Education will need to provide a range of exemplars that showcase various “look-for” behaviours, skills, and/or artefacts. Ideally, the exemplars would converge with an overarching sociocultural orientation and include best-practice examples that were derived from play-based/child-centred, cooperative learning, and/or inquiry-based teaching approaches. Although this type of reporting system will not diminish the importance students and parents naturally ascribe to grades/achievement in traditional subject areas, it is an important starting point for promoting broader learning outcomes. Unfortunately, what is measured often matters the most in education and a systematic approach to documenting progress on twenty-first century competencies is an important consideration in raising the status and salience of these skills and dispositions for students, parents, and teachers alike.

### **Supporting a Renewed Vision of Pedagogy within Contemporary Schools: Implications for Teachers and School Leaders**

The challenge of ushering in large-scale reform and educational change in general ultimately rests with school-based practitioners. Both teachers and school leaders will need to have a voice in shaping the trajectory (and future modifications) of the redeveloped curriculum so that there is significant “buy-in” and a critical mass of educators eager to implement the proposed changes in a fulsome manner. Based on the findings reported in the NCCA’s (2018) report “*Primary Developments: Consultation on Curriculum Structure and Time: Final Report*” it appears that the consultation process thus far has been inclusive with proposed changes likely to reflect a significant majority of teachers’ perspectives. Nevertheless, as I have noted several times in earlier portions of this report the long-term success of the redeveloped curriculum will require significant professional development for aspiring, new, and veteran teachers. Certainly, the Irish Teaching Council, which produces a code of professional conduct for teachers, is an integral part of the overall reform given their role in reflecting standards of teaching, knowledge, skill and competence. Primary teacher education institutions in Ireland will undoubtedly need to reflect a new/renewed emphasis on twenty-first century skills in course work and practice-based elements of their programmes. Indeed, the relationship between teacher education and teachers’ pedagogical knowledge underscores the importance of a multi-pronged approach to curriculum reform efforts (see Chroinin, Mitchell, Kenny, Murtagh, & Vaughan, 2013; Davies, 2003; Driscoll & Rowe, 2012; Heywood, Parker, & Jolley, 2012; Hunter, Keown, & Wynyard, 2010; Murphy & Smith, 2012).

Teachers and school leaders will by default become the ambassadors of the redeveloped curriculum. Students and parents will undoubtedly seek confirmation that changes in curriculum,

pedagogy, and assessment/evaluation are in their best interests. Thus, one of the key implications for teachers and school leaders in the introduction and enactment of effective pedagogies is their ability to provide the rationale(s) undergirding the proposed changes – particularly for marginalised groups who often lack cultural capital in education settings. It will also be important for school leaders to emphasise and demonstrate through staff consultation sessions that there a variety of ways to demonstrate excellence in pedagogy – which could be supported by examples from their school as well those from a possible national resource bank which includes best-practice artifacts from across the Republic of Ireland. Ideally, school leadership will be distributed within schools so that the redeveloped curriculum is enacted in a comprehensive manner (Volante, 2012). The latter underscores the necessity of extending training and professional development opportunities to school leaders. Collectively, a renewed vision of pedagogy will require significant capacity building efforts over an extended period of time for the various stakeholder groups that are impacted by the reforms (i.e., teachers, school leaders, teacher education institutions, Ministry of Education and Skills, etc.).

### **The Role of Curriculum Design and Development in the Renewal Process**

The relative importance ascribed to an integrated approach to primary education versus the conventional approach of focusing on discrete subject areas remains a fairly contentious and unresolved issue within the international literature. Certainly, there is a growing recognition and research base to support an integrated approach for primary-aged curricula – a tradition that has its roots in the seminal work of John Dewey (see DeLuca, Ogden, & Pero, 2015; Fu & Sibert, 2017). Collectively, this body of research underscores the opportunities for high levels of motivation and academic performance that result from integrated approaches but also notes the constraints that are reflected in the conditions that impact curricular implementation – namely

lack of appropriate professional training and/or administrative leadership, among others.

Conversely, numerous studies assert that uneven pedagogical content knowledge in areas such as literacy, mathematics, science, technology, physical education, among others, significantly impact the learning outcomes of primary students (see Alexander, 2004; Gardner, 2012; Garret & Wrench, 2008; Hulten & Bjorkholm, 2016; Leavy & Hourigan, 2018; Norton, 2012; Parker, 2004; Parr & Jesson, 2016). These results underscore the importance of selection, training, placement, and professional development opportunities for teachers – particularly for areas such as language and mathematics – which are often given priority status within Western school systems.

