

Second International Textbook Summit

Quality, Functions, Supply and Demand

Reykjavik, 28 June 2019

Convened by **Arnór Guðmundsson**, Menntamálastofnu

Supported by **Tim Oates**, Cambridge Assessment



**Cambridge
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1

Background

The first International Textbook Summit was held in London, in June 2018. There, 14 countries discussed the form and function of textbooks in educational improvement and educational processes. Despite the decline in research on textbooks, policy-makers, publishers and textbook analysts asserted the importance of textbooks and the sophisticated set of functions which they carry. Iceland is currently in the process of considering national strategy on educational materials, and so it was timely and appropriate to have a second International Textbook Summit in Reykjavik. Crucially, like the London summit, the meeting considered textbooks in the widest sense — suites of materials for teachers and students: teachers' manuals, student textbooks, practice and workbooks, accompanying digital materials focusing on assessment, enrichment and extension. But this second meeting went beyond the London summit. In London, attendees examined quality and function in detail, concluding that to neglect textbooks is a gross error in public policy, and that international comparisons reveal important quality principles. In Reykjavik, further consideration of quality and function was accompanied by invaluable analysis of market structures and private–public relations. Whilst we have new insights into quality and function, ensuring a sustainable supply of high-quality materials to hard-pressed public school systems requires sophistication and constant care.

2

Address by Lilja Alfreðsdóttir, Minister of Education, Science and Culture, Iceland

The Minister welcomed hosting the second international summit on textbooks. Iceland's review of learning materials is seen as a fundamental part of comprehensive public policy on education. Like many nations, Iceland recognises the changes which are sweeping through economies, education arrangements and societies. The challenge in the face of these changes is to not only raise attainment, but to ensure that all children have access to the rich content of the curriculum: "...All education creates equality as everyone is thus under the same influence and has the same access to the treasury of knowledge and views..." (John Stuart Mill). The long culture of reading in Iceland has served both children and society well, and new policy needs to both respond to the challenge of change and build on the existing strengths of the system.

The Minister recalls and values the books of her childhood and education, and values handing on to the next generation both a love of reading and the means of accessing human culture and accumulated knowledge. Policy needs to balance the skills and approaches needed to navigate the massive and growing body of information held in the transnational digital world with ensuring that cultural identity and love of Icelandic language is not lost. The challenge for small countries with unique language and culture cannot be overstated; but it is not unique in this challenge: Iceland can serve as an importance case study for other small nations wishing to assume an important role in global trade and global relations but also emphasising the need to retain a sense of heritage and belonging.

The policy coming from the review of learning materials will need to be creative and forward-thinking. The digital form will need to play a role alongside traditional materials but it must serve, not dictate the approaches to teaching and learning which will bring high attainment and improved equity.

For this summit to have an international group of policy-makers and researchers focus on the issues of quality of materials, their form and the structure of markets is to make evidence-based policy more likely, and more robust. This second summit is important, and comes at exactly the right time.

3

A view on the state of policy and practice

Tim Oates, Director of Assessment Research and Development, Cambridge Assessment, United Kingdom

This is a short note to summarise the position which I think Iceland and so many nations currently find themselves in: what should be the role of textbooks and to what extent should digital technology be used to substitute for traditional educational materials?

I believe that there is a great deal of commercial and ideological pressure being applied to policy-makers and educationalists, and this pressure runs the risk of distorting policy-making.

There are known assets and benefits of paper-based materials. In high-performing systems around the world, those assets continue to be exploited and developed. These include:

- support to teachers on aims, pedagogy and interpreting National Curriculum content and requirements
- sequencing and pacing instruction
- supporting structured and purposeful study outside class contact time
- reducing teacher workload
- encouraging wide reading by pupils.

These are key proven benefits. High-quality textbooks play an important role in the ecosystem of educational provision. The rhetoric of “only bad teachers use textbooks” is incorrect and is part of ideological argument, not educational science.

