The Norwegian Ministry of Education and Research’s action plan for digitalization in primary and secondary education and training: appraisal and critique

Andreas Lund
Professor, Department of Teacher Education and School Research, University of Oslo
andreas.lund@ils.uio.no

Abstract
This paper reviews and analyzes the Norwegian Ministry of Education and Research’s Action Plan for Digitalization in Primary and Secondary Education and Training (AP20). Policy papers are often intended for administrative levels, but will also be perceived as guidance and recommendations for educators. The purpose of this paper is to examine the kind of support and guidelines AP20 gives to educators. This is done by partly investigating the plan’s action steps and priorities. However, AP20 will also be compared with other Ministry documents, in order to look for inner consistency across documents. Finally, AP20’s suggestions, action steps, and view of digitalization, will be briefly evaluated in respect to how digitalization naturally occurs and materializes in current and future-oriented educational practices, to determine its ecological validity. The analysis revealed that AP21 is somewhat ambiguous as to its purpose and intended audience. It comes across as rather instrumental: addressing infrastructure, resources, and skills. While this can be explained as being due to its primary aims, scope and audience, it cannot escape the larger educational and pedagogical perspectives, including epistemologies, to be relevant for policies and practices, administration and epistemic work. Thus, there is a need for clarification in future versions.

Keywords
digitalization, policy documents, administrative levels, educational practices

Introduction: type of document and criteria for review
With the repercussions of COVID-19 reverberating throughout the educational sector, teachers, students, educational leaders, policymakers, and educational researchers have scrambled for productive, digitalized alternatives and add-ons to technological and pedagogical challenges (Gudmundsdottir & Hatlevik, 2020). In the course of only a few months, the educational sector has undergone changes and development that under “normal” circumstances would have taken years to materialize. Such efforts apply to acquiring infrastructure and software, putting digital resources to epistemic work, developing and enacting pedagogical practices that are distributed or hybrid, and designing tasks, assignments, and assessment forms that correspond to the sudden change in contextual factors. No wonder educators across all levels and types look for guidance and even “quick fixes”—solutionism (Teräs, Suoranta, Teräs, & Curcher, 2020). To gain a more comprehensive insight into this issue without the pretension of representing such “solutionism,” we examine one
recent potential source of guidelines or counseling: the Norwegian Ministry of Education and Research’s Action Plan for Digitalization in the Primary and Secondary Education and Training (Kunnskapsdepartementet [Ministry of Education and Research], 2020). This document is henceforth referred to as AP20.

The purpose of this paper is to examine the kind of support and guidelines AP20 gives to educators. This is done by partly investigating the plan’s action steps and priorities. However, AP20 will also be compared with other Ministry documents in order to look for inner consistency across the documents. Finally, AP20’s suggestions, action steps, and view of digitalization will be briefly evaluated in respect to how digitalization naturally occurs and materializes in current and future-oriented educational practices to determine its ecological validity (Säljö, 2010). However, focusing on educators only as the prime group of recipients or audience may appear unfair. Thus, an action plan must be seen in a wider context.

An action plan outlines measures or action steps to be taken in order to operationalize a strategy or vision, explaining the what, when, and how of achieving a goal by focusing on essential ideas and the steps taken to make them materialize (see e.g. European Commission, 2020, for a more extensive action plan on digitalization in education). But while AP20 concerns education and digitalization and – at least indirectly – can serve to guide educators, it primarily addresses administrative levels, and municipalities in particular. Although this is not explicit in AP20’s introductory section, the accompanying press release (Ministry of Education and Research, 2020) connects its aims to “respond to some of the challenges municipalities have reported” (p. 1, my translation). An important backdrop is also that, “Today, 36% of the schools have no plans for systematic digital competence development, and merely 20 per cent report that pedagogic use of ICT is visibly integrated in annual plans and local curricula” (p. 2, my translation). The Ministry lists input from diverse parties (teachers, students, and publishers’ associations, local administrations, etc.). However, no input from the research field is registered.

To maintain relevance and applicability, an action plan is usually updated at certain intervals. Sometimes, risks and threats are invoked and discussed. Thus, an action plan is a vital discursive artifact that serves to shape the near future of, in this case, digitalization in and of primary and secondary education and training. As such, AP20 is intimately connected to and corresponds with the Ministry’s strategy for digitalization in primary and secondary education and training (Kunnskapsdepartementet [Ministry of Education and Research], 2017), henceforth referred to as S21. Also, the Ministry’s Action Plan for Digitalization in Higher Education and Research (Kunnskapsdepartementet [Ministry of Education and Research], 2019), will be cited where relevant in order to briefly examine inner consistency across levels.