Overall, the current international discourse appears to be skewed in favour of integrated approaches to teaching for primary students. However, as previously noted, gaps in students' learning are often tied to the uneven pedagogical content knowledge of their teachers. Perhaps one way to navigate this issue is to consider a hybrid model whereby particular curricular areas are grouped together such as science with mathematics or physical education with health education or history with geography, etc. Such an approach allows teachers to more seamlessly draw connections between closely aligned subject areas while also recognising the relationship between pedagogical content knowledge and student outcomes. This type of approach would also be supported by the explicit mention of cross-curricular competencies within the redeveloped curriculum. For example, in what ways could the curriculum explicitly tie mathematical reasoning with the scientific method or human geography with historical analysis? Perhaps the most prominent example, given the status of literacy around the world, would be to include a set of “critical literacy” expectations that are embedded across all subject areas. Ideally, these critical

literacy expectations would intersect with the various twenty-first century skills that are promoted within the redeveloped curriculum.

It is important to acknowledge that the literature is unclear at what age instruction should move from an integrated-approach to the more traditional approach that is often seen in primary and secondary schools around the world. The previous statement also converges with results from the NCCA (2018) consultation process which was also inconclusive on the appropriate point in the curriculum to introduce subjects. I am also reluctant to defer to stage model research in the field of cognitive psychology as it has been challenged by numerous researchers. However, there is nothing precluding the Republic of Ireland from the promotion of cross-curricular competencies across all age groups – including those at the secondary school level. Of course, the success of this approach is largely contingent on training and professional development considerations previously noted.

Lastly, it is worth cautioning that irrespective of the age a student moves to traditional subjects, taught largely within separate classrooms, *all* students – from the youngest to oldest primary age groups need to be challenged to become self-directed learners. Although there are developmental shifts that educators need to consider, the youngest primary students are also capable of being autonomous and flexible learners. It would be a mistake to assume only particular age groups (or ability groups) face the inevitable intellectual, social, and emotional challenges within schools that require academic resiliency. Thus, it would be helpful to articulate the nature and scope of learning and social progressions, particularly in relation to twenty-first century skills, which students should demonstrate as they progress through various grades. One should assume that the

variability in the expression of these skills could be fairly large based on the birth month of younger students.

### **Final Thoughts and Considerations**

This review is meant to provide support and direction to the NCCA's primary curriculum redevelopment efforts. Overall, the present review converged with similar themes noted in the NCCA (2018) consultation process, underscoring the importance of providing educators with a degree of flexibility and autonomy within their classrooms. It is worth reiterating that the development of a discrete list of pedagogical strategies may have the unintended consequence of stifling or undermining creativity in classrooms. Reform efforts in England, particularly those related to past literacy and numeracy initiatives, provide a good example of the latter. Rather, I have suggested an alignment with the sociocultural perspective as a way to orient the primary curriculum – which ideally could be supported with best practice exemplars from the field. This type of *Irish Education Resource Bank* (or similarly titled entity) would showcase a range of print and digital artifacts (including audio/video examples) to help support the introduction and continual evolution of the redeveloped curriculum.

Lastly, I would caution that evaluating the success of the redeveloped curriculum and the pedagogical strategies that are utilised within primary classrooms requires careful attention. The natural tendency to defer to external benchmark measures, increasingly from international organisations, often provides an incomplete picture for policymakers. Certainly, the Republic of Ireland has enjoyed considerable success on international achievement tests such as PISA, TIMSS, and PIRLS – particularly when one compares the Republic of Ireland's results against other English speaking educational jurisdictions. Nevertheless, the degree of alignment between

these international measures and age-specific national curricula is quite varied and often lacking attention to twenty-first century skills such as creativity. The previous caution also extends to national large-scale assessment measures which often exclude particular content areas and/or address a narrow range of knowledge/skills within the tested subject domain. Overall, accountability structures can exert significant influence on the enactment of primary pedagogies and have the potential to add or detract from authentic teaching and learning within contemporary school settings.

**Endnote:**

The present review included general suggestions in relation to teacher education and development – which are inextricably tied to the success of the redeveloped curriculum. If the NCCA has not done so already, they would be advised to commission a task force to consider the concomitant revisions/reforms that will be required by accredited teacher education institutions within the Republic of Ireland.

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