The benefits and costs of textbooks need to be quantified in any system. The benefits are different in different settings, since some systems underutilise textbooks or have not established good patterns of use. The costs are different in different settings since different market models have been created in different nations.

But since there are proven benefits of effective use of textbooks, in public policy any move away from them needs to include consideration of how the functions currently supported by textbooks can continue to be supported by digital materials or by any other replacement materials. This is extremely important. Digital advocates and critics of textbooks tend to emphasise unproven benefits of new approaches, while citing the proven disadvantages of some approaches to existing paper-based materials. This is an illogical comparison, and runs significant risk of poor public policy. Advocates frequently do not compare:

- the assets of textbooks with the putative assets of new approaches
- the deficits of textbooks with the deficits of new approaches
- the cost and policy effort required to optimise textbooks and the gains which would be obtained
- the cost and policy effort of the changes required to optimise the new approaches and the

chances of securing gains.

Only when these realistically are compared, using robust information and data, can a well-grounded public policy be formed.

We believe that many new online facilities and resources have not been designed by teams with sufficient understanding of educational research and theory. Frequently they possess the following serious defects:

- An assumption that learning is an entirely individualised process. This omits the crucial social learning which occurs in the classroom in high-performing systems.
- An assumption that young children have a highly directed and highly functional rational sense of motivation, when in fact children do not have conceptual schema or motivation structures which match the patterns displayed by highly motivated adults.
- An assumption that the skills required amongst teachers to deploy new technology and support individualised learning are self-evident or an existing skill set in teachers and managers in schools. They are neither.
- Serious weaknesses in respect of pedagogic and assessment theory. There are particular concerns about 'locked-in low expectations' of some tracking systems, and 'phenomenon-based' or use of complex contexts in learning.
- An assumption that the full cost of digital materials — production, deployment, maintenance of service, response to user issues (first-line support), continuing supply — is less than paper-based materials, when there is strong evidence to the contrary.

Digital technologies clearly have capacities which paper materials do not possess — video materials, interactive elements, adaptive assessment and learning. We also have evidence of beneficial outcomes from a very limited set of the many thousands of digital developments. The few examples of benefit suggest that digital resources must be designed with a solid research base and full recognition of the quality criteria which already apply to paper-based materials. The collateral disadvantages of some digital materials — discouraging attentiveness; discouraging extended reading; increasing parent-child conflict over homework, etc. must be included in any public policy development process. I continue to remain extremely concerned about the extent to which new digital materials may open up differences between social groups. Where materials presuppose high levels of self-motivation, where they include complex learning approaches and individualised learning based on preferences, all existing evidence suggests that such differences are likely to increase, not decrease.

In considering policy for Iceland on high-quality learning materials I would like to draw attention to the following:

We have yet to optimise the use of existing paper-based suites of material. The international comparative work undertaken by Cambridge Assessment shows that the features of materials in high-performing systems (Singapore, Shanghai, Hong Kong) have not been widely recognised. We have collated the insights in the form of criteria, and these can help develop state-of-the-art suites of materials comprising textbooks, work books and practical books, with allied online support materials. We believe that public policy on improving education needs to consider the substantial gains which are promised by enhancing the performance of existing paper-based resources.

The optimisation of existing textbooks must include professional development and training. We do not believe that the move to digital materials can be accomplished successfully without high levels of professional development and training. Therefore the costs and assets of improving use of existing forms of resources should be systematically compared with the costs and assets of digital

resources. My own view is that there are still substantial gains to be made with focusing on the optimisation of use of existing materials, and that this improvement strategy should not be overlooked.

Finally, our international analysis has explored the nature of markets and sustainability. These two fundamentals frequently have been neglected in the rush to focus on digital materials. Market structures and sustainability need to be deliberate and prominent parts of public policy on education resources. Many nations operate careful State–private partnerships in respect of the provision of educational resources, often with processes for enacting State approval for quality and supply. Hong Kong and Singapore are good examples, with multiple providers carefully regulated by the State to secure quality, achieve managed costs and guarantee supply. By contrast, one European country recently has enacted new policy which has disrupted established market relations, and by so doing has seriously threatened sustainability — i.e. continuing supply of high-quality materials.