The above framing of AP20 (and related policy documents) exemplifies how the purpose and genre of an action plan are not instantly recognizable. While it addresses administrative levels, it has implications for educational practice. And while it cannot be interpreted as a set of guidelines or as a specific educational resource, it does refer to strategies and principles that may be perceived as important recommendations for educators. In the following, the hybrid genre will be acknowledged, while the perspective adopted will be that of the educator or researcher more than the administrator, partly due to the aims and scope of the present journal. AP20 will not be subject to, for example, scientific document analysis or critical discourse analysis, but will serve as the point of departure for a research-informed commentary.
AP20: Structure and priorities
AP20 consists of some 20 pages and is structured around six themes: 1. An introduction focusing on roles and responsibilities, 2. Cooperation on access to digital learning resources, 3. Data protection and privacy issues, 4. Teachers, learners, and school owners’ digital competence, 5. The knowledge basis for digitalization in schools, and 6. The road ahead. In the context of the Nordic Journal of Digital Literacy, I believe it is most relevant to cover themes 1–3 only cursorily, while discussing themes 4–6 in some detail. As AP20 is published in Norwegian only, the translated quotes are the responsibility of this reviewer.

In the foreword (Chapter 1) by the current Minister of Education and Integration, Guri Melby, the sudden impact of the COVID-19 pandemic situation is emphasized: “2020 has been an extreme year … when schools closed, the work on digitalization suddenly acquired a whole new meaning” (p. 3). Also, the minister refers to the current work on implementing the new curriculum reform, LK20 (Fagfornyelsen). Thus, these contextual factors influence how AP20 is perceived, although they are not explicitly referred to.

AP20 begins (Chapter 2) by connecting to the Ministry’s digitalization strategy for primary and secondary education (Kunnskapsdepartementet [Ministry of Education and Research], 2017) and its two overarching goals: fostering students’ “digital skills” and using ICT to “organize and fulfil the education to increase students’ learning outcomes” (p. 5). This approach is connected to a decentralized policy with more latitude for municipalities/school owners to warrant digital competence among teachers. It is followed by a section devoted to suppliers of digital administrative and educational resources, requirements and specifications.

Thus, already in the introductory chapter, we detect a somewhat instrumental and effects-oriented approach. This impression is reinforced in the following sections but must be related to the genre and audience, as briefly noted in the introduction above. The subsequent Chapter 3, concerning cooperation on access to digital resources, dwells on administrative and formal issues such as standardization of services and access points, such as a service catalog of digital learning resources. The latter is prioritized in the form of developing and piloting a portal. Here, resources are categorized in accordance with certain attributes so that “teachers can effortlessly select resources for the discipline and the individual student” (p. 11). The chapter concludes with an intention to make the online catalog or portal stimulate competition among providers of digital resources.

While the above themes are, of course, important dimensions that deserve attention, epistemic issues and educational practices are rarely, if at all, included in the reflections, recommendations, or measures suggested. Although the structure of AP20 seems to allocate space for such issues in later chapters, an instrumental and even reductionist view of digitalization in education has been established.

The next theme (Chapter 4) involves data protection and privacy issues, a theme that has become increasingly important (cf. the EU’s General Data Protection Regulation [GDPR]) in respect to keeping personal and sensitive information from being accessed without permission or used for commercial purposes. The chapter concludes with the objective of establishing an expert group to investigate pedagogical, legal, technological, and ethical issues in order to build a solid foundation for policymaking. This is a highly relevant and most welcome initiative. However, this chapter gives the impression that students are passive objects exposed to risks. With increasingly more powerful and sophisticated technologies and people’s digital traces and residue, students can also, willingly or accidentally, violate privacy. This possibility could have been, but was not, included in the theme. However, it would also require a more agentive view of both students and teachers than what AP20 conveys.
In Chapter 5, we encounter the notion of professional digital competence (PDC), as developed and articulated by the Norwegian Centre for ICT in Education (Kelenrić, Helland, & Arstorp, 2017). AP20 does not, and is not expected to, explore this construct or its many elucidations (see Nordic Journal of Digital Literacy vol. 4/2014 for a series of valuable contributions). However, it dedicates one paragraph to the programming and algorithmic thinking for problem-solving, which can be involved in operationalizing PDC. Moreover, while this is an important competence, there is a danger that the broad notion of PDC will be conflated with skills-oriented proficiencies offered in the form of “competence packages” (p. 16). As in previous chapters, the focus is not on educational practices and the connections between digitalization and epistemic work (Aagaard & Lund, 2020; Lund & Aagaard, 2020) but on digital tools, their attributes, and qualities. In all fairness, one sentence does link programming to students as producers, not merely consumers. Still, this is not enough to escape the instrumentality that pervades the action plan.