Again, paper-based materials (with accompanying digital resources of certain types) appear to possess far greater certainty regarding:

- cost to the taxpayer and State
- cost to parents and schools
- continuity of supply, sustainability over decades and beyond
- reinvestment in development in order to continually improve quality.

The assurances to the State regarding quality, assured patterns of use, and sustained supply must be applied not only to optimisation of existing forms of resources, but also to new digital propositions. The sustainability and market structure questions seldom have been adequately addressed, yet are fundamental.

4

An overview of the function of textbooks and related materials

**Tim Oates, Director of Assessment Research and Development,
Cambridge Assessment, United Kingdom**

Tim reinforced the importance of adding comprehensive understanding of markets in a given national context, alongside quality and function. Iceland has a population of 338 000 and therefore a low tax base, which has many demands on it. It costs Iceland as much to develop high-quality materials as any nation, but it then has only a small possible market, limited by a unique language. The varied and high demand on public finances makes offers by tech companies attractive: low-cost materials, often subsidised by high private investment flows, seemingly 'state of the art'. It is tempting to policy-makers to say 'yes' to such offers. But important questions must be asked about the quality of underlying learning models (assumptions inconsistent with research can be 'baked in' to materials and systems), the actual costs and impact, and the sustainability of supply. The goal is high-quality materials, supporting learning in a highly effective way, supplied to schools on a sustainable basis.

Cambridge Assessment has drawn attention to the low use of textbooks in England, with TIMSS (Trends In International Mathematics And Science Study) data showing very low use compared to Finland and Singapore. At the same time, a perceived crisis in teacher workload in England would be relieved by increased use of high-quality materials, particularly impacting on the above average preparation time shown in TALIS (Teaching and Learning International Survey).

The 'anti-textbook ethos' originally identified by Marland in 2002 is present in England, and increasingly reported in other nations. Seeing textbooks as antithetical to 'modern' learning commits a gross simplification of more complex and legitimate theorisation of 'individualised learning'. Reynolds and Farrell's 1996 international review, which showed it was teachers in high-quality systems who were most supportive of the use of high-quality textbooks, still obtained when the 2010 curriculum review in England researched this issue. A teacher or system which rejects use of high-quality textbooks as being antithetical to the learning of individual children displays both misconceptions about the function and use of textbooks as well as misconceptions about individualised learning. The Organisation for Economic Co-operation and Development's (OECD) own PISA (Programme for International Student Assessment) data shows that well-structured teacher-directed learning is highly correlated with high performance, while student-led instruction correlates with poor performance. Approaches and instructional materials which mobilise naïve models of individualised learning can result in 'locked-in low expectations' and learning preferences which become a systematic disadvantage. This is extraordinarily evident in the highly gendered nature of subject choice in 16–19 year old in England, with only 22% of girls studying physics.

The assets of textbooks range from showing clearly a subject domain – its shape and scope – to clear elaboration and extension of ideas. Well-designed materials are based on sound pedagogic and didactic models, communicate these models to teachers and learners, and establish these models in systems.

The functions of textbooks are extensive:

- 'Steering mechanism of education' — mediating National Curriculum/National Standards
- Reducing teacher workload
- Conveying values and models of ability
- Delineating learning progressions and sequences
- Focusing on key concepts, principles, operations and core knowledge
- Providing 'intelligent practice'
- Helping understand 'depth of treatment' of ideas and content
- Exposing pupils to ideas
- Supporting 'production' (writing, speaking, drawing, etc.)
- Providing formative assessment, pre-assessment and end assessment
- Allowing pupils to go backwards and forwards through a subject — rehearsing, revising, anticipating
- Giving pupils a sense of the 'size and scope' of a subject—a schema
- Supporting reform, improvement and maintenance of quality
- Supporting home–school links through homework exercises, discussion in the home
- Disseminating good practice
- Helping with curriculum continuity when teachers are absent or change
- Moderating the adverse impact of variation in teacher quality
- Encouraging wider reading, research and analysis.

Cambridge Assessment's analysis of the key foci for contemporary sophisticated and effective public policy on textbooks suggests that five issues are fundamental:

1. Quality criteria.
2. Allied professional development.
3. Market relations and sustainability – private–public relationship.
4. The role of textbooks in curriculum reform and pedagogic innovation.
5. Incorporating publishers' schedules into reform policy.

Textbook supply has important elements of public–private relations in many nations, with different market structures across nations such as England, Hong Kong, Singapore, Finland and the USA. Much production in the past has relied on small publishers operating on goodwill and philanthropy, but the last three decades have seen widespread consolidation of publishers, changes in ownership, changes in internal structure to increase efficiency, and massive disruptions and market instability. Curriculum shifts and changes have been widespread, and controversial new curriculum discussions

increase pressure for change. 'Digital disruption' is undoubtedly widespread.

Secondary and upper secondary education has high freedom over the curriculum in Iceland — what implications does this have for quality criteria relating to materials and for the principle of 'curriculum coherence' — i.e. coherence between materials, instruction and assessment? In a small system such as Iceland, high quality can derive from good communication with and between schools, exchange of and awareness of good practice, and so on. If equity and attainment figures are reassuring, then the factors at play in a small system can give high quality. But if there are concerns about quality, and data shows problems with equity, then the principles and actions which we have explored in our international comparative work should be considered. Materials can meet quality criteria yet still vary sufficiently to support varied curricular approaches in discipline areas. This is an important public policy area.

5

Summary of the Icelandic context and the challenges ahead

Arnor Guðmundsson, Director, Menntamálastofnun

Iceland currently is reviewing the policy for learning materials. Private–public partnership exists in respect of learning materials, with the Menntamálastofnun Directorate responsible for educational materials funded by the State. The Directorate has produced a policy review of publishing strategy, and this awaits Ministerial decision.

Iceland has an established tradition of reading, and high-quality textbooks have been a constant feature of the education system. Established publishers have supplied textbooks which are respected and used widely. But like many countries, Iceland is seeing changes in family and individual reading.

Iceland presents an interesting case regarding textbook policy, one which presents challenges and tensions being experienced by many nations. It too faces rapid social changes and the impact of digital transformation, including the influence of 'Large Tech' moving into the area of educational resources. In the current rapidly changing context it wishes to ensure that educational materials continue to support and enhance curriculum coherence, but is faced with a small language community and intense competition for public funds.

The Directorate is fortunate in retaining an extensive archive of Icelandic textbooks, which enables us to reflect on the possible contrasts between the past and the present – for example, the 1958 geography textbook which was used for two decades versus the current drive to constantly updated digital materials.

The recent review has posited a comprehensive and holistic approach, aligning curriculum content and pedagogy, with textbooks and materials as a key instrument for effecting this coherence and alignment. Increasingly there are choices about the form which materials should take – the need for choices in media to allow optimum support for specific learning activities. Iceland has a tradition of a good community of textbook authors; the continuation of this tradition is important to the nation.

The development of high-quality materials is only part of effective policy: the materials need to be implemented in effective ways. The changing form of educational materials provides both an opportunity and a challenge: teachers need to develop effective practice around materials. To have the same textbook for two decades, as Iceland has had in the past, allows custom and practice to build up around topics and themes in the curriculum. This continuity and constancy is now changing, and the practical implementation issues associated with new learning materials is a significant challenge. These are all issues confronted in the publishing policy review, and will impact on the policy emerging from the decision-making around the review.

6

Government versus educational publishers: the changes of the paradigm in Poland

Robert Kuc, Publishing Director, Atalain, Poland

Poland is an important case study, due to the fundamental changes which have occurred in textbook policy and market structures. It is not clear that the shift in paradigm has improved the sustainable supply of high-quality materials – indeed the reverse appears to have occurred. In swift sequence, the arrangements to 2014 were based on a free market in supply (but with the coherence of alignment to a national curriculum), moving in 2014 under a new government to the State as publisher, to a new 'hybrid' model of a regulated market from 2017.