AP20 points to three contexts wherein digital competence can be fostered: continuing education, education to become “teacher specialists,” and local competence development. Together, these would seem to provide a productive environment for cultivating educators’ PDC, and it will be exciting to see how these three converge in respect to their impact and development. Two action steps conclude the chapter on PDC. One pertains to in-service training and continuing education for teachers, making sure that these opportunities are relevant and adapted to technology-rich learning environments. The second step pertains to developing a guide for assessing quality in learning resources. Both steps also refer to the acquisition of technologies, vendors, and buyers, thus sustaining AP20’s tension between commercial and pedagogical priorities.

In Chapter 6, AP20 arrives at the knowledge basis for digitalization in school. Despite the puzzlement as to why this chapter does not come first in order to introduce, frame, and justify the action steps that follow, it does connect to research efforts and the Ministry’s strategy document, S21 (Kunnskapsdepartementet [Ministry of Education and Research], 2017). In this chapter, the plan explicitly states that “An exploratory approach to the use of technology in education must be linked to knowledge-based local work with the curriculum where experience and research yield valuable knowledge” (p. 19). The first action step is also worth quoting: “Provide the status of knowledge and analyze findings to improve our understanding of how technology impacts teachers’ practices and students’ learning and improves communication processes” (p. 19). This knowledge is, in turn, linked to “a substantial research project and contributes to better communicating recent research.” As educational research has also often been confined to small-scale classroom research of limited duration, this signal for large-scale, comprehensive, and longitudinal research projects has been sorely missed and is indeed welcomed by the educational research community. The remainder of Chapter 6 lists a number of additional welcome action steps, such as establishing a roundtable conference for researchers investigating digitalization in schools. The aim is to strengthen and support a thematic network, sustain discussions, and contribute to joint conceptual understanding. Finally, AP20 briefly touches upon students’ digital competence, but the focus concentrates on mapping and monitoring more than on promoting and cultivating.

AP20 closes with a short chapter on the road ahead. Linking the steps outlined in the action plan to longitudinal perspectives found in S21 and LK20, the final words anticipate a new strategy for digitalization that will be operative as of 2022.
Action plan and strategies

An action plan can be understood as “operational policies” that correspond to wider national policies and strategies. For sustained innovative and productive use of ICT in education, there must be a close connection between action steps and such policies and strategies (European Commission, 2020; Kozma, 2008). As for AP20, it is thus tempting to regard it as ideally providing guidance for educational use so that, in turn, productive practices will accrue across the country’s educational system and thus have an overall impact on its educational system. However, as the intended audience is largely found at administrative levels, this temptation must be avoided. As pointed out in the introduction, context, genre, and readership do not accommodate such expectations. Nevertheless, without a strategic rationale moored in a principled view of digital technologies, digitalization, learning, and teaching, ICT policies and action steps become merely instrumental, and risk being techno-centric. Consequently, a brief examination of the current strategy for digitalization, S21, (Kunnskapsdepartementet [Ministry of Education and Research], 2017) might serve to further contextualize AP20 and reveal to what extent it is consistent with S21.

The S21 is divided into two main sections. The first conveys overarching perspectives, and the second focuses on four vital issues that call for action steps: students’ learning and the importance of schools; competences; infrastructure; and general and vocational education. This structure is an interesting contrast to that of AP20, with its emphasis on applications, acquisition, standardization, and data security, and where a knowledge base occupies the last chapter (before touching upon the road ahead). S21 continues by identifying four main challenges: students’ inadequate digital competence, teachers’ lack of PDC, inferior quality of digital learning resources, and lack of access to accumulated insights from research and development.

The view of technology in S21 is not made explicit but comes across as firmly rooted in a “tools perspective”; it emphasizes enhancement more than transformation, effects more than affordances. A tools perspective involves an understanding of digitalization strengthening existing practices and invites comparisons of learning with or without technologies. It stops short of acknowledging the transformative potential that emerges when digitalization suspends the constraints of time and space, opens up learning for multimodal representations of knowledge, and turns students into producers. This amounts to epistemological change: how we come to knowledge and by what means. Thus, a tools perspective more than a transformative perspective corresponds with the view permeating AP20. However, S21 emphasizes teachers and students’ agency more than AP20 does, pointing to inclusion, collaboration, creativity, and student participation as key qualities. Educational practices and leadership perspectives receive more attention than digital applications and their attributes, and when digital learning resources are highlighted, the focus is more on function than features. Digital competence is connected to disciplinary competence and social learning, extending the somewhat narrow skills perspective commonly found in policy documents. As in AP20, digitalization is also connected to the new curriculum reform, LK20.