Following the end of communist rule in 1989, Poland has enjoyed both economic and educational success. In 2018, economic growth stood at 5.1% and unemployment at a low 3.8%. But the changes in textbook paradigm have had a big impact on market structure. The market for books in Poland stood at 700M euros in 2014, with the school textbook market at 220M euros. Purchasing principally was by parents, with complaints that the cost of 60–120 euros per year per child was too high. Growing concerns amongst parents perhaps inevitably led to political parties assuming a deliberate position on the market and costs. Government also was concerned about disparities in purchasing power between social groups and regions. With restrictive policy implemented in 2014, publishers were adversely affected by the move to State purchasing and provision – a number of publishers filed for bankruptcy and others immediately moved to the development of new markets. The change cycle has been rapid and the nature of structural reform profound. For example, leading publisher WSiP originally was owned by the Polish Treasury. In 2010 it was sold by the Polish Treasury to an American-based private equity firm. As a result of the 2014 changes, the owners in 2016 looked to sell the company and exit the Polish market. This period of market contraction saw short-term improvement in conditions for large publishers, and considerable consolidation.

Distribution patterns shifted; less turnover in the traditional parent-purchasing market placed great pressure on small-and medium-sized bookshops, many of which closed; 1400 bookshops closed, with 400 remaining. The distribution problems favoured larger distributors. Municipalities' preference for single invoicing for each school again fuelled consolidation.

In 2015–16, the Government undertook further policy revision, proposing a move to exclusively digital content, with the Government co-ordinating the development process for e-books aligned to the National Curriculum.

Poland traditionally has a system in which textbooks are used extensively, and from the 1990s to 2014 saw both significant increase in public expenditure on education and significant improvement in participation and achievement – a rate of improvement well above the OECD average.

From 2014, the number of textbooks available for schools dropped, but use remained high – with nearly 100% of schools using the Government-co-ordinated textbooks. In 2015 the Government discontinued the textbook programme, moving to providing financial assistance to parents' purchasing of textbooks.

The book market dropped from 220M euros in 2014 to 133M in 2018, a 40% reduction. This has adversely affected the development investment and future of specific providers, leading to concerns about quality and sustainable supply. Just as international research on quality criteria has increased, capacity to capitalise on the insights from this has reduced.

The phases can be summarised as follows:

Prior to 2014:

Low regulation of markets, but with structural co-ordination to ensure coherence, parental purchasing and ownership. The State sets criteria and curriculum specifications; appoints approval experts; approves textbooks. Publishers apply for paid State approval; promote approved titles to schools; provide books for distributors; provide free professional development. Teachers select textbooks from approved lists; attend free professional development. Parents pay for books and workbooks in all education phases; own the books.

2014:

Market restructuring with State as producer in lower primary; State funding textbook purchasing in all phases; municipality ownership of books. The State sets criteria and approves books, and becomes publisher with no approval in lower primary. Publishers operate within price caps/limits for upper primary and lower secondary, and within a new three-year purchasing cycle. Teachers in lower primary select books from State, or from publishers in other phases; select additional exercise materials; selections approved by head teachers and municipalities. Parents do not pay for books and books are owned by municipalities. Workbook use declines absolutely.

2017:

Further market restructuring, with publishers again able to offer books in lower primary. Price caps operating in first eight years of schooling. Free market again established in upper 4–5 years of vocational and general schooling.

While purchasing pressures have been reduced on parents, the set of changes has dramatically impacted providers, distributors and school practices. The distribution changes have closed 80% of small bookshops. Workbooks have been almost completely removed from the primary phase. Specialist publishers focusing on single subjects have declined significantly. The market has favoured larger providers and promoted deep consolidation. The reduction in distribution channels and the structure of the market may create conditions for larger global enterprise to dominate arrangements.

7

Economics of scientific text production, some incoherent thoughts

Thorolfur Matthíason, Professor, University of Iceland School of Social Sciences, Iceland

"I don't care who writes a nation's laws – or crafts its advanced treaties – if I can write its economic textbooks..." Paul Samuelson

The presentation focused on the provision of textbooks in higher education, as a case study of the application of fundamental theory to the structure of markets regarding textbooks. This yielded important insights.

The first key issue is the position and status of textbooks and expenditure on them. Despite their vital role in making knowledge available, learning materials typically account for 1.8% of total costs for tertiary education students in OECD nations — Austria is highest at 3.5%, Estonia lowest at 0.3%, while Iceland is close to the average. Tuition fees are both a higher component of costs (typically 8.0%) and more variable. This low expenditure impacts on status — which is low.

The second issue is the nature of the commodity. The knowledge contained and distributed through textbooks requires adequate description regarding its form, value and function. The value of knowledge is not reduced as consumption increases—it is a non-rivalry good in its consumption. It is hard to restrict access once knowledge has been created and initially distributed — the plot of a play, historical events, etc. — non-exclusion characterises such a good. Goods with these characteristics are classed as 'public goods' or 'club goods'. The knowledge itself can be characterised as a 'public good' but since there are instruments and processes of distribution and communication which affect its distribution in human populations, there arise paradoxes, contradictions and conflicts. The qualities of a pure public good enter into interaction with the qualities of a private good. This immediately can be seen in the cost increase of textbooks over time.

Key issues of commodification of the distribution of knowledge, the areas of demand structure (what schools, parents and pupils are asking for) and commodification of knowledge production around pedagogy (unique features of material which enhance specific materials) should be considered. The State's role in conditioning and structuring demand should not be underestimated.

Examination of textbook prices suggests a significant change in the underlying structure of markets. College textbook prices have increased by over 800% since 1980, three times the increase in the consumer price index, and significantly greater than the price of medical services. With high prices, the second-hand book market has grown significantly, and publishers and distributors have responded with rental arrangements for expensive texts.

This market structure requires description and classification. Whilst private goods typically are delivered efficiently in a market economy, with knowledge as a public good, free markets will tend to undersupply them, since they are readily available. With restrictions applying to distribution and

communication, public goods can assume the form of 'club goods' – shared between groups who have access.

However, club goods require elaborate pricing structures if market arrangements are to function, and function efficiently. Higher education colleges wish knowledge to be communicated and exchanged. But unrestricted access and use provides no market structure for publishers and thus promotes undersupply of scientific texts.

The extent to which scientific texts in higher education are restricted allows a market to function, but with complex tensions and balances. Again, while textbooks operate as a means of access to a body of knowledge where access to that knowledge is restricted – exemplified by complex bodies of technical knowledge such as economics – the textbook will operate as a private good, and if there is sufficient value in the market a textbook will be produced. But market failure can certainly occur: small markets might not be served, unless producers are prepared to subsidise production. Additionally, oligopolistic competition introduces dominance of particular texts and the ideas they contain. Entry of new producers and new ideas is difficult under such market conditions. That oligopolistic competition exists in the sphere of economics textbooks is evidenced by the pattern of market dominance of specific texts and the page length of both dominant texts and competitor texts. Page numbers in a dominant text increased as the publisher included more content over time, to gain market position. Competitors then entered the market with simpler, more accessible texts. The response of the original market leader was to cut length radically. But shorter texts allow easier copying of chapters – overlaying the pattern of adjustment of text length by publishers in order to compete are changes such as behaviours of students and lecturers copying material (facilitated by changing access to copying and scanning technology), shifts in text forms, etc. These changes have serious implications for market structure, moving restricted knowledge as a private good to being a public good.

With copying previously as an expensive and restricted service, the 'old' publishing model used pricing to mitigate the effects of the second-hand book market and copying. Rental of textbooks increasingly became an elaborated service in higher education, particularly in the USA, but now is a feature of large transnational online suppliers. In these rental/purchase arrangements, prices between outright purchasing and short-term rental are converging – and moving to the highest price point. The characteristics of the market suggest that publishers are finding it difficult to develop adequate payment models and that arrangements are neither optimal nor stable.