It might seem unfair to compare AP20 and S21, as the latter is a much more comprehensive, detailed, and nuanced document. Still, it is important to examine to what extent the action steps capture the essence of the broader strategy, not merely if AP20 is a stripped-down version of it. My reading finds that the strategy and the action plan essentially correspond but that the inner consistency between the two is weakened by AP20’s recurrent emphasis on instrumentality, administrative issues, and a techno-centric/skills-oriented approach that does not capture emerging educational practices (Kozma, 2008). This is not merely a question of AP20 having limited space, but a question of which perspective
materializes in the action steps. Again, this may have to do with the intended audience: AP20 for (primarily) school owners and administrative levels responsible for infrastructure and access to resources, and S21 for the broader educational sector.

Before leaving issues of correspondence and inner consistency, let us very briefly use a second action plan in order to corroborate, modify, or contradict the suppositions above: the Action Plan for Digitalisation in Higher Education and Research (Kunnskapsdepartementet [Ministry of Education and Research], 2019), subsequently referred to as AP-HE. In volume as well as in structure, AP-HE comes across as very different from AP20. Strategic choices and priorities are introduced from the start, significantly with “learning processes of the future” as the very first strategic priority (p. 5). The omission of such priorities in AP20 might appear downright mystifying without once again considering the differences in aims, scope, volume, and intended audience. Separate chapters on education and research follow before AP-HE ventures into management, support, infrastructure, and data protection issues. The educational horse is firmly before the instrumental cart.

Reading the small selection of policy papers referred to in this review, the issue of relevance also becomes urgent when we consult the new curriculum, LK20 (Utdanningsdirektoratet [The Norwegian Directorate for Education and Training], 2020) and its conceptualization of competence and deep learning. The revised definition of competence states that “Competence means to acquire and apply knowledge and skills to master challenges and solve tasks in familiar and unfamiliar contexts and situations [emphasis added]. Competence involves understanding and capacity for reflection and critical thinking” (p. 10). Similarly, the fundamental principle of deep learning involves the goal “for students to develop their understanding of vital elements and connections within disciplines such that they learn to apply subject specific knowledge and skills in familiar and unfamiliar contexts [emphasis added]” (p. 10). Using digital resources to cope with the unfamiliar represents a challenge for students and educators alike that requires guidance. Educators expecting to find such guidance in an action plan will however be disappointed. While this can be explained by the above discussions of aims, scope, and audience, it can be argued that, if such issues are beyond the aims and scope of an action plan for ICT in education, this needs to be explicitly stated from the beginning of the document.

The brief excursions into S21, AP-HE, and LK20 indicate that there is not only a lack of consistency, but also a tension between the latter three documents and AP20, respectively. It would seem that the next revision of AP20 could resolve these tensions and different priorities by explicating action plan priorities, purpose, and audience, while also relating its action steps to the priorities found in other policy documents. However, while this is, at least partly, a discursive effort, the question remains as to what extent AP20 serves as a useful, reliable, and relevant guide for digitalization in primary and secondary education and training beyond the people involved in providing infrastructure.

The ecological validity of the action plan

With the readership of this journal in mind in what follows, we view AP20 through the lenses of pedagogy and education more than those of administration and leadership, thus possibly taking certain liberties in recontextualizing its primary purpose. So far, we have assessed AP20 as an operational policy, that is, to what extent it captures broader strategies and corresponds to other policy documents with regard to consistency and, thus, potential impact on educational practices. Another concern is the degree to which the action plan corresponds to current practices and emerging trends in the wider world, that is, AP20’s ecological valid-
High ecological validity avoids oversimplification of a real-world situation and unsophisticated or unrepresentative sampling of information that constitutes the basis for the recommended action steps. This is a most important issue for teachers and leadership as well as for researchers, as it encapsulates usefulness.

Establishing a degree of ecological validity is a daunting endeavor, especially in a field that is in permanent flux and development, such as digitalization in education. Consequently, the following is a condensation of key practices and trends that have emerged in research and reports. The field is so vast that listing all relevant references is clearly beyond the aims of this paper (however, Aagaard & Lund, 2020; Facer, 2011; OECD, 2018; Tegmark, 2017 are among the more influential sources). In addition, the impact of COVID-19 adds a dimension of emergency to current and future action steps (Gudmundsdottir & Hatlevik, 2020; Teras et al., 2020).

Let us start by looking at emergency teaching. Although AP20 was probably written before the impact of the pandemic (but I am guessing here), it is mentioned in the foreword by the Minister of Education and Integration. She observes that “the work with digitalization suddenly acquired a whole new meaning” and points to “new ways of working” and “possibilities to test new learning technologies” (my translations). However, there is no substantial content beyond these general reflections. When Gudmundsdottir and Hathaway (2020) found that teachers were expected to become online teachers overnight, and that 67% of Norwegian teachers had little or no experience with wholly digital teaching and expressed a need for advice and guidance, the call for relevant action steps reverberated. Gudmundsdottir and Hatlevik (2020) have pursued this issue by pointing to a teacher role in transformation due to homeschooling, distributed teaching, and hybrid and polycontextual modes. The traditional classroom collective is thus largely replaced by an online culture of sharing, but also by student dropout and lack of continuity. As a result, teachers’ professional digital competence and digital agency emerge as being more important than ever (Aagaard & Lund, 2020). In responding to such an emergency situation, Teräs et al. (2020) have noted, caution should be taken against quick fixes (“solutionism”) as often presented or sold by the ed-tech industry and how their “capitalist instrumental view of education” (p. 863) results in “redefining and reducing concepts of teaching and learning” (p. 863). As the examination of AP20 has shown, this warning is relevant with a view toward subsequent policy revision(s) where distributed and video-assisted practices and accompanying resources must definitely be addressed.

While the situation caused by the pandemic cannot be expected to be fully incorporated into AP20, more longitudinal trends and practices are strangely absent. For the sake of brevity, I will have to merely list some robust (in terms of pervasiveness and durability) examples that are increasingly felt in “real-world situations”: computer-supported collaborative learning (and its consequences for tasks, activities, and assessment) calls for action steps. The same goes for gamification and serious gaming. The increasing trend of immersive learning to use virtual or augmented reality, including avatars, also has an impact on schooling, at all levels. Finally, social media opens up a set of Chinese boxes with communicative affordances and hazards. Such boxes contain, for example, a demand for netiquette, a need to prevent cyber-bullying, and competence to maneuver in networks where fake news travels faster and becomes more persistent than facts.

If we consider applying the complexities of artificial intelligence, big data, and learning analytics to the abovementioned practices, we can discern the need for an action plan that rises above instrumentalism, acquisition, and software features, and connects infrastructure with practices.
To subsume the above trends and practices under umbrella terms is risky, but may still work as a framework for action plans with high ecological validity. These terms would then be PDC in its broadest sense, collaborative practices across time and space, and (transformative) agency to cope with problem situations as well as new affordances. If we go beyond the format of an action plan, we can make out the contours of a series of new epistemologies (Lund & Aagaard, 2020). This would involve documents devoted to curricula, strategies, and overarching perspectives on education.

Conclusion
This brief review of AP20 has revealed that it is somewhat ambiguous as to its purpose and intended audience. It comes across as addressing infrastructure, resources, and skills, but cannot escape the larger educational and pedagogical perspectives described in this review. Thus, there is a need for clarification in future versions. AP20 is only partly consistent with other policy documents, such as strategies and national curricula. They all share a somewhat instrumental perspective, but AP20 is far more reductionist in its prioritized steps and lacks many of the pedagogical and practice-related approaches found elsewhere. Thus, the small cluster of documents referred to above reveals not only omissions, but also somewhat conflicting interpretations between documents that acknowledge changing roles and changing practices and AP20’s prioritization of formalities, regulations, and standardization. Admittedly, this is a simplified picture, and AP20 offers some very timely and constructive steps, for example, the establishment of an expert group dedicated to investigating issues of student data and learning analytics and summarizing research, thus yielding insights into teachers’ practices and students’ learning.

What to this reviewer is more worrying is AP20’s lack of ecological validity, understood as an oversimplification of a real-world situation and unsophisticated or unrepresentative sampling. The focus on instrumental skills and digital resources as tools and their attributes, features, standardization, and so on obscures educational practices and epistemic dimensions. There is a need for action steps that address the issues of digitalization and affordances, purposes, function, and designs of learning environments and activities in digitalized contexts, which also ensure that teachers, students, and leaders exercise agency far beyond simply deciding what to buy and navigating online software catalogs. To what extent this should be addressed in an action plan or outsourced to other policy documents needs to be explicated.

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