The journal market shows clearly the persistent change in structure which can occur in the 'knowledge arena'. From publication of individual treatises, journals emerged with individual subscription; moving to library subscription for individual journals; progressing to library subscriptions for 'bundled' journals; leading to elevated pricing. Driving towards open access and reduced prices, 'Plan S' or 'cOAlition S' was launched by Science Europe in September 2018 and already is changing underlying structures and markets in the scientific journal space. This includes journals with no involvement of a publishing house; for example, the Journal of Machine Learning and Research operates at a cost 6.50 USD per article, while commercial open source operates at 500–2,000 USD per article. This level of price competition places great pressure on publishers – to adapt or withdraw.

Similar changes may affect the textbook market, in a mirror of the journal arrangements. Universities may subscribe to bundles of textbooks from major publishers, or perhaps the market will move to highly open source arrangements. With learning materials, including teacher-created materials, increasingly similar market forces are present, such as distribution of text at zero marginal cost – but the actors in the textbook market are very distinct from the journal market, the function of materials is distinctive, and the incentive structures differ. Promotion, funding grants and participation in journal production all carry incentives which are absent from the

textbooks market.

It is clear that the situation with textbooks is unstable, and the future hard to predict. It is possible that large publishers will continue to see opportunity in courses with high levels of participation but may refuse to make any offer in low-participation courses. Quality issues also feature in the market dynamic: collaboratively produced materials may exceed the quality of material produced rapidly by individual academics, while assessment materials will benefit from technically robust design.

This initial review of market structure in textbooks suggests that production in small subjects and with a small customer base must be subsidised to guarantee supply. Almost the totality of secondary and primary school textbooks in Iceland meet this condition. Collaboration and consortia arrangements between universities – the site of knowledge production – may support production of open source material. Issues of control, locus of production, who should pay for content production, and 'comprehensive' cover of all subjects of whatever size, remain key matters.

8

The Icelandic Publishers Association 1889–2019

Heiðar Ingi Svansson, Chairman, Icelandic Literature Center, Iceland

Whilst operating in the same small economy and unique language setting, the structure of the primary phase textbook market and the secondary phase market differ considerably.

In primary, the State monopoly of production (93% of materials used) fails to provide any market opportunity for independent publishers. Wider issues such as 'political capture' or censorship need to be considered in these arrangements. The State provision limits the range of materials – and thus puts an onus on the State to ensure the highest quality possible – and budget limitations also restrict schools' choice outside State provision. The small size of the market presents restriction – and thus consolidates the position of the State provider in respect of production of materials, evaluation of them, running assessments, and so on.

The situation in upper secondary contrasts sharply with that in primary. A free market exists with no overt policy or structure. Two publishers remain active in the market. But problems stem from the lack of consistency in the curriculum offered across schools, which find it difficult to align curriculum content with updated and developing printed textbooks. The used book market – operating through book stores – is extremely active, undermining regular income to publishers. In addition, market relations are further made complex by State grants for development of educational materials by teachers and authors – who in turn have no obligation to publish. This reduces the public good represented by high-quality materials, since high-quality materials may be extremely restricted in their circulation. These factors represent significant market failure.

The instability in arrangements suggests that active development of public policy is essential. Iceland may be able to provide a public policy model which fits a 'Scandinavian' paradigm – a model which includes balanced interests between Ministry, Directorate, publishers, teachers and students. The State–private relation can extend to co-creation of new arrangements, using the knowledge and capacity that Icelandic publishers have built up over time. The active building of more effective market arrangements, with the guarantee of high-quality materials, would seem a vital way forward.

9

The role of professional development in enhancing the impact of high-quality materials

Joy Tan, General Manager, Marshall Cavendish, Singapore

The model for maths education in Singapore was developed through an initial phase of investigation of models around the world, combined with important pedagogic elements central to Asian educational methods. In Singapore there is a history of deliberately managed private–public partnership in respect of the supply of high-quality materials, with multiple suppliers operating within a system of co-development and textbook approval. Digital materials increasingly are playing a role, but these are being developed principally by existing publishers – so the existing strong and mutual relationship remains in place. The strength of the approach is the underlying pedagogic model for maths learning, and preserving and refining this is at the heart of the public policy processes.

Both the State and publishers see the highly connected nature of processes and market relations. Robust and high-quality content is seen as intimately linked to professional development, curriculum planning and holistic school evaluation, while materials development increasingly includes digital content providing adaptive learning and content which can be directly used in the classroom. Likewise, K-12 is seen as a continuum, in which there should be consistency and coherence in curriculum approaches.

Both State and publishers see teacher quality – and teacher understanding of the models underpinning specific subject materials – as fundamental to quality in each classroom and across the system as a whole. The rapidly changing nature of curriculum requirements requires constant learning amongst teachers themselves, requiring professional development alongside new editions and versions of materials. Professional development is a necessary requirement essential to the materials, not a 'desirable' or additional add-on.

The features of effective professional development are considered to be:

- alignment to curriculum and policies
- shared vision with high-quality instructional materials
- allocation of sufficient time to implement newly learned instructional approaches
- being responsive to school culture and enabling trial and error in application of new pedagogy
- clear strategies and plans to track and assess the quality and impact of professional development.

The approach is highly strategic, aiming to ensure coherence across pedagogy, underpinning curriculum models, National Curriculum content and sequencing, models of progression, and so on. The development of the professional learning is undertaken in conjunction with teachers, drawing

on their perceptions of effective approaches, and is consistent with Parkin's 'Seven characteristics of great professional development'. When innovation in curriculum specification occurs, such as the implementation of thinking skills, the professional development is seen as a crucial element in the effective enactment of policy. The coherence and 'penetration' of an innovation such as this can be seen in its extension right down into the structure and content of questions to be used in each subject. In mathematics, the structure 'see/think/wonder' extends learning into curiosity and enquiry, with variation in the questions on a topic encouraging observation and interpretation (see), then deeper thinking (think), then extended application, speculation and more demanding interpretation (wonder). Within this, maths problems expressed in a formal manner are accompanied by verbal problems which require the maths to be extracted, worked on, and then applied back to the problem.

It is highly characteristic of the approach in Singapore that the pedagogic and didactic models are fundamental to the content and structuring of materials, not mere curriculum coverage. This is sophisticated, yet standard practice for Singapore publishers.

Teachers' materials include the content of the pupils' textbooks and workbooks, but alongside this include guidance on the nature of tasks which should be given to pupils, rich questions which should be put to pupils during instruction in order to encourage pupil reflection and thought, alternative solutions to anticipate different responses from students and, crucially, the approach to extension and differentiation.

Far from being 'programmed learning', the approach gives a high level of well-structured and coherent resources to teachers, but all within a set of values which recognises both teacher professionalism and the need for sustained improvement in instruction. This systematic approach applies as much to new approaches in pedagogy such as enquiry-based learning and values-focused learning, as it does to teaching reading and fundamental discipline concepts. For example, on enquiry-based learning, units give a topic or scenario such as the permeability of soil, outlining: how to set up the practical work; how to encourage open discussion and thinking amongst pupils about the structure and steps of the activity; and what questions will both stimulate thinking and understanding and can be used for assessment.

Publishers and the State recognise the extent to which subtle and gross features of the content and form of materials can be deliberately managed to achieve important educational purposes and outcomes, for example:

- curriculum coherence
- high expectations and standards
- nurturing creativity and stimulating enquiry
- differentiating instruction
- encouraging complex problem-solving.

Singapore publishers recognise the State's drive to constant improvement in education, and see not only a need to constantly refine materials, but see professional development linked to the materials as essential to establishing a culture of continuous professional learning within schools. Formal lesson study features within the model, following the structure and model which has been refined through international research effort across the world.